

The University
OF
British Columbia



CALENDAR

TWENTY-SIXTH SESSION
1940-1941

VANCOUVER, BRITISH COLUMBIA
1940

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. Course leading to the degree of Bachelor of Commerce revised. Page 90.
 2. Requirements for entrance to course leading to the diploma in Social Work changed. Page 103.
 3. Fifth Year of the Forest Engineering course revised. Page 199.
 4. Fourth and Fifth Years of the Geological Engineering course revised. Page 200.
 5. Requirements in the course in Nursing and Health revised. Pages 204-213.
 6. Requirements for admission to graduate study in Agriculture modified. Page 267.
 7. Requirements for Double Course in Arts and Science and Agriculture set forth. Page 289.
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THE DOMINION-PROVINCIAL YOUTH TRAINING BURSARIES

Under the Dominion-Provincial Youth Training Programme a sum of money will probably be set aside to aid University students who can offer proof of scholastic ability and financial need. Application forms may be procured from Colonel F. T. Fairey, Director of Technical Education, Victoria, B. C., to whom they must be returned by September 1, 1940. The awards will be made on the recommendation of the Joint Faculty Committee on Prizes and Scholarships in consultation with Colonel Fairey.

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ACADEMIC YEAR

1940

August

- 15th Thursday Last day for submission of applications for Supplemental Examinations.
15th Thursday Last day for submission of applications for admission to Second Year Nursing and to the Teacher Training Course.
15th Thursday } Supplemental Examinations—Second Year Nursing.
16th Friday }

September

- 1st Sunday ACADEMIC YEAR begins.
2nd Monday Labour Day. University closed August 31st-September 2nd, inclusive.
10th Tuesday to } Supplemental Examinations.
17th Tuesday }
18th Wednesday } Last day for Registration of all First and Second Year Students. (See Aug. 15, above.)
20th Friday Last day for Registration of all other undergraduates except students in Extra-Sessional Classes and Directed Reading Courses.
20th Friday First and Second Year Arts and Science, Applied Science, Agriculture, Organization.
23rd Monday Lectures begin at 8:30 a.m.
30th Monday Last day for change in Students' courses.

October

- 5th Saturday Last day for handing in graduation essays and theses (Autumn Congregation).
7th Monday Last day for payment of First Term fees of all undergraduates except students in Extra-Sessional Classes and Directed Reading Courses. Payment of first instalment of Scholarship money.
9th Wednesday Thanksgiving Day. University closed.
9th Wednesday Last day for payment of fees for Autumn Graduation.
9th Wednesday Meeting of the Faculty of Arts and Science.
11th Friday Meeting of the Faculty Council. (Subsequent Meetings to be held at the call of the President.)
11th Friday Meeting of the Faculty of Agriculture.
15th Tuesday Last day for Registration and payment of fees of Graduate Students and of Students in Extra-Sessional Classes and Directed Reading Courses.
16th Wednesday Meeting of the Senate.
30th Wednesday Congregation.

November

- 11th Monday Remembrance Day. University closed.

December

- 11th Wednesday Meeting of the Faculty of Arts and Science.
13th Friday Meeting of the Faculty of Agriculture.
18th Wednesday Meeting of the Senate.
21st Saturday First term ends.
25th Wednesday Christmas Day. University closed December 24th-26th, inclusive.

1941

January

- 1st Wednesday New Year's Day. University closed December 31st-January 2nd, inclusive.
 6th Monday Second Term begins.
 13th Monday Last day for payment of Second Term fees. Payment of second instalment of Scholarship money.

February

- 12th Wednesday Meeting of the Faculty of Arts and Science.
 14th Friday Meeting of the Faculty of Agriculture.
 19th Wednesday Meeting of the Senate.

April

- 11th Friday Good Friday. University closed April 11th-14th, inclusive.
 17th Thursday Last day of Lectures.
 17th Thursday Last day for handing in graduation essays and theses.
 19th Saturday to }
 Friday, }
 May 2nd } Sessional Examinations.

Field work in Applied Science begins immediately at the close of the examinations.

May

- 1st Thursday Last day for payment of Graduation fees.
 2nd Friday Last day for handing in applications for Scholarships.
 10th Saturday Meeting of the Faculty of Agriculture.
 12th Monday Meeting of the Faculty of Arts and Science.
 14th Wednesday Meeting of the Senate.
 15th Thursday Congregation.
 15th Thursday Meeting of Convocation.
 24th Saturday Victoria Day. University closed.

June

- King's Birthday. University closed.

July

- 1st Tuesday Dominion Day. University closed.
 7th Monday Summer session begins.

August

- 15th Friday Last day for submission of applications for Supplemental Examinations.
 22nd Friday Summer Session ends.
 29th Friday Meeting of the Faculty of Arts and Science.
 29th Friday Meeting of the Senate.
 31st Sunday ACADEMIC YEAR ends.

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 F. W. VERNON, B.Sc. Eng. (London), Wh.Sch., A.M.I.Mech.E., A.F.R.A.S., Professor of Mechanical Engineering.
 S. C. MORGAN, B.Sc. (Queen's), M.Sc. (Alberta), M.S. (Calif. Inst. of Tech.), As.M.A.I.E.E., Associate Professor of Electrical Engineering.
 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), Associate 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 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 Y. DARLINGTON, Instructor.

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 GERALDINE HOMFRAY, R.N., B.A.Sc. (Brit. Col.), M.A. (Peabody), 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. (Session 1939-40.)
J. A. IRVING, M.A. (Toronto), M.A. (Cambridge), Professor and Acting Head of the Department. (Session 1940-41.)
JOSEPH E. MORSH, B.A. (Brit. Col.), Ph.D. (Johns Hopkins), Assistant Professor.
FREDERICK THOMAS TYLER, B.Sc., M.A., B.Ed. (Alberta), Ph.D. (California), 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.
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.
GEORGE MICHAEL VOLKOFF, M.A. (Brit. Col.), Assistant Professor.
WILBUR H. GOSS, B.S., Ph.D. (Washington), Lecturer. (Session 1939-40.)
C. RULON JEPPESEN, Ph.D. (California), Lecturer. (Session 1939-40.)

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. (Session 1939-40.)
W. A. CLEMENS, M.A. (Toronto), Ph.D. (Cornell), F.R.S.C., Professor and Head of the Department. (Session 1940-41.)
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.
ROBERT T. MCKENZIE, B.A. (Brit. Col.), Assistant to the Director.

University Health Service

DR. STEWART MURRAY, M.D., D.P.H. (Toronto), 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, M.S. (Oregon), Instructor in Physical Education for Men.

1940-41

Assistants

	<i>Department</i>
ALDOUS, JOHN G., B.A. (Brit. Col.).....	Botany
ALLEN, ALFRED R., B.A.Sc. (Brit. Col.).....	Geology and Geography
ASHFORD, WALTER, B.A. (Brit. Col.).....	Chemistry
BELL, ROBERT E., B.A. (Brit. Col.).....	Physics
BISHOP, ROGER J., B.A. (Brit. Col.).....	English
BOYD, MISS OTTILIE G., B.A. (Brit. Col.).....	Zoology
BRAWN, JAMES S., B.A. (Brit. Col.).....	Chemistry
BREEZE, JOHN E., B.A.Sc. (Brit. Col.)	
	Mathematics, Mechanical and Electrical Engineering
BREWSTER, CHARLES P., B.A. (Brit. Col.).....	Chemistry
CAMPBELL, JOHN J. R., B.S.A. (Brit. Col.).....	Dairying
CAVE-BROWN-CAVE, GENILLE, B.A. (Brit. Col.).....	Chemistry
COVINGTON, ARTHUR E., B.A. (Brit. Col.).....	Physics
DALE, MISS URSULA, B.A. (Brit. Col.).....	Zoology
DANGELZER, MISS JOAN, B.A. (Brit. Col.), D.Lett. (Univ. of Paris).....	French
DAVIDSON, HARRY H. A., B.A.Sc. (Brit. Col.).....	Mathematics, Civil Engineering
DAVIDSON, JOHN F., B.A. (Brit. Col.).....	Botany
DAVIS, EDWIN P., M.A. (Brit. Col.).....	Geology and Geography
DESHAW, BERNARD F., B.A.Sc. (Brit. Col.)	
	Mechanical and Electrical Engineering
DETWILLER, LLOYD, B.A. (Brit. Col.).....	Commerce
DILL, MISS CHARLOTTE, M.A. (Brit. Col.).....	Botany
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.).....	Chemistry and Poultry Husbandry
FITCH, FRED T., B.A. (Brit. Col.).....	Chemistry
FULTON, CLARENCE O., B.A. (Brit. Col.).....	Bacteriology and Preventive Medicine
GODSON, WARREN L., B.A. (Brit. Col.).....	Chemistry
GRIGSBY, MISS FAITH, B.A. (Brit. Col.).....	English
GUTHRIE, JOHN, B.A. (Brit. Col.).....	Chemistry
HARGREAVES, GEORGE, B.A.Sc. (Brit. Col.)	
	Mechanical and Electrical Engineering
HEDDLE, ROGNVALD D., B.A. (Brit. Col.).....	Chemistry
HERD, HAROLD H., B.A. (Brit. Col.).....	Chemistry
HILL, JOHN A., B.A.Sc. (Brit. Col.).....	Mechanical and Electrical Engineering
HUGHES, MISS NORAH, M.A. (Brit. Col.).....	Botany
IBYLL, CLARENCE P., B.A. (Brit. Col.).....	Zoology
JOHNSON, MISS PATRICIA M., B.A. (Brit. Col.).....	History
JONES, F. RAYMOND R., B.A., B.A.Sc. (Brit. Col.).....	Mining and Metallurgy
JORDAN, JAMES V., B.S.A. (Brit. Col.).....	Botany
KERSEY, LORNE R., B.A.Sc. (Brit. Col.).....	Civil Engineering
LANE, JOSEPH H., B.A. (Brit. Col.).....	History
LANGTON, ERIC G., B.A. (Brit. Col.).....	Physics
LIPS, ALAIR, B.A. (Brit. Col.).....	Chemistry
LYLE, ALFRED G., B.A.Sc. (Brit. Col.).....	Mining and Metallurgy

MALLETT, PERCY, B.A. (Brit. Col.).....	Mathematics
MARSHALL, J. KELSO, B.A. (Brit. Col.).....	Physics
MEAD, BRUCE R., B.A.Sc. (Brit. Col.).....	Chemistry
MILLEY, REGINALD, B.A. (Brit. Col.).....	Mathematics
MCCARTER, J. ALEXANDER, B.A. (Brit. Col.).....	Chemistry
MCCONNELL, MRS. MABEL, B.A. (Alberta).....	Philosophy and Psychology
McKENZIE, ROBERT T., B.A. (Brit. Col.).....	History
McLEOD, JAMES D., B.A.Sc. (Brit. Col.).....	Civil Engineering
McTAGGART-COWAN, MISS JOAN, B.S.A. (Brit. Col.).....	Horticulture
NEWTON, THEODORE D., B.A. (Brit. Col.).....	Physics
PATTERSON, RALPH F., B.A.Sc. (Brit. Col.).....	Chemistry
PEPPER, JAMES M., B.A. (Brit. Col.).....	Chemistry
PEPPER, THOMAS P., B.A. (Brit. Col.).....	Physics
POOLE, ROBERT V., B.A. (Brit. Col.).....	Botany
ROBERTSON, ROBERT F. S., B.A. (Brit. Col.).....	Chemistry
ROYS, MRS. R. L., A.M. (California).....	German
SALISBURY, PHILIP J., B.S.A. (Brit. Col.).....	Botany
SMITH, DAVID B., B.A. (Brit. Col.).....	Chemistry
TODD, MISS MARJORIE, B.A. (Brit. Col.).....	Bacteriology and Preventive Medicine
WADDELL, DAVID B., B.A. (Brit. Col.).....	Botany
WALDEN, FRANKLIN E., B.Com. (Brit. Col.).....	Commerce
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. Westbrook, 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 Westbrook, 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 a little over 120,000 volumes, and almost 100,000 pamphlets. It includes representative works in all the courses offered by the University, and a growing collection of books in other subjects. It is notable for its high percentage

of the Transactions and Proceedings of Learned Societies, and its long runs of scholarly periodicals—the materials essential to research.

It is one of three Canadian Depositories of the Library of Congress Catalogue, a collection of 1,700,000 printed cards, valued at \$70,000.00. The alphabetical classification, work on which was commenced at the receipt of the gift four years ago, is completed, and between 50,000 and 60,000 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 coloured, 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 over 1,000 serial 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 600 volumes, and is increasing as the Department's work develops.

The Extension Department's collection also includes more than 1,000 plays, for the service of the Dramatic Study Groups it has organized throughout the Province.

The Extension Department's book and play collections are loanable only to those enrolled in its study groups or courses.

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.

The Brock Memorial Building

In connection with the celebration of the Twenty-first Anniversary of the opening of the University in 1936, it was decided that a memorial be established by general appeal to students, graduates and friends of the University throughout Canada. A Committee representing all branches of the University decided that the memorial should take the form of a student union building, dedicated to the memory of the late Dean of Applied Science, Reginald W. Brock and Mrs. Brock, by whose tragic deaths as a result of an aeroplane accident the University suffered a great loss.

The original fund for the construction of the building was subscribed by relatives of Dean and Mrs. Brock, friends of the University throughout Canada and the United States, Alumni and Students of the University, and former colleagues of Dean Brock. The balance of the amount required to complete construction was provided by the students in cash and through a bond issue of the Alma Mater Society. Furnishings for the building were provided from a fund raised over a period of years by the Women's Union Building Committee of the University.

The building is situated adjacent to the playing fields and gymnasium. In it are located the offices of the Alma Mater Society and various clubs and student activities. The building contains, also, common rooms, lunch and tea rooms, and accommodation for social activities. In architectural design and exterior finish, it harmonizes well with the other buildings on the campus.

The Brock Memorial Building was dedicated in January, 1940.

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 1939 took the form of a Public Address System.

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

Dr. J. G. Jervis, of Milner, B. C., kindly donated to the Library his copies of the "Canadian Journal of Comparative Medicine." The donation includes the first twelve issues of the Journal since it began publication in October, 1937. It is Dr. Jervis' intention to contribute copies of the Journal from year to year.

Department of Civil Engineering

Mr. James Duncan, West Vancouver, "The Improvement of Rivers," in two volumes, by B. F. Thomas and D. A. Watt.

Department of Botany

(For Herbarium and Botanical Gardens)

SEEDS

CANADA	Division of Botany, Central Experimental Farm, Ottawa. Miss J. Bostock, Monte Creek. Mr. J. F. Davidson, Vancouver. Mr. J. W. Eastham, Vancouver. Professor R. C. Russell, Saskatoon.
UNITED STATES	Botanic Garden and Arboretum, Huntington College, Huntington, Ind. Botanical Gardens, University of Michigan, Ann Arbor. Brooklyn Botanic Garden, Brooklyn. Trinity College Botanic Garden, Ireland.
GREAT BRITAIN	Botanic Garden, University of St. Andrews, Scotland.
AUSTRALASIA	Botanic Gardens, Christchurch, N. Z.
FRANCE	Museum of Natural History, Paris.
GERMANY	Dr. F. Lemperg, Hatzendorf.
ITALY	Botanical Gardens, University of Rome, Italy.
ROUMANIA	Botanical Garden, de L'Universite de Cluj.
BULGARIA	Botanical Garden, University of Sofia, Bulgaria.
RUSSIA	Botanical Garden, University of Moscow. The Dendrological Garden of the Forest-technical Academy, Leningrad.

HERBARIUM AND GARDEN SPECIMENS

- Miss J. Bostock, Monte Creek.
 Mr. J. Breitung, McKague, Sask.
 Mr. J. W. Eastham, Vancouver.
 Mr. E. H. Garman, Cowichan Lake.
 Mr. E. Lamarque, Vancouver.
 Dr. Marianne R. Lourie, Vancouver, a collection of plants in memory of her husband, Arthur A. Lourie.
 Mr. C. MacFayden, Vancouver.
 Professor R. C. Russell, Saskatoon.

BOTANY AND BIOLOGY

- Mr. and Mrs. Wallace Graham, Cloverdale, a set of books and notes, in memory of Roy Graham, B.A.Sc., M.A.Sc. (British Columbia), Ph.D. (Chicago).
 Mr. H. Barclay, Vancouver, skull of bear and lynx.

Department of Forestry

- D. J. Smith Equipment Co., Vancouver—Pictures of mechanical timber-felling saws.
 New York State College of Forestry, Syracuse, N. Y.—Several hundred sample blocks of North American woods.
 U. S. Forest Service, Washington, D. C.—Several score of bulletins and miscellaneous publications.
 Dominion Forest Service, Ottawa, Canada—Statistical reports, bulletins.

For the fifth consecutive year the Department is indebted to the Dominion and Provincial Governments for work done in the University Forest under the Youth Training Plan and the Forest Development Project. An average of thirty-five men were employed in forest improvement, nursery and reforestation work for a period of approximately eleven weeks during the summer.

Department of Geology and Geography

1. Mr. J. M. Black, Dalhousie Apartments—Forty-one geological reports and magazines.
2. The Vancouver Natural History Society—716 catalogued artifacts and other ethnological specimens from the Great Fraser Midden, Marpole, collected by the late R. A. Cumming. The collection was purchased from Mrs. Cumming by the Vancouver Natural History Society at a cost of \$200 and donated to this department.
3. Mr. W. F. Byers—Nine mammal skulls from Africa, including rhinoceros, zebra, buffalo and antelope of several species.
4. Mr. Patterson, manager of Frederlck Goertz Co.—A set of crystal models made of hardwood.
5. Mr. and Mrs. Wallace Graham, Langley, B. C.—The library of the late Roy Graham, Ph.D., and his files and notes. These were disposed of as follows: Five textbooks given to the Department of Botany, along with pressed plants and files. Two hundred and twenty-four items given to the Library. Seventeen books and reports placed in the Geological Reading Room of this Department.
6. Mr. Edwin P. Williams—A grizzly bear skull from Bridge River.
7. Mr. Stanley Carnell—A cougar skull from Peace River.
8. Dr. Gordon Davis—Karoo fossils from Luano Valley, Northern Rhodesia, the first fossils from this locality.
9. Mr. S. E. Nord, Standard Oil Co., Vancouver—A box of well cores from California.

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.

- Cariboo Gold Quartz Mine—Courtesy R. R. Rose, P. N. Pitcher.
 Island Mountain Mine—Courtesy T. Munn, E. Johnson, G. Sinclair.
 Highland Bell Mine—Courtesy A. Staples, M. N. Mattson and staff.
 Consolidated Mining & Smelting Co. Ltd.—Courtesy H. R. Banks, C. S. Fowler.
 Britannia Mining & Smelting Co. Ltd.—Courtesy C. F. Browning and staff.
 Kelowna Exploration Mining Co.—Courtesy W. C. Douglass, C. B. Hume.
 Hedley Mascot Mine—Courtesy V. Dolmage, R. H. Stewart.
 Dividend & Lakeview Mine—Courtesy J. O. Howells.

Lake Shore Mine—Courtesy W. T. Robson.
 Sheep Creek Gold Mine—Courtesy A. D. Macdougall.
 Nicola Mine—Courtesy Messrs. Petter and Rutledge.
 Privateer Mine—Courtesy G. McDonnell.
 Surf Inlet Mine—Courtesy P. W. Racey.
 Contact Lake Ore—Courtesy C. Ridland.
 St. James Antimony Co.—Courtesy T. E. Neilson.
 Mercury Ore—Courtesy E. ap Roberts.
 Bismuth Telluride Minerals—Courtesy S. F. Campbell and associates.
 Taylor Windfall Ore—Courtesy G. C. Hyatt.
 Various Mineral Specimens—Courtesy R. W. Gaul, R. R. Taylor, J. M. Mel-
 drum, B. C. Chamber of Mines, J. E. Merrett, B. C. Department of Mines.

Department of Modern Languages

The French Government—Books on medicine to the value of 8,000 francs.

Department of Physics

British Columbia Telephone Co.—Electrical equipment used in commu-
 cation work.
 Patterson Screen Co., Towanda, Pa.—Assorted fluorescent chemicals.

Department of Zoology

Miss Maude Allen, Vancouver—A collection of insects from the Forbidden
 Plateau.
 Mr. E. R. Buckell, Kamloops—Skulls of grizzly bear and wolverine from
 Revelstoke District.
 Mr. John W. Eastham, Vancouver—A set of entomological bulletins.
 Miss Shellagh Kennedy, Vancouver—Gratuitous assistance in arranging
 insect collections.
 Mr. Hugh B. Leech, Vernon—A large series of entomological and zoological
 bulletins and separates.
 Dr. Ian MacTaggart Cowan, Victoria—Ectoparasites of rare marine birds.
 Mr. Neville Mayers, Vancouver—Samples of new insecticides.
 Mr. R. H. Painter, Lethbridge, Alberta—Bulk collections of wheat pests,
 the wheat-stem sawfly, and Say's grain bug, and samples of their damage
 to grain.
 Mr. Max Ruhmann, Vernon—A set of entomological bulletins.
 Mr. A. A. Scott, Vancouver—Insects and spiders from Forbidden Plateau.
 Dr. J. Wagner, Belgrade, Jugo-Slavia—Microscope slides of fleas, the identi-
 fication of B. C. fleas.
 Mr. F. C. Whitehouse, Vancouver—A further series of dragon flies; rare
 specimens from Yukon.

Department of University Extension

MOTION PICTURES.

Loaned by the American Can Company, three-reel sound film, "Alaska's
 Silver Millions."
 Loaned by the Danish Government, six-reel sound film, "Denmark at
 Work."
 Loaned by the National Parks Bureau, Ottawa, fourteen reels silent film,
 five reels sound film, two reels silent natural colour film.
 Gift of the Travel and Industrial Development Association of Great Britain
 and Ireland, London, England, three reels silent film and six reels
 sound film, comprising six educational subjects on England.

SLIDES.

Loaned by the National Parks Bureau, Ottawa, one hundred and seventy-
 eight hand-coloured slides of scenes in the National Parks of the
 Canadian Rockies.
 Gift from the estate of the late Mr. J. Porter, Hollyburn, B. C., 3,350
 slides and a large collection of negatives on a wide range of topics.

PLAYS.

Gift of the Dramatists' Play Service, New York, one hundred and fifty
 plays.

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 "Admission to the University," see Page 33, and for "Registration and Attendance," see Page 35.

Courses of Study

For the Session of 1940-41 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 enabled the University to collect much valuable information on the special requirements of Adult Education in British Columbia. Various experimental

projects were tried, and, based upon the experience gained, were rejected, modified, or accepted as the basis for a more permanent programme. As a result a practicable policy has evolved—one adapted to local conditions, sound in educational concept, comprehensive in scope, yet within the financial resources of the University. Through the activities of the Department of University Extension, the University is contributing enduring benefits to the educational and social welfare of the Province.

During the past year, the University, through the Department of University Extension, has been co-operating with the Dominion and Provincial Departments of Labour in the Dominion-Provincial Youth Training Plan. The Department of University Extension has also been co-operating with the Dominion Department of Fisheries in providing an educational programme for British Columbia fishermen.

The present activities of the Department include the following:

(a) *Extension Lectures.*

Through the Department arrangements are made for members of the University Teaching Staff to give lectures at various centres throughout the Province.

(b) *Evening Classes.*

Each year a number of Evening Classes on various subjects are held in the city of Vancouver.

(c) *Dramatics.*

During the winter, short courses in dramatics are held 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.

(d) *Visual Instruction.*

(i) Lantern and Film Slide Service. Approximately 400 sets of lantern and film slides, many with lectures, are available for loan to schools, churches, and other organizations. A catalogue of these may be obtained upon request.

(ii) Motion Picture Service. A Film Library of up-to-date motion picture films has been established. Films from the Dominion Government Motion Picture Bureau are distributed in British Columbia through the Extension Department. A catalogue listing the films may be obtained upon application.

(e) *Study Groups.*

Study group courses are offered each year. These include:

(i) Economics and Public Affairs.

- (ii) History of the Theatre.
- (iii) British Columbia History.
- (iv) Modern Literature.
- (v) Practical Psychology.
- (vi) Credit Unions.
- (vii) Co-operatives.

(f) *Short Courses.*

Short courses in various subjects are offered by the Department during both the Winter and Summer Sessions.

(g) *Extension Library.*

The University Extension Library is a special collection designed to meet the needs of adults who wish to do systematic reading on any subject.

(h) *Radio.*

Each year the Department offers a series of educational broadcasts. During the U. B. C. Music Hour, recordings from the Carnegie Music Set are played.

(i) *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.

(j) *Youth Training Schools.*

Through the co-operation of the Dominion and Provincial Departments of Labour, the University conducts a series of Folk Schools at many centres throughout the Province. A longer course for Leadership Training is held at the University.

(k) *Educational Programme for British Columbia Fishermen.*

Through assistance received from the Dominion Department of Fisheries, the University has been able to offer courses on Credit Unions and Co-operatives to British Columbia fishermen.

(l) *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 Committee, 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 admission to University until graduation, so that as the student 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. All students who have been absent from the University for a year or more are to report to the Health Service Office within a month of return. All students who are to participate in strenuous athletics will be given an examination to determine their status of physical fitness. Later the medical officer has a personal conference during the Fall term with those who received examination. This conference is for the purpose of individualizing the previous examination and for the re-checking and "following-up" of any physical defects which were found at the time. 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. Students having problems dealing with emotional and personality difficulties may consult with the Director of Mental Hygiene.

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 very great 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 a communicable nature, including the Common Cold.

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 communicable 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 a communicable disease 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 received by 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

The University Health Service provides a Health Service for students attending the Summer Session. Details of this Service may be found in the Summer School announcement.

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 1940-41 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 Second Year of the course in Nursing (or the Third Year of the

Double Course in Arts and Nursing) a student must be eighteen 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 University Entrance (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 University Entrance 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 University Entrance examination standing against him will not be admitted to the University.

5. The University Entrance 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 these examinations are stated in the publication, "Requirements for University Entrance and Senior 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 University Entrance 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 examinations in the subjects not covered.

7. A candidate who wishes to enter by certificates other than a Matriculation or University Entrance 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

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

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 18th; for other Undergraduate students of the regular Winter Session, Friday, September 20th; for Graduate students, and for students in Extra-Sessional Classes and Directed Reading Courses, Friday, October 18th.

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.
- (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 for Undergraduate students of the regular Winter Session will be accepted after Monday, October 7th (two weeks

beyond the date when lectures begin) 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.



1948-47

F E E S

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 7th:	
Sessional Fee	\$ 75.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 13th.....	75.00
	<u>\$173.00</u>

IN SOCIAL SERVICE COURSE—

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before October 7th:	
Sessional Fee	\$ 75.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 13th.....	75.00
	<u>\$173.00</u>

IN TEACHER TRAINING COURSE—

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before October 7th:	
Sessional Fee	\$ 75.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 13th.....	75.00
	<u>\$173.00</u>

IN APPLIED SCIENCE—

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before October 7th:	
Sessional Fee	\$100.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	118.00
<i>Second Term</i> —Payable on or before January 13th.....	100.00
	\$223.00

IN NURSING AND PUBLIC HEALTH—

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before October 7th:	
Sessional Fee	\$75.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 13th.....	75.00
	\$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 (i.e., students in the Affiliated Hospital) the Sessional fee is \$1.00, payable with an Alma Mater fee of \$8.00, on or before October 7th.

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 7th:	
Sessional Fee	\$75.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 13th.....	75.00
	\$173.00

OCCUPATIONAL COURSE—

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before October 7th:	
Sessional Fee	\$30.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	48.00
<i>Second Term</i> —Payable on or before January 13th.....	30.00
	\$ 83.00
	\$ 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 7th, along with—	
Alma Mater Fee.....	13.00
Caution Money	5.00
<i>Second half</i> payable on or before January 13th.	

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 15th.	
<i>Second Half Unit Fees</i> payable on or before January 13th.	

FOR GRADUATES*

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before October 15th:	
Sessional Fee	\$62.50
Caution Money	5.00
	67.50
<i>Second Term</i> —Payable on or before January 13th.....	62.50
	\$135.00
	\$135.00

Each Subsequent Session:

Registration	\$ 5.00
Caution Money	5.00
	10.00

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

LATE REGISTRATION

See Page 36\$ 2.00

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 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 7th 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 38.)

MEDALS, SCHOLARSHIPS, PRIZES, BURSARIES AND LOANS FOR 1940-41

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 University Entrance and Senior 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, and a book prize to the value of \$10, for the best essay received during the Session 1940-41 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 43.

The Wilfrid Sadler Memorial Gold Medal

A gold medal, given by Sigma Tau Upsilon Honorary Agricultural Fraternity in memory of Professor Wilfrid Sadler, Professor and Head of the Department of Dairying, 1918-33, will be awarded to the student standing at the head of the graduating class for the B.S.A. degree.

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 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 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

*See Paragraph 1, Page 43.

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 British Columbia Scholarship*

A scholarship of \$50.00 is given by the Native Daughters of British Columbia 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 1939-40. 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 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.

*See Paragraph 1, Page 43.

The Standard Oil Company of British Columbia Limited Scholarship*

For research in petroleum engineering The Standard Oil Company of British Columbia Limited offers a scholarship of \$600 open to Honours Graduates in Chemistry in the Faculty of Arts or Graduates in Chemical Engineering in the Faculty of Applied Science. A portion of the scholarship not to exceed \$100 may be used for special equipment for the research problem. The topic of research shall be chosen after consultation with the Department of Chemistry of the University and the Standard Oil Company. Recipients must be qualified to undertake graduate and research work in respect of scholarship, research ability, personality and health.

The Britannia Mining and Smelting Company Limited Scholarship*

A scholarship of \$250, given by the Britannia Mining and Smelting Company, Limited, for research in mineralography, was awarded in the session 1939-40. The terms of award were as follows: This scholarship will be awarded to a graduate in Geological, Mining or Metallurgical Engineering in the Faculty of Applied Science. A portion of the scholarship not to exceed \$50 may be used for special equipment for the research problem. The topic of research shall be chosen after consultation with the Geology Department of the University of British Columbia and the Britannia Mining and Smelting Company. Applications should be in the hands of the Registrar by December 10th. Recipients must be qualified to undertake the research work not only in respect of scholarship and research ability but also in personality and health.

The Cariboo Gold Quartz Mining Company Limited Scholarship*

A scholarship of \$100, given by the Cariboo Gold Quartz Mining Company Limited, for research in mineralography, was awarded in the session 1939-40. The terms of award were as follows: This scholarship will be awarded to a graduate in Geological, Mining or Metallurgical Engineering in the Faculty of Applied Science. A portion of the scholarship not to exceed \$20 may be used for special equipment for the research problem. The topic of research shall be chosen after consultation with the Geology Department of the University of British Columbia and the Cariboo Gold Quartz Mining Company Limited. Applications should be in the hands

*See Paragraph 1, Page 43.

of the Registrar by December 10th. Recipients must be qualified to undertake the research work not only in respect of scholarship and research ability but also in personality and health.

SCHOLARSHIPS FOR UNDERGRADUATES

1. IN ALL FACULTIES

University Great War Scholarships*

Two scholarships of \$175 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 \$175 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 81.) 2. To the student standing highest with majors in group (2). (See Page 81.) Students taking full honours in Mathematics will be classified in group (1).

Two scholarships in Arts and Science of \$175 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 43.

†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 \$175* 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 \$175* 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.

*Students winning general proficiency scholarships in the First Year of Arts and Science and proceeding to the Second Year of Applied Science will be given scholarships of a value of \$225.00.

The John and Annie Southcott Memorial Scholarship*

As on Page 47.

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 \$175 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 43.

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 \$225 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 \$225 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 \$175 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.

UNIVERSITY ENTRANCE AND SENIOR MATRICULATION SCHOLARSHIPS

University and Royal Institution Scholarships for University Entrance

Fifteen General Proficiency scholarships will be awarded on the result of the University Entrance examinations: (a) \$175 to the candidate of highest standing in the Province, and (b) \$175 each to the two candidates 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.

University and Royal Institution Scholarships for Senior Matriculation

Six General Proficiency scholarships will be awarded on the result of the Senior Matriculation examinations: (a) \$175 to the candidate of highest standing in the Province, (b) \$175 to the candidate of next highest standing in the Province, (c) \$175 to the candidate of next highest standing 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, and (d) \$175 each to the three candidates of next highest standing in Districts (2) Vancouver Island (exclusive of Victoria District), and Northern Mainland (exclusive of North Vancouver and West Vancouver), (5) The Fraser Valley, (6) Yale, and (7) Kootenays.

*See Paragraph 1, Page 43.

These scholarships will be paid only to students in attendance at the University of British Columbia, with the exception that the Victoria District University Entrance Scholarships will be paid to any winners of those scholarships in attendance at Victoria College.

Winners of all University Entrance and Senior 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 University Entrance Scholarships) during the following session; failing such notification, the winner's rights will lapse.

Postponement of University Entrance and Senior 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

*See Paragraph 1, Page 43.

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 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.

Frances Willard Prize*

A prize of \$50, given by the Woman's Christian Temperance Union of British Columbia, will be awarded to Senior or to Graduate students for an essay in the field of Economics, History, Psychology or Sociology, on a subject to be approved by the Department concerned in consultation with a committee of the Woman's Christian Temperance Union.

The award will be made for the Session 1940-41 on recommendation of the Head of the Department of Philosophy and Psychology, essays to be submitted by April 11, 1941.

If in any year no student reaches the required standard the award will be withheld.

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.

Engineering Institute of Canada—Vancouver Branch—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

*See Paragraph 1, Page 43.

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 Association of Professional Engineers of the Province for competition by those students in the Fourth Year of the Faculty of Applied Science who are enrolled as Engineering Pupils in the Profession.

These prizes are awarded for the best summer essay in each of any five branches of engineering to be selected by the Faculty.

The successful essays may be made available by the Faculty to the Council and members of the Engineering 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.

The British Columbia Lumber and Shingle Manufacturers' Association Prize*

A prize of the value of \$25, given by the British Columbia Lumber and Shingle Manufacturers' Association, will be awarded to the student enrolled in the course, Structural Design 1 (C.E. 9), submitting the design judged to be the best, of a wooden roof truss. The award will be made upon the recommendation of the Dean of the Faculty of Applied Science in collaboration with the Instructor in charge of the course and the donor. Applications should be forwarded to the Registrar not later than January 19th, 1941.

*See Paragraph 1, Page 43.

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 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.

*See Paragraph 1, Page 43.

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 1940-41 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.

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 (Vancouver P.E.O. Sisterhood)*

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 1940-41 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

*See Paragraph 1, Page 43.

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 Bursary*

A bursary of the value of \$50, given by the Lady Laurier Club of Vancouver, will be awarded to a woman student in the Teacher Training Course, or to a woman student in Third or Fourth Year Arts and Science in the event of there not being an applicant in the Teacher Training Course who can qualify; such student should 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 Committee 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

*See Paragraph 1, Page 43.

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.
- *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 1940-41 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

*See Paragraph 1, Page 43.

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.

The Roy Graham Memorial Loan Fund

In memory of Roy Graham, M.A.Sc. (Brit. Col.), Ph.D. (Chicago), a loan fund has been established to assist students in the Faculty of Applied Science. Preference will be given to students in the Second and Third Years of that Faculty. All applicants for loans must be recommended by the Dean of the Faculty of Applied Science. This fund is distributed on the recommendation of the Joint Faculty Committee on Prizes and Scholarships.

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 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.

*See Paragraph 1, Page 43.

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, kindliness, 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."

Except in special cases, all Scholarships (to which elections are made in war-time) will, until further notice, be suspended until after the war. Should any Scholar-elect wish to make a special application to be allowed to come to Oxford during the war, he should apply to the Rhodes Trustees, through the General Secretary of the Rhodes Scholarships in the country in which he is elected. Each application will be considered on its merits, and the Rhodes Trustees reserve complete discretion in deciding each case, but, as

general indications of the policy which the Trustees are likely to adopt, the following points may be noted:

1. In the absence of exceptional considerations, such as those mentioned under (5), permission will not be given to come to Oxford in order to take Final Honour Schools or Special (War) Courses in non-scientific subjects, such as Literae Humaniores, Law, Modern Greats or History, or to undertake research in these subjects.
2. The same applies to Final Honour Schools, or Special (War) Courses, in the ordinary scientific or mathematical subjects, but application to engage in special and approved scientific research will be more favourably considered.
3. Medical students and researchers will normally be given permission to take up their Scholarships, subject, however, to the advice of the authorities of Oxford Medical School upon the advisability of Overseas students entering upon medical courses in England, and subject, further, in the case of researchers, to the facilities which may exist at Oxford for research in the particular investigation proposed by the applicant.
4. Permission will in no case be granted if the policy of the Government of the Scholar's country of origin opposes his leaving his country. If, for example, conscription or compulsory military training has been introduced in that country, permission will be granted only as explained under (5).
5. The Trustees will be prepared to take into consideration special personal circumstances, e.g., disqualification for military or other war service, disablement through war service, or the urgency or importance of the work which the Scholar proposes to take up at Oxford.

The Trustees hope when peace is restored to revive all suspended Scholarships, but cannot definitely bind themselves to do so until the time has arrived and the practical possibilities are known. The Trustees reserve the right to cancel any suspended Scholarship if circumstances shall have supervened which, in their opinion, make it undesirable that the Scholar should hold his Scholarship.

Should a Scholar-elect, whose Scholarship has been suspended, marry before he applies to take up his Scholarship, although the Trustees will not consider the Scholarship as automatically forfeited, they will not be prepared to confirm it except in special circumstances.

Suspended Scholarships, if revived, will be tenable for the normal period. Applications will be entertained from Scholars who wish to spend a shorter time at Oxford, although no tenure

of less than one year will be permitted, save in exceptional circumstances.

The Selection for any year is normally made in the previous December, and each candidate 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 or Assistant Secretary of the Selection Committee.

As the regulations are subject to change, prospective candidates are advised to obtain full information from W. Thomas Brown, Esq., 470 Granville Street, Vancouver, B. C., Secretary of the Selection Committee for British Columbia, or from the Assistant Secretary, Arthur J. Johnson, Esq., c/o Foreign Exchange Control Board, 330 West Pender St., Vancouver, B. C.

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 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. It is not the intention of the Commissioners to

*See Paragraph 1, Page 43.

invite recommendations for their Overseas Research Awards during the continuance of hostilities.

**Imperial Order Daughters of the Empire War
Memorial Scholarship (Overseas)***

This fund was established by the I.O.D.E. in order to perpetuate the memory of the men and women who gave their lives in the defence of the Empire in the Great War. Nine post-graduate scholarships to the value of \$1400 each are offered annually—one in each province of the Dominion. The conditions under which they are awarded may be obtained from the Registrar. Applications must be submitted by October 15th of each year.

1940-41

*See Paragraph 1, Page 43.

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 237	Chemistry 18.....	.....	Biology 2 b, Lab.....	.....
	Botany 6 e.....	Ap 233	Commerce 4.....	A 204	Biology 3.....	Ap 237	
	Chemistry 10.....	.....	English 1, Sec. 3.....	A 100, 106, 205, 206	Botany 6 e.....	Ap 233
	Chemistry 12.....	.....	English 21 a.....	A 108	Chemistry 10.....	.....
	Economics 6.....	A 205	French 2, Sec. 2.....	A 101, 104, 105	Chemistry 12.....	.....
	Education 9.....	Ag 100	German 1, Sec. 1.....	A 203	Economics 6.....	A 205	
	English 1, Sec. 1.....	A 103, 106, 206, 208	German 3 c.....	A 201	Education 9.....	Ag 100	
	English 13.....	A 100	Latin 2 a.....	A 207	English 1, Sec. 1.....	A 103, 106, 206, 208	
	French 2, Sec. 1.....	A 104, 105, 108	Latin 5.....	A 102	English 13.....	A 100	
	Geology 4.....	Ap 102	Physics A.....	S 200	French 2, Sec. 1.....	A104,105 108	
	Geology 23.....	Ap 106	Zoology 2.....	Ap 101	Geology 4.....	Ap 102	
	Latin 1, Sec. 1.....	A 102	Zoology 3.....	Ap 101	Latin 1, Sec. 1.....	A 102	
	Latin 7.....	A 207			Latin 7.....	A 207	
	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.....	Ap 100	
					Social Service 12.....	A 201	
	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	
Commerce 6.....		A 108	Botany 6 c.....	Ap 101	Chemistry 3.....	S 300	
Economics 1, Sec. 1.....		S 400	Chemistry 9.....	S 413	Commerce 6.....	A 108	
Education 12.....		A 204	Economics 1, Sec. 3.....	A 204	Economics 1, Sec. 1.....	S 400	
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, Secs. 2 & 3.....	A 203, A 208	Geography 3.....	Ap 102	
German 3 a.....		A 203	Government 1.....	A 108	Geology 1 a & c.....	Ap 100	
History 17.....		A 203	History 2.....	A 103	Geology 7.....	Ap 106	
Mathematics 1, Sec. 1.....		A 106, 205, 206 Ag 100	History 15.....	A 206	German 3 a.....	A 203	
Mathematics 13.....		A 102	Latin 2 b.....	A 102	History 17.....	A 203	
Mathematics 16.....		A 101	Mathematics 1, Sec. 2.....	A 100, 106, 205	Mathematics 1, Sec. 1.....	A 106, 205, 206 Ag 100	
Philosophy 9.....		A 103	Mathematics 12.....	A 101	Mathematics 13.....	A 102	
Physics 1, Sec. 2.....		S 200	Mathematics 14.....	A 207	Mathematics 16.....	A 101	
Physics 4.....		S 210	Social Service 4 & 8.....	A 201	Philosophy 9.....	A 103	
Sociology 4.....		A 207			Physics 1, Sec. 2.....	S 200	
Zoology 9.....		Ap 101			Physics 4.....	S 210	
				Sociology 4.....	A 207		
				Zoology 9.....	Ap 101		

CONSULT DEPARTMENT HEADS FOR

--- 1940 - 1941

AND SCIENCE

iculture; Ap, Applied Science; S, Science.

Mornings

Thursday	Room	Friday	Room	Saturday	Room	
Chemistry 18.....		Biology 2 a & b, Labs.		Chemistry 5 Lab., Sec. b.....		
Commerce 4.....	A 204	Economics 6.....	A 205	Commerce 4.....	A 204	
English 1, Sec. 8.....	A 100, 106, 205, 206	Education 9.....	Ag 100	Education 14.....	Ag 100	
English 21 a.....	A 108	English 1, Sec. 1.....	A 103, 106, 206 208	English 1, Sec. 8.....	A 100, 106, 205, 206	
French 2, Sec. 2.....	A 101, 104, 105	English 18.....	A 100	French 2, Sec. 2.....	A 101, 104, 105	
German 1, Sec. 1.....	A 203	French 2, Sec. 1.....	A 104, 105, 108	German 1, Sec. 1.....	A 203	
German 8 c.....	A 201	Geology 4.....	Ap 102	German 8 c.....	A 201	
Latin 2 a.....	A 207	Latin 1, Sec. 1.....	A 102	Latin 2 a.....	A 207	8.30
Latin 5.....	A 102	Latin 7.....	A 207	Latin 5.....	A 102	
Physics A.....	S 200	Mathematics 10.....	A 204	Physics A.....	S 200	
Social Service 2.....	Ap 214	Physics 1, Sec. 1.....	S 200			
Zoology 2.....	Ap 101	Psychology A.....	Ap 100			
Zoology 8.....	Ap 101					
Bacteriology 1, Lab. Sec. 1.....		Biology 2 a & b, Labs.		Botany 5 b Lab.....		
Biology 2 d.....		Botany 5 b.....		Chemistry 5 Lab., Sec. b.....		
Botany 8 a.....	Ap 101	Chemistry 2.....	S 300	Economics 1, Sec. 8...	A 204	
Botany 6 c.....	Ap 101	Commerce 6.....	A 108	Economics 4.....	Ap 204	
Chemistry 9.....	S 413	Economics 1, Sec. 1...	S 400	Education 14.....	Ag 100	
Economics 1, Sec. 8...	A 204	Education 12.....	A 204	English 10.....	A 105	
Economics 4.....	Ap 204	English 9.....	A 100	French 4 a.....	A 104	
English 10.....	A 105	French 8 b.....	A 104	German 1, Secs. 2 & 3.....	A 203, A 208	
French 4 a.....	A 104	French 4 b.....	A 105	Government 1.....	A 108	
Geology 2 a & b.....	Ap 102	Geography 8.....	Ap 102	History 2.....	A 103	9.30
German 1, Secs. 2 & 3.	A 203, A 208	Geology 7.....	Ap 106	History 15.....	A 206	
Government 1.....	A 108	German 8 a.....	A 208	Latin 2 b.....	A 102	
History 2.....	A 103	History 17.....	A 203	Mathematics 1, Sec. 2.....	A 100, 106, 205	
History 15.....	A 206	Mathematics 1, Sec. 1.....	A 106, 205, 206, Ag 100	Mathematics 14.....	A 207	
Latin 2 b.....	A 102	Mathematics 13.....	A 102			
Mathematics 1, Sec. 2.....	A 100, 106, 205	Philosophy 9.....	A 103			
Mathematics 12.....	A 101	Physics 1, Sec. 2.....	S 200			
Mathematics 14.....	A 207	Physics 4.....	S 210			
Social Service 4 & 8...	A 201	Sociology 4.....	A 207			

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. 1.....		Agricultural Economics 1.....	Ag 100	
	Biology 1, Sec. B.....	Ap 100	Botany 1 a.....	Ap 101	Bacteriology 9 & 10.....	Ap 100	
	Biology 1, Sec. C.....	Ap 101	Chemistry 1, Sec. 3.....	S 300	Biology 1, Sec. B.....	Ap 100	
	Botany 6 d.....		Chemistry 4.....	S 400	Biology 1, Sec. C.....	Ap 101	
	Chemistry 1, Sec. 1.....	S 300	Economics 10 (Com. 5).....	A 100	Botany 6 d.....		
	Chemistry 7.....	S 413	English 19.....	A 206	Chemistry 1, Sec. 1.....	S 300	
	Economics 1, Sec. 2.....	S 400	French 1, Sec. 2.....	A 104, 105	Chemistry 7.....	S 413	
	Economics 12.....	Ap 204	French 3 a.....	A 104, 105	Economics 1, Sec. 2.....	S 400	
	English 18.....	A 201	Geology 6.....	Ap 102	Economics 13.....	Ap 204	
	French 1, Sec. 1.....	A104,105, 108	Government 2.....	A 201	English 18.....	A 201	
	French 3 c.....	A 206	History 13.....	A 207	French 1, Sec. 1.....	A 104, 105, 108	
	Geology 8.....	Ap 102	Latin 1, Sec. 2.....	A 102	French 3 c.....	A 206	
	German, Beg., Secs. 1 & 2.....	A205,207	Mathematics 2 a, Sec. 2.....	A 204	Geology 8.....	Ap 102	
	Government 5.....	A 208	Philosophy 3.....	A 205	German, Beg., Secs. 1 & 2.....	A205,207	
	History 4.....	A 103	Social Service 1.....	A 101	Government 5.....	A 208	
	History 11.....	A 203			History 4.....	A 103	
	History 19.....	A 101			History 11.....	A 203	
	Mathematics 2 a, Sec. 1.....	A 204			History 19.....	A 101	
	Physics 5.....	S 210			Mathematics 2 a, Sec. 1.....	A 204	
	Psychology 9.....	A 102			Physics 5.....	S 210	
	Zoology 1.....	Ap 202			Psychology 9.....	A 102	
	Zoology 4.....				Zoology 1.....	Ap 202	
	Zoology 7.....				Zoology 4.....		
					Zoology 7.....		
	11.30	Agricultural Economics 2.....	Ag 100	Bacteriology 1, Lab. Sec. 1.....		Agricultural Economics 2.....	Ag 100
		Biology 4.....	Ap 101	Botany 1 b.....	Ap 101	Biology 4.....	Ap 101
Botany 7 a.....			Economics 2.....	A 100	Economics 7 (Com. 9).....	A 106	
Economics 7 (Com. 9).....		A 106	Economics 9.....	A 201	English 1, Sec. 2.....	A 206	
English 1, Sec. 2.....		A 206	Geography 2.....	Ap 102	German, Beg., Sec. 3.....	A 205	
German, Beg., Sec. 3.....		A 205	German, Beg., Secs. 2, 4, 5.....	A203,205, 207	German 1, Sec. 1.....	A 104	
German 2, Sec. A.....		A 105	Mathematics 1, Sec. 3.....	A 204	German 2, Sec. A.....	A 105	
Greek 4.....		A 102	Philosophy 6.....	A 206	Greek 4.....	A 102	
History 10.....		A 208	Social Service 3.....	A 104	History 10.....	A 208	
History 20.....		A 208			History 20.....	A 208	
Mathematics 3.....		A 204			Mathematics 3.....	A 204	
Philosophy 5.....		A 108			Philosophy 5.....	A 108	
Physics 2.....		S 200			Physics 2.....	S 200	
Psychology 1.....		A 100			Psychology 1.....	A 100	
Psychology 5.....		A 207			Psychology 5.....	A 207	

CONSULT DEPARTMENT HEADS FOR

—Continued

Mornings

Thursday	Room	Friday	Room	Saturday	Room
Bacteriology 1, Lab. Sec. 1.....		Agricultural Economics 1.....	Ag 100	Botany 5 b Lab.....	
Botany 1 a.....	Ap 101	Botany 6 b.....		Chemistry 1, Sec. 3..	S 800
Chemistry 1, Sec. 3....	S 300	Chemistry 1, Sec. 1..	S 300	Chemistry 5 Lab., Sec. b.....	
Chemistry 4.....	S 400	Economics 1, Sec. 2	S 400	Commerce 2.....	Ap 102
Economics 10 (Com. 5).....	A 100	Economics 13.....	Ap 204	Economics 10 (Com. 5).....	A 100
English 19.....	A 206	English 18.....	A 201	English 19.....	A 206
French 1, Sec. 2.....	A104,105 Ag 100	French 1, Sec. 1.....	A 104, 105, 108	French 1, Sec. 2.....	A 104, A 105, Ag 100
French 3 a.....	A106,208	French 3 c.....	A 206	French 3 a.....	A106,208
Geology 6.....	Ap 102	Geology 8.....	Ap 102	Government 2.....	A 201
Government 2.....	A 201	German, Beg., Secs. 1 & 2.....	A205,207	History 13.....	A 207
History 13.....	A 207	Government 5.....	A 208	Latin 1, Sec. 2.....	A 102
Latin 1, Sec. 2.....	A 102	History 4.....	A 103	Mathematics 2 b, Sec. 2.....	A 204
Mathematics 2 a, Sec. 2.....	A 204	History 11.....	A 203	Philosophy 3.....	A 205
Philosophy 3.....	A 205	History 19.....	A 101		
Social Service 1.....	A 101	Mathematics 2 b, Sec. 1.....	A 204		
		Physics 5.....	S 210		
		Psychology 9.....	A 102		
		Social Service 7.....	Ap 237		
		Zoology 5.....	Ap 101		
		Zoology 6.....	Ap 101		
Botany 1 b.....	Ap 101	Agricultural Economics 2.....	Ag 100	Botany 5 b Lab.....	
Economics 2.....	A 100	Botany 7 a.....		Economics 2.....	A 100
Economics 9.....	A 201	Economics 7 (Com. 9).....	A 106	Economics 9.....	A 201
Geography 2.....	Ap 102	English 1, Sec. 2.....	A 206	German 2, Sci. Rdg.....	A 105
German Beg., Secs. 1, 3.....	A 205 A 207	German, Beg., Sec. 3	A 205	Mathematics 1, Sec. 3.....	A 204
Mathematics 1, Sec. 3.....	A 204	German 2, Sec. A.....	A 105		
Philosophy 6.....	A 206	Greek 4.....	A 102		
Social Service 9 and 10.....	A 104	History 10.....	A 208		
		History 20.....	A 203		
		Mathematics 3.....	A 204		
		Philosophy 5.....	A 103		
		Physics 2.....	S 200		
		Psychology 1.....	A 100		
		Psychology 5.....	A 207		
		Social Service 11 and 13.....	A 101		

10.30

11.30

SUBJECTS NOT IN THIS TIME TABLE

TIME TABLE

Afternoons

	Monday	Room	Tuesday	Room	Wednesday	Room	
1.30	Bacteriology 5.....	.....	Bacteriology 1 Lab., Sec. 2.....	.....	Bacteriology 9 & 10, Labs.....	.....
	Botany 3 a Lab.....	.....	Biology 1 Lab., Sec. 1.....	.....	Botany 3 a Lab.....	.....
	Botany 4 Lab.....	.....	Botany 6 c Lab.....	.....	Botany 4 Lab.....	.....
	Botany 5 a & c Lab.....	.....	Botany 6 e Lab.....	.....	Botany 5 c Lab.....	.....
	Chemistry 1, Sec. 2.....	S 800	Chemistry 4 a Lab., Sec. a.....	.....	Botany 6 b Lab.....	.....
	Chemistry 5.....	.....	Chemistry 9 Lab.....	.....	Chemistry 1, Sec. 2.....	S 800
	Chemistry 7 Lab.....	.....	Commerce 1.....	A 103	Economics 12 Lab., Sec. B.....	.....
	Economics 12 Lab., Sec. A.....	.....	Economics 13 Lab.....	A 105	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	
	German 1, Sec. 2.....	A 203	Physics 4 Lab., Sec. 1.....	.....	Latin 3.....	A 207
	Latin 3.....	A 207	Psychology 2.....	.....	Philosophy 7.....	.....
	Philosophy 7.....	.....	Zoology 2 Lab.....	.....	Philosophy 8.....	A 201
	Philosophy 8.....	A 201	Zoology 3 Lab.....	.....	Zoology 5 Lab.....	.....
	Zoology 5.....	.....	Zoology 4 Lab.....	.....	Zoology 6 Lab.....	.....
	Zoology 6.....	.....	Zoology 7 Lab.....	.....		
	2.30	Bacteriology 3.....	Bacteriology 1 Lab., Sec. 2.....	Bacteriology 9 & 10, Labs.....
		Bacteriology 5 Lab.....	Biology 1 Lab., Sec. 1.....	Botany 3 a Lab.....
Botany 3 a Lab.....		.....	Botany 6 c 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 b Lab.....	.....
Chemistry 7 Lab.....		.....	Chemistry 5 Lab., Sec. a.....	.....	Economics 12 Lab., Sec. B.....	.....
Commerce 2.....		Ap 120	Chemistry 9 Lab.....	.....	English 16.....	A 106
Economics 12 Lab., Sec. A.....		A 204	Economics 13 Lab.....	.....	French 2, Sec. 3.....	A104,105,
Education 10.....		A 106	Education 10.....	A 204	Geology 7 Lab.....	Ap 106	
English 16.....		A 106	English 1, Sec. 3.....	A 100, 106, 205, 206	Geography 1.....	Ap 102	
French 2, Sec. 3.....		A 104 A 105	Geology 1 b & d Lab. Sec. 1.....	Ap 120	German, Beg., Sec. 5.....	A 205	
Geography 1.....		Ap 102	Geology 7 Lab.....	Ap 106	German 2, Sec. B.....	A 206	
German, Beg., Sec. 5.....		A 205	Latin 8, Sec. b.....	A 102	History 1.....	A 100	
German 2, Sec. B.....		A 206	Physics 4 Lab., Sec. 1.....	.....	History 14.....	A 101
History 1.....		A 100	Psychology 2 Lab.....	.....	Philosophy 1.....	S 210
History 14.....		A 101	Zoology 2 Lab.....	.....	Sociology 1.....	A 103
Philosophy 1.....		S 210	Zoology 3 Lab.....	.....	Zoology 5 Lab.....	.....
Physics 5 Lab., Sec. 1.....		.....	Zoology 4 Lab.....	.....	Zoology 6 Lab.....	.....
Sociology 1.....		A 103	Zoology 7 Lab.....	.....		
Zoology 5 Lab.....		.....				
Zoology 6 Lab.....	.....					

CONSULT DEPARTMENT HEADS FOR

—Continued

Afternoons

Thursday	Room	Friday	Room			
Bacteriology 1 Lab., Sec. 2.....		Biology 1, Lab., Sec. 5.....				
Biology 1 Lab., Sec. 3.....		Botany 6 d Lab.....				
Botany 6 c & e Lab.....		Chemistry 1, Sec. 2.....	S 300			
Chemistry 3 Lab., Sec. b.....		Chemistry 3 Lab., Sec. a.....				
Commerce 1 Lab.....		Chemistry 4a Lab., Sec. b.....				
Economics 13 Lab.....		Chemistry 5 Lab., Sec. b.....				
Geology 1 b & d Lab., Sec. 2.....	Ap 120	Education 14.....	A 103			
Geology 9.....	Ap 112	English 2.....	A 100, Ap 100			1.30
Mathematics 1, Secs. 2 & 3.....	A100,103 106, 205	French 1, Sec. 3.....	A 104, 105, 204			
Physics 4 Lab., Sec. 2.....		Geology 2 Lab.....				
Psychology 2.....		German, Beg., Sec. 4.....	A 205			
Zoology 1 Lab., Sec. a.....		Latin 3.....	A 207			
		Philosophy 7.....				
		Philosophy 8.....	A 201			
		Zoology 9 Lab.....				
Bacteriology 1 Lab., Sec. 2.....		Biology 1 Lab., Sec. 5.....				
Biology 1 Lab., Sec. 3.....		Biology 3 Lab.....				
Botany 6 c & e Lab.....		Botany 6 d Lab.....				
Chemistry 3 Lab., Sec. b.....		Chemistry 3 Lab., Sec. a.....				
Chemistry 5 Lab., Sec. a.....		Chemistry 4 a Lab., Sec. b.....				
Commerce 1 Lab.....		Chemistry 5 Lab., Sec. b.....				
Economics 13 Lab.....		Education 10.....	A 204			
English 1, Secs. 1 & 2.....	A100,103, 106, 203, 206	English 16.....	A 106			
Geology 1 b & d, Lab., Sec. 2.....	Ap 120	French 2, Sec. 3.....	A 104 A 105			2.30
Geology 9.....	Ap 112	Geography 1.....	Ap 102			
Latin 8, Sec. a.....	A 102	Geology 2 Lab.....				
Physics 4 Lab., Sec. 2.....		Geology 8.....	Ap 120			
Zoology 1 Lab., Sec. a.....		German Beg., Sec. 5.....	A 205			
		German 2, Sec. B.....	A 206			
		History 1.....	A 100			
		History 14.....	A 101			
		Philosophy 1.....	S 210			
		Physics 5 Lab., Sec. 2.....				
		Sociology 1.....	A 103			
		Zoology 9 Lab.....				

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..... Botany 7 a Lab..... Chemistry 1 Lab., Sec. a..... Chemistry 7 Lab..... Commerce 2..... French 3 c..... Geology 5..... Physics 5 Lab., Sec. 1..... Psychology 6..... Zoology 5 Lab..... Zoology 6 Lab.....	Ap 120 A 208 Ap 102 A 104	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..... Physics 4 Lab., Sec. 1..... Psychology 2 Lab..... Zoology 2 Lab..... Zoology 3 Lab..... Zoology 4 Lab..... Zoology 7 Lab.....	Ap 120	Bacteriology 9 & 10, Labs..... Botany 4 Lab..... Psychology 6.....	A 104
4.30	Bacteriology 3 & 5, Labs..... Botany 1 a Lab..... Botany 7 a Lab..... Chemistry 1 Lab., Sec. a..... Chemistry 7 Lab..... 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..... Zoology 2 Lab..... Zoology 3 Lab..... Zoology 4 Lab..... Zoology 7 Lab.....	Ap 120	Bacteriology 9 & 10, Labs..... Chemistry 2 Lab.....	
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. Biology 1 Lab., Sec. 4 Biology 4 Lab. Botany 1 b Lab. Chemistry 1 Lab., Sec. c Chemistry 2 Lab. Chemistry 3 Lab., Sec. b Chemistry 5 Lab., Sec. a Physics 4 Lab., Sec. 2 Zoology 1 Lab., Sec. b		Bacteriology 3 Lab. Biology 1 Lab., Sec. 6 Biology 3 Lab. Botany 6 d Lab. Chemistry 1 Lab., Sec. d Chemistry 3 Lab., Sec. a Chemistry 4a Lab., Sec. b Chemistry 5 Lab., Sec. b English 24 Physics 5 Lab., Sec. 2 Psychology 6 Zoology 9 Lab.	A 103 A 104			3.30
Bacteriology 2, Lab. Biology 1 Lab., Sec. 4 Biology 4 Lab. Botany 1 b Lab. Chemistry 1 Lab., Sec. c Chemistry 2 Lab. Chemistry 3 Lab., Sec. b Chemistry 5 Lab., Sec. a Zoology 1 Lab., Sec. b		Bacteriology 3 Lab. Biology 1 Lab., Sec. 6 Biology 3 Lab. Botany 6 d Lab. Chemistry 1 Lab., Sec. d Chemistry 2 Lab. Chemistry 3 Lab., Sec. a Chemistry 4a Lab., Sec. b English 24 Physics 5 Lab., Sec. 2 Zoology 9 Lab.	A 103			4.30
Chemistry 1 Lab., Sec. c Chemistry 2 Lab. Chemistry 3 Lab., Sec. b		Chemistry 1 Lab., Sec. d Chemistry 3 Lab., Sec. a				5.30

SUBJECTS NOT IN THIS TIME TABLE

1940-41

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 Work.

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 the section *Double Courses* at the end of the Calendar.

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 University Entrance.

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 University Entrance, 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 Psychology A or 1, or Philosophy 1.....	3
(e) Biology 1, or Botany 1 (b), or Chemistry A, or Chemistry 1, or Geology 1, or Physics A, or Physics 1, or Physics 2.....	3
(f) Three courses—not already chosen—selected from the following:	
Bacteriology 1, Biology 1, Botany 1 (a), Botany 1 (b), Chemistry A, Chemistry 1, Chemistry 2, Chemistry 4, Economics 1, Economics 2, Commerce 5 (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, 1935-1936)**, 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, Philosophy 1, Physics A, Physics 1, Physics 2, Physics 4, Psychology A, Psychology 1, Zoology 1.....	9

NOTE. Bacteriology 1, Botany 1 (a), Zoology 1, Geology 1 and 2, Geography 1, Economics 1, Commerce 5 (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 34.

†See Regulation "2".

‡See Regulations "3" and "4".

**These courses are offered only by Victoria College.

Botany 1 (*b*) 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*) and Civil Engineering 2 are required.

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

2. Students who have not presented German or Greek or Latin for University Entrance may fulfil the language requirements for the degree by taking Beginners' German or Beginners' Greek or Beginners' Latin, to be followed respectively 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.

Students who have completed German III of the high school course of study, or its equivalent, may fulfil the language requirements by taking German 2 for the First Year and German 3 (*a*) for the Second 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 for entrance to the University. A beginners' course in a language may not be taken for credit by a student who has obtained credit for that language at entrance.

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 Faculty of 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.

A. 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 and Geography, Mathematics, Physics, Psychology, Zoology.

(2) Economics, Education (not more than six units and only for those who have completed their Normal Training), English, French, Geography, German, Government, Greek, History, Latin, Mathematics, Philosophy, Psychology, Sociology, 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, English, French, Geography, German, Greek, History, Latin, Mathematics, Physics.

Work in the First or Second Year is required in each of the major subjects, except in Education, Government, Sociology, 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: Botany 1 (*a*) or Zoology 1 (if both are taken), Chemistry 4†, Geography 1, Geology 1, Geology 2, German 2 if preceded by Beginners' German and

*Those who intend to enter the Teacher Training Course should consult section 8, page 101.

†See prerequisite for Chemistry 4.

German 1, Greek 2 if preceded by Beginners' Greek and Greek 1, Latin 2 if preceded by Beginners' Latin and Latin 1, Mathematics 4, and Philosophy 1; also the subjects under 1 (d) or 1 (e) postponed to the Third or Fourth Year, as provided for under paragraph 5, page 80.

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.

B. 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.

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 Second 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 1940-41. 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, 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 (a).

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).

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

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 (Forestry Option)

Prerequisites: First Year, Biology 1; Second Year, Botany 1 (*a*), 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: Botany 1 (*c*) and Civil Engineering 5, in the Third Year; Forestry 16, 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*).

Biology (Zoology Option)

Prerequisites: Biology 1, Chemistry 1, Zoology 1.

Physics 1 or 2*, Botany 1 (*a*), and Chemistry 2 and 3 are required 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.

Chemistry

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

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

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

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

Prerequisite: 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 Economics 4, 9, and 12, and two from the following group:

Economics 3, 5, 6, 7, 11, 13, 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

Prerequisite: 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, Economics 12, and three from the following group:

Sociology 1 and 2, Government 2, 3, 4, Economics 3, 4, 5, 6, 7, 9, 13.

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.

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.

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.

Latin

Course: Latin 3, 4, 5, 6, 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.

Philosophy

Prerequisites: Philosophy 1, Psychology 1.

Course: Psychology 2, and 15 units chosen from Philosophy 2, 3, 4, 5, 6, 7, 8, 9, 10.

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.

Psychology

Prerequisites: Psychology 1, Philosophy 1, Biology 1, Mathematics 2, Physics A or 1.

Course: Philosophy 8, and 15 units chosen from Psychology 2, 3, 4, 5, 6, 7, 8, 9.

COMBINED HONOURS COURSES

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

Prerequisites: Chemistry 1 and 2, Biology 1, Botany 1 (a) or Zoology 1.

Course: Bacteriology 1, 2, 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, 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, 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, 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, 16; Physics 4, 5, 8, and six additional units.

(h) Philosophy and Psychology

Prerequisites: Philosophy 1, Psychology 1.

Course: Twelve units chosen from Philosophy 2, 3, 4, 5, 6, 7, 8, 9, 10; twelve units chosen from Psychology 2, 3, 4, 5, 6, 7, 8, 9.

(i) Any Two of

Economics or Economics and Political Science, English, French, German, History, Latin, Philosophy, Psychology. The requirements in each of these subjects in such combinations are as follows.

Economics or Economics and Political Science

Prerequisite: 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, 9, 12, 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

Prerequisite: 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. (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

Prerequisites: Philosophy 1, Psychology 1.

Course: Twelve units chosen from Philosophy 2, 3, 4, 5, 6, 7, 8, 9, 10.

Psychology

Prerequisites: Psychology 1, Philosophy 1.

Course: Twelve units chosen from Psychology 2, 3, 4, 5, 6, 7, 8, 9.

COURSE LEADING TO THE DEGREE OF B.Com.

The degree of B.Com. will be granted on completion of courses amounting to 60 units chosen in conformity with Calendar regulations.

Honours standing will be accorded those students who obtain an average standing of 80 per cent. in the Fourth Year and 75 per cent. in the Third Year, and who do not fail in any subject taken in the Third and Fourth Years.

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 of both degrees. While the B.A. degree may be completed in one year by students holding the B.Com. degree, the converse may not be true, because prerequisites in some of the Commerce courses involve two years of consecutive work.

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.

Before graduation each student must submit to the Department a major report indicating his ability to carry out on his own initiative a constructive piece of work of an industrial or commercial character. If possible this report should be associated with the student's summer employment. Every student is advised to obtain as much business experience as possible during the summer vacations.

As the student progresses in his course he will be expected to do an increasing amount of field work in the business community available to him. In this way he will learn to work on his own initiative and will acquire a first hand knowledge of business practice.

Periodic written reports are an important part of the different courses, and students are warned that demands upon their time will be sustained throughout the course.

First Year

The following courses comprising 15 units:

English 1.

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

Mathematics 1.

Elective, 3 units, preferably Economics 2.

One course selected from the following: Biology 1, Chemistry A or 1, Physics A or 1. Students proceeding to the combined degrees of B.Com. and B.S.F. will substitute Commerce 5 for a science course.*

Second Year

The following courses comprising 15 units:

English 2.

Mathematics 2 or 3, or an additional course in the language

*For the regulations governing the degree of B.S.F. in the combined courses of Commerce and Forestry, consult the section *Double Courses* at the end of the Calendar.

taken in the First Year. Students who contemplate taking advanced work in Statistics should take Mathematics 2 or 3.

Economics 1.

Commerce 5. Botany 1 (*b*) and Civil Engineering 2 will be substituted for Commerce 5 by those students who are proceeding to the combined degrees of B.Com. and B.S.F.*

Elective, 3 units, preferably Commerce 1.

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 107 of the Calendar, will be rigidly enforced at the end of the Second Year, and reasonable legibility in handwriting will be insisted upon.

Third Year

The following courses comprising 15 units:

An additional course in a language already taken for credit in the first two years, that is, Latin, French, German, or Greek (to be taken in the Third Year) *or* an additional course in English.

Economics 4.

Economics 12, or a third course in the language elected in the Second Year.

Commerce 6.

Commerce 1, if not already taken; otherwise one course to be selected from the elective list in consultation with the Department.

Fourth Year

The following courses comprising 15 units:

Economics 6.

Commerce 4.

Commerce 9.

Two courses, not already chosen, to be selected from the elective list in consultation with the Department.

The major report required for graduation must be submitted on a date specified by the instructor and entails regular attendance in a seminar discussion group held for one hour each week.

Students in the Fourth Year should not under any circumstances plan to carry more than the prescribed fifteen units of work. If for any reason they do not enter the Fourth Year with a complete Third Year they must expect to attend an extra year in order to satisfy the requirements of graduation.

*For the regulations governing the degree of B.S.F. in the combined courses of Commerce and Forestry, consult the section *Double Courses* at the end of the Calendar.

Electives for Third and Fourth Years:

Commerce 11.

Commerce 2.

Commerce 3.

Commerce 13.

Economics 13.

Economics 11.

Economics 5.

Government 1.

Government 4.

Mathematics 2, 3.

Additional course in Latin, French, German, or Greek.

*Botany 1 (*c*) and Civil Engineering 5.

Psychology 1, 7.

*Forestry 16 (Forest Economics 1).

Agricultural Economics 1.

Mining (3 units).

1940-41 and 1941-42 Sessions

Students entering their Third Year in the autumn of 1940 will take the following courses: English or language as required, Economics 4, Economics 12, Commerce 1, Commerce 6. In their Fourth Year they will conform to the regular requirements of the Calendar.

Students entering their Fourth Year in the autumn of 1940 will take the courses as provided in the Calendar.

Honours (B.Com.)

1. Candidates for Honours are required to take Economics 13 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

*These courses are open only to students proceeding to the degree of B.S.F. For the regulations governing the degree of B.S.F. in the combined courses of Commerce and Forestry, consult the section *Double Courses* at the end of the Calendar.

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:

- (a) to spend one year in resident graduate study; or
- (b) 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
- (c) 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 entitled *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 entitled *Instruc-*

*It should be noted that not all the courses designated as offered primarily for graduate students are certain to be given.

tions for the Preparation of Masters' Theses.) The latest date for receiving Masters' theses in the Second 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 96-100.

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. 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 (*a*), 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 (*a*).

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, 9, and 12.

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

M.A. Course:

Minor: A minimum of six units of work regularly offered in the Third and Fourth Years.

Major: Nine units of work regularly offered in the Third and Fourth Years, including a thesis, which will ordinarily count for three units.

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

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:

Minor: A minimum of six units of work regularly offered in the Third and Fourth Years.

Major: Nine units of work regularly offered in the Third and Fourth Years, including a thesis, which will ordinarily count for three units.

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

Education

Prerequisites:

Minor: Six units (of which three must be in Education) chosen from the following: Education 9, 10, 12; Philosophy 9; Psychology 4, 9.

Major: The Teacher Training Course or its equivalent. The Academic Certificate will be considered the equivalent of the Teacher Training Course.

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 9, 10, and 12 will be accepted for both the prerequisites and the course; *or*

(b) Six units (of which three must be in Education) chosen from Education 9, 10, 12, 20, 21, 22, 23; Psychology 4, 9.

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.

Philosophy

Prerequisites:

Minor: Six units chosen from Philosophy 2, 3, 4, 5, 6, 7, 8, 9, 10.

Major: Psychology 1 or its equivalent, and nine units chosen from Philosophy 2, 3, 4, 5, 6, 7, 8, 9, 10. Students are recommended to take, in addition, Psychology 2.

M.A. Course:

Minor: Six units of Philosophy not already taken.

Major: At least six units of Philosophy not already taken, 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.

Psychology

Prerequisites:

Minor: Six units chosen from Psychology 2, 3, 4, 5, 6, 7, 8, 9.

Major: Philosophy 1 and 8, and nine units chosen from Psychology 2, 3, 4, 5, 6, 7, 8, 9. Students are recommended to take as additional preparation Biology 1, Mathematics 2, and Physics A or 1.

M.A. Course:

Minor: Six units of Psychology not already taken.

Major: At least six units of Psychology not already taken, and a thesis.

TEACHER TRAINING COURSE

Candidates qualifying for the Academic Certificate (given by the Provincial Department of Education, Victoria, on the completion of the Teacher Training Course) take the courses prescribed on pages 140-141.

Registration for the Teacher Training Course is limited to sixty. 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, Home Economics, 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 9, 10, 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 1 as prerequisite to Educational Psychology, and must have fulfilled one of the following:

- (a) They must have obtained at least nine units of credit in the academic courses normally offered in the Third and Fourth Years in each of at least two of the following subjects: Biology (including Botany and Zoology), Chemistry, English, French, Geography, German, History, Latin (including Greek), Mathematics, Physics. Equivalent courses in the Faculty of Applied Science may be offered. 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 units of credit in Agriculture in addition to Agriculture 1 and 2, and at least nine 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, the language offered for University Entrance, Social Sciences (History, Economics, Political Science, and Sociology);

- (e) They must have obtained a degree in Home Economics from a recognized university.

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 2. (Regulation 3, page 81, 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 DIPLOMA IN SOCIAL WORK

Requirements for Entrance

The courses in Social Work are of a professional character and are designed for graduate students with a B.A. degree or its equivalent.

Requirements for the Diploma

To graduates in Arts whose undergraduate course has included Economics 1, Psychology 1, and Sociology 1, the Diploma in Social Work will be granted on completion of 27 units of credit made up as follows: Social Work 1-13, 19 units; Nursing B5, 1 unit; Nursing B27, 1 unit; and 6 additional units (three in Sociology and

three in Third and Fourth Year courses in Psychology). Undergraduates who look forward to taking the Diploma are therefore strongly advised to take the three prerequisite courses, namely, Economics 1, Psychology 1, and Sociology 1, and are also advised to take Economics 8 (Social Statistics). The 27 units required for the Diploma will be reduced by 6 units for candidates who have included in their undergraduate course both 3 units of Sociology, additional to Sociology 1, and 3 units in Third or Fourth Year courses in Psychology. A reduction of 3 units will be made if one of these courses has been taken.

Length of Course

The normal time required to complete the course is two years, but graduates qualified to receive the Diploma on completion of less than 27 units may finish in one Winter Session and a subsequent Summer Session.

Fees

The fees are the same as for undergraduates in Arts. The full fee for a Winter Session will cover the fee for the courses Social Work 5 and 6, which are offered in the Summer Session only.

Date of Application

Applications for admission must be in the hands of the Registrar not later than August 15. A personal interview with the Professor of Sociology and with the Supervisor of Field Work is essential and should take place before the first day of lectures.

Field Work

Field work is made possible through the co-operation of the following agencies located in Vancouver: Alexandra Fresh Air Camp; Alexandra Neighbourhood House; Children's Aid Society of Vancouver; Child Welfare Branch, Department of the Provincial Secretary; Provincial Psychiatric Services; Divisions of T.B. and V.D. Control; Family Welfare Bureau; Industrial School for Girls; John Howard Society; Social Service Department, City of Vancouver; Social Service Department, Vancouver General Hospital; Welfare Branch, Department of the Provincial Secretary; Young Men's Christian Association; Young Women's Christian Association; and three agencies located in Victoria: Children's Aid Society, Family Welfare Association, and Young Women's Christian Association.

A minimum of four months' field work is required, for which 6 units of credit are granted. The usual procedure is for a student

to do 16 hours of field work each week for two terms and two months field work prior to the opening of the Summer Session. Reports are made by the agencies to the Supervisor of Field Work from time to time. A student who fails to obtain a passing mark on a field work report may be required to discontinue at the end of the First Term.

An agency is not responsible for expenses (such as carfare) incident to the field work.

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 92, and in reference to admission to Second Year Applied Science, page 80.)

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, will 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; Salle, *Fundamental Principles of Bacteriology*, 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: 9.30-10.30, Tuesday.

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

Reference: Topley & Wilson, *Principles of Bacteriology and Immunity*, latest edition, Wood.

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, Williams & Wilkins.

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*, Royal Academy of Sciences and Letters of Denmark.

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 the physiology of 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.

This course may be taken in their Third Year by prospective Honours course students after consultation with the head of the Department.

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

3 units.

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 General Biology, Botany, or Zoology; also to courses closely related to biological science, such as Agriculture, Forestry, Medicine.

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

The course is prerequisite to all courses in General Biology, 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;

Section C, 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; Mendel's Law, applications and modifications; the physical basis of heredity: variations; mutations, natural and induced; the nature of the gene.

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

Prerequisite: Biology 1.

Two lectures and three hours laboratory a week. First Term.
 1½ 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 consists 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.
 1½ units.

Lectures: 8.30-9.30, Monday.

Laboratory: 8.30-10.30, Wednesday and Friday.

2. (c) *Problems in Genetics*.—An introduction to genetical methods and investigations.

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

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

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

Prerequisite: Biology 2 (a) and 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: Mitchell, *General Physiology*, McGraw-Hill; or Bayliss, *Principles of General Physiology*, Longmans.

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 *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 (a) may be obtained through the Evening Course.

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

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 students in Economics, Commerce, and Engineering, proceeding to a Forestry degree; these courses are prerequisite to the Fifth Year in Forestry.

Reference readings are assigned.

Biology 1 is recommended as a preceding course.

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

Lectures: 11.30-12.30, Tuesday and Thursday.

Laboratory: 3.30-5.30, Thursday.

1. (c) *General Forestry*.—A study of silvics and a general survey of forest distribution and influences.

Text-book: Toumey and Korstian, *Foundations of Silviculture upon an Ecological Basis*, 2nd edition, Wiley.

References: Mulholland, *Forest Resources of British Columbia*, B. C. Forest Service, Victoria; *A National Plan for American Forestry*, Superintendent of Documents, Washington, D. C.; Zon and Sparhawk, *Forest Resources of the World*, McGraw-Hill; various government publications.

Prerequisite: Botany 1 (a), 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.

Prerequisite: Botany 1 (a).

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

2 units.

(Not given in 1940-41.)

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; collection and preservation of specimens.

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, University of Minnesota.

Prerequisite: Botany 1 (a).

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, 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 (a).

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. (This course is identical with 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. (This course is identical with 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 and of methods of killing, fixing, embedding, sectioning, staining, and mounting; drawing, reconstruction; use of microscope, camera lucida, and 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 (a).

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 (a).

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 (a).

Text-books: Morton & 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*, Allen and 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: Hubert, *An Outline of Forest Pathology*, Wiley.

One lecture and two hours laboratory a week. Second Term. 1 unit.

Lectures: 10.30-11.30, Friday.

Laboratory: 1.30-3.30, Wednesday.

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 (a).

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, Tuesday 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 (a).

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. ½ 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: Toumey and Korstian, *Foundations of Silviculture upon an Ecological Basis*, 2nd edition, Wiley; 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 (a).

Two lectures and one period of field and practical work a week. First Term. 2 units.

Lectures: 11.30-12.30, Monday and Friday.

Laboratory: 3.30-5.30, Monday.

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 (*a*); but credit is not given until the laboratory work is complete.

Students who do not desire credit but wish 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 obtained 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.

Associate 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; Briscoe, *An Introduction to College Chemistry*, Houghton Mifflin.

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: Richardson and Scarlett, *General College Chemistry*, Holt. 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*, Appleton-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; Desha, *Organic Chemistry*, McGraw-Hill; Lucas, *Organic Chemistry*, American Book Co.; Richter, *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; *Handbook of Chemistry and Physics*, Chemical Rubber Company, Cleveland.

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. *Introduction to Chemical Engineering*.—In this course the elements of unit processes, such as filtration, distillation, crystallization, evaporation, and drying are to be considered. Several lectures will be devoted to the chemistry of combustion. The lectures will be supplemented by visits to manufacturing plants in the neighbourhood.

Text-book: Badger and McCabe, *Elements of Chemical Engineering*, McGraw-Hill.

Prerequisites: Chemistry 2, 3, 4 and Mathematics 10.

Two lectures per 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-book: Creighton-Fink, *Theoretical Electrochemistry*, Vol. I, Wiley.

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 compounds 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; Partington, *A Short History of Chemistry*, Macmillan.

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 1941-42 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.; Weiser, *Colloidal Chemistry*, Wiley.

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, electrochemistry, and capillarity.

Text-book: Lewis & Randall, *Principles of Thermodynamics*, McGraw-Hill.

Prerequisite: Chemistry 7.

One lecture a week. 1 unit.

(Given in 1941-42 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, Appleton-Century.

Two lectures a week. Second Term.

21. *Chemical Kinetics*.—The fundamentals of statistical mechanics with applications to the theory of interionic attraction, molecular collisions, specific heat, entropy, and rates of thermal and photochemical reactions.

Reference: Tolman, *Statistical Mechanics with Applications to Physics and Chemistry*, Chemical Catalog Co.

Two lectures a week. Second Term. 1 unit.

(Given in 1941-42 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.

Text-book: Gregg, *The Adsorption of Gases by Solids*, Methuen.

References: McBain, *The Sorption of Gases by Solids*, Routledge; Adam, *The Physics and Chemistry of Surfaces*, Oxford; 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), Rivingtons; 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 Vinctus*, Sikes and Willson, Macmillan; North and Hillard, *Greek Prose Composition* (sections 17-44), Rivingtons; Norwood, *The Writers of Greece*, Oxford.

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 1941-42 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 1941-42 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 1941-42 and alternate years.)

4. *Greek Art and Literature.*

(a) *Greek Art*.—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 and Unwin.

Two hours a week.

Either part of this course may be taken separately, for a credit of one or 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; *A Book of Latin Poetry*, Neville, Jolliffe, Dale, and Breslove, 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 University Entrance.

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; Marchant and Watson, *Latin Prose Composition*, Bell.

All students are advised to provide themselves with Allen and Greenough, *New Latin Grammar*, Ginn.

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 1941-42 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 1941-42 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-books: Marsh, *A History of the Roman World from 146 to 30 B.C.*, Methuen; Wells and Barrow, *A Short History of the Roman Empire*, Methuen; Parker, *A History of the Roman World from A.D. 138 to 337*, Methuen.

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 and one hour devoted to sight reading; 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.

PRIMARYLY 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*, Oxford.

Three hours a week. 3 units.

23. *Roman Comedy*.

Department of Commerce

Professor: Ellis H. Morrow.

Associate Professor: A. W. Currie.

Lecturer in Accountancy: Frederick Field.

The courses in this department, with the exception of Commerce 5 and 9, are open only to candidates for the degree of B.Com.

1. *Fundamentals of Accounting*.—A study of the financial records of business and the modern methods of achieving financial statements. The course includes practice in bookkeeping, the development of special journals, the use of work sheets, preparation of statements, and a consideration of partnership and corporation accounting.

Written assignments must be prepared for each class period, and in addition one or two model sets of accounts are handled during the course of the academic year.

Text-book: Prickett and Mikesell, *Principles of Accounting and Work Book*, Macmillan.

Three hours a week. Mr. Morrow, Mr. Currie. 3 units.

Lectures: Section A: 1.30-2.30, Tuesday; 1.30-3.30, Thursday.

Section B: Hours to be arranged.

2. *Advanced Accounting*.—This course embraces advanced work in accounting and the study of the financial problems of corporations, including consolidations, depreciation, and the miscellaneous details connected with balance sheet valuations in general.

Text-book: To be announced.

Assigned readings.

Prerequisite: Commerce 1.

Three hours a week. Mr. Field.

3 units.

Lectures: 2.30-4.30, Monday; 10.30-11.30, Saturday.

3. *Cost Accounting*.—A study of the application of accounting principles to the internal operations of a business so as to provide management control of labour, machines, materials, and overhead.

Prerequisites: Commerce 1, 2, 9.

Three hours a week.

3 units.

(Not offered in 1940-41.)

4. *Commercial Law*.—Principles of company law and of the law of contract, agency, bills and notes, sale of goods, etc. The primary purpose of this course is to familiarize the student with the various legal situations that arise in the day to day conduct of a business and with their implications.

Three hours a week. Mr. Tupper.

3 units.

Lectures: 8.30-9.30, Tuesday, Thursday, and Saturday.

5. *Commercial Geography*.—A broad survey of the economic and geographic factors which lie behind the structure of business, with particular emphasis upon the North American Continent. A report upon the production, processing, distribution, and use of some commodity, important in the commercial life of Canada, is required of the students, who will work in groups in order to train themselves to work together on common problems and to exercise their initiative. The lectures will cover a wide field of interrelated topics and will be given by instructors expert in the particular fields touched upon.

Assigned readings.

Three hours a week. Mr. Currie.

3 units.

Lectures: 10.30-11.30, Tuesday, Thursday, and Saturday.

6. *Marketing*.—A consideration of methods and channels used for the distribution of consumer and industrial goods, and the merchandising problems of manufacturers and distributors. The course is handled by a discussion of cases taken from actual business. A series of written reports on assigned cases is required as part of the course.

Text-book: Learned, *Problems in Marketing*, McGraw-Hill.

Assigned readings.

Three hours a week. Mr. Morrow.

3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

9. *Business Finance*.—A study of the problems of financing business concerns, including such factors as promotion, types of organization, the provision of long-term and short-term capital, financial statement analysis, involvements, and the public policy towards corporations. As far as possible instruction will be by means of cases taken from actual business.

Text-book: To be assigned.

Three hours a week. Mr. Currie. 3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

11. *Industrial Management*.—A study of the organization and management of manufacturing concerns from the standpoint of control of raw materials, plant and equipment, operations, labour, etc. Class discussion will be based on cases taken from actual business. Field work comprising visits to factories and written reports form a part of this course.

Text-book: Robbins and Folts, *Introduction to Industrial Management*, McGraw-Hill.

Assigned readings.

Three hours a week. Mr. Morrow. 3 units.

(Given in 1940-41 and alternate years.)

13. *Foreign Trade Problems*.—Methods, policies, and routine practice in the serving of foreign markets, including consideration of import problems. The course will be conducted by discussion of actual business cases and will entail field work and written reports.

Text-book: To be announced.

Assigned readings.

Three hours a week. Mr. Morrow. 3 units.

(Given in 1941-42 and alternate years.)

Graduating Report.—The topic of this report will be arranged in consultation with the student and will be selected to conform with his special interest. Students should, if possible, decide on their topics before the end of the Third Year, thus making an opportunity to start work on the reports during the summer vacation.

One hour a week. Mr. Morrow, Mr. Currie.

Department of Economics, Political Science, and Sociology

Professor: H. F. Angus.

Professor:

Associate Professor: G. F. Drummond.

Associate Professor: C. W. Topping.

Associate Professor: Joseph A. Crumb.

LECTURERS IN SOCIAL WORK

Miss Zella Collins, Diploma, Social Science Department (Toronto), Supervisor of Field Work.

Miss Dorothy Coombe, B.A. (Brit. Col.), Supervisor of Field Work.

Part-time Lecturers

M. Chater, B.Sc. (Y.M.C.A. College).

Miss Isobel Harvey, M.A. (Brit. Col.).

Miss Elizabeth King, M.A. (Acadia).

Miss Mary McPhedran, Diploma, Social Science Department (Toronto).

Honorary Lecturers

J. H. Creighton, M.A. (Brit. Col.).

G. F. Davidson, Ph.D. (Harvard).

Miss Laura Holland, C.B.E., R.N., Cert. School of Social Work (Simmons College).

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, Dominion Bureau of Statistics; Slichter, *Modern Economic Society*, Holt.

If this course is taken for credit in the Third or the Fourth Year, additional readings will be assigned.

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 to the present day. Special attention will be given to the recent economic history of Great Britain and Canada.

Text-book: Heaton, *History of Trade and Commerce with Special Reference to Canada*, revised edition, Nelson.

References: Knight, Barnes, and Flugel, *Economic History of Europe*, Houghton Mifflin; Heaton, *Economic History of Europe*, Harpers; Croome and Hammond, *The Economy of Britain, a History*, Christopher; Day, *History of Commerce*, Longmans; Knowles, *Industrial and Commercial Revolutions*, Dutton; Fay, *Great Britain from Adam Smith to the Present Day*, Longmans; Mantoux, *The Industrial Revolution in the Eighteenth Century*, Cape; Faulkner, *American Economic History*, Harpers; Innis, *Economic History of Canada*, Ryerson; *Canada Year Book*, Dominion Bureau of Statistics.

Three hours a week. Mr. Currie.

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*, 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.

(Given in 1941-42 and alternate years.)

4. *Money and Banking*.—The origin and development of money, credit, and banking and the economic functions performed by commercial, savings, trust, and investment banks; the monetary and banking systems of England, Canada, and the other British Dominions, the United States and other important foreign countries; foreign exchange; financial aspects of the trade cycle; the purchasing power of money; the problems of central banking.

Text-books: James, *The Economics of Money, Credit and Banking*, Ronald; 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*, Appleton-Century.

Readings: Seligman, *Studies in Public Finance*, 1925, Macmillan; Dalton, *Principles of Public Finance*, 1929, Routledge; Comstock, *Taxation in the Modern State*, 1931, Longmans; Shirras, *Science of Public Finance*, 1936, Macmillan.

Three hours a week. Mr. Crumb. 3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

(May not be given in 1940-41.)

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*, Hodge.

References: League of Nations Publications, viz., *World Economic Survey*, *Statistical Year Book of the League of Nations*, *Prosperity and Depression*; Ohlin, *Interregional and International Trade*, Harvard.

Assigned references.

Three hours a week. Mr. Drummond. 3 units.

Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

7. *Business Finance* (formerly *Corporation Economics*).—A study of the problems of financing business concerns, including such factors as promotion, types of organization, the provision of long-term and short-term capital, financial statement analysis, involvements, and the public policy towards corporations. As far as possible instruction will be by means of cases taken from actual business. (This course is identical with Commerce 9.)

Text-book: 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 questionnaires; 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. 3 units.

(May not be given in 1940-41.)

9. *History of Economic Thought*.—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: Roll, *A History of Economic Thought*, Faber and Faber; Gray, *The Development of Economic Doctrine*, Longmans; Scott, *The Development of Economics*, Appleton-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. *Commercial Geography* (formerly *Economic Geography*).—A broad survey of the economic and geographic factors which lie behind the structure of business, with particular emphasis upon the North American Continent. A report upon the production, processing, distribution, and use of some commodity, important in the commercial life of Canada, is required of the students, who will work in groups in order to train themselves to work together on common problems and to exercise their initiative. The lectures will cover a wide field of interrelated topics and will be given by instructors expert in the particular fields touched upon. (This course is identical with Commerce 5.)

Assigned readings.

Three hours a week. Mr. Currie. 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*, Oxford; Jackman, *Economics of Transportation*, University of Toronto.

Assigned readings.

Three hours a week. 3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

(Given in 1941-42 and alternate years.)

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*, Holt; Mills and Davenport, *A Manual of Problems and Tables in Statistics*, Holt.

Prerequisite: Mathematics 2 or 3.

One lecture and two hours laboratory a week. Mr. Drummond.
3 units.

Lectures: 10.30-11.30, Monday.

Laboratory (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; 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, Wednesday and Friday.

Laboratory (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-Century; 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. (This course is identical with Forestry 16.)

Three hours a week. 3 units.

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*.—(i) A rapid survey of legal history; (ii) 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.

(Not given in 1940-41.)

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.

(Not given in 1940-41.)

5. *The Relations of the Dominion and Provinces in Canada*.—A general consideration of the relations of the Dominion and the Provinces, with special attention to finance.

Reference: *The Report of the Royal Commission on Dominion Relations* and the relevant appendices, King's Printer, Ottawa.

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 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 1940-41.)

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 1941-42 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 in Social Work

NOTE. A student must be a university graduate to be eligible for admission to any of these courses.

1. *Introduction to Social Work*.—An introductory course in which is presented a general view of the entire field of social work 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 Harvey. 1 unit.

Lectures: 11.30-12.30, 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, Miss Holland. 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, 1940. Miss Gartland. 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, 1940. Miss Gartland. 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: 10.30-11.30, Friday.

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 hour a week. Mr. Topping, Miss Collins. 6 units.
Lectures: 11.30-12.30, Thursday.

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: 11.30-1.00, Friday.

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. Creighton.
1 unit.

Lectures: 11.30-1.00, Friday.

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 Methods:

Professors: R. H. Clark, A. C. Cooke, A. E. Hennings, A. H. Hutchinson, Isabel MacInnes, O. J. Todd.

Part-time Lecturers: N. F. Black, Miss Grace Bollert, Miss S. M. Boyles, Miss M. B. Carruthers, Mrs. I. V. Green, E. Lee, A. M. McDermott, Miss M. McManus, C. H. Scott, R. Straight.

NOTES

1. Registration for the Teacher Training Course is limited to sixty. Applications for admission should be made to the Registrar on or before August 15.

2. Psychology 4 and 9 may be counted as courses in Education.

3. Undergraduates who intend to proceed to the Teacher Training Course are required to take Psychology 1 and their attention is called to Philosophy 1, 9, Psychology 4, 9.

4. Two of the three courses, Education 9, 10, 12, may be taken for undergraduate credit, but only by students who have completed their Normal training.

TEACHER TRAINING COURSES

9. *Principles of Education*.

Part 1: *Principles of Teaching*.—The various types of lesson; the principles underlying each type; the application of these types to the school programme.

Part 2: *The Philosophy of Education*.

Text-book: To be announced.

Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

10. *Educational Psychology*.

Part 1: *Elementary Statistics Applied to Education*.—Graphical representation of data; measures of central tendency, variability, and relationship; the normal curve.

Part 2: *Applications of Psychology to Education*.—Maturation and development of behaviour; individual differences; the excep-

tional child; the role of emotion; the learning process; transfer of training; measurement of intelligence, personality, and achievement; psychology of school subjects.

Text-book: Stroud, *Educational Psychology*, 1935, Macmillan.

Prerequisite: Psychology 1.

Lectures: 2.30-3.30, Monday, Tuesday, 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.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

13. *Tests and Measurements*.

14. *Methods, Observation, and Practice*.

(a) *Elementary School Subjects*. First Term.

(b) *High School Subjects*.—English, Social Studies, Latin, French, German, Mathematics, Biology, Chemistry, Physics, Agriculture, Geography, Home Economics. Second Term.

Two courses are required under (b), but students are advised to attend a third course. All students taking one or more of the special sciences (Biology, Chemistry, and Physics) are required to take also General Science.

(c) *Additional Subjects*.—Art, Music, Physical Education. Both Terms.

Librarianship. Second Term.

(d) *Observation and Practice*.

(1) First Term: At least forty hours in the elementary schools of the Province.

(2) Second Term: At least sixty hours in the high schools of the Province.

15. *Seminar*.—A special study, with an essay or report, in one of the four fields, Education 9, 10, 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:
 Assistant Professor: M. L. Bollert.
 Assistant Professor: H. C. Lewis.
 Assistant Professor: Dorothy Blakey.
 Assistant Professor: Edmund Morrison.
 Lecturer: John H. Creighton.

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 1940-41: Bates, *Twentieth Century Short Stories*, Houghton Mifflin; Euripides, *Bacchae*, in Gilbert Murray's paraphrase, Allen and Unwin; Shakspeare, *Julius Caesar*; Sheridan, *The School for Scandal*, Everyman; Ibsen, *A Doll's House*, Everyman; Monro, *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.

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.

3 units.

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 1940-41, 9 (b) will be given as follows:

- i. A detailed study of the text of *A Midsummer Night's Dream, 1 Henry IV, Othello, Antony and Cleopatra, Coriolanus.*
- 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, Ginn, or the *Cambridge Shakespeare*, ed. Neilson, Houghton Mifflin, or the *Oxford Shakespeare*, ed. Craig.

Three hours a week. Mr. Sedgewick.

3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

9. (a) (Given in 1941-42 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.

(Not given in 1940-41.)

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*, Nelson.

For reference: Elton, *A Survey of English Literature, 1780-1830*, Macmillan.

Three hours a week. Miss Blakey. 3 units.
Lectures: 2.30-3.30, Monday, Wednesday, and Friday.

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; Arnold, *Poems*, Oxford; Tennyson, *Poems*, Globe edition, Macmillan; Pierce, *Century Readings in the Nineteenth Century Poets*, Appleton-Century.

For reference: Elton, *A Survey of English Literature, 1830-1880*, Macmillan.

Three hours a week. 3 units.
Lectures: 2.30-3.30, Monday, Wednesday, and Friday.

(Not given in 1940-41.)

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. Mr. MacDonald. 3 units.
Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

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*.—(i) Middle English grammar with the reading of representative texts; (ii) *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, accent, 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).
Two hours a week. Miss Blakey. 2 units.

24. *Seminar*.—In this class advanced students will get practice in some of the simpler methods of criticism and investigation. The subject for 1940-41 will be the criticism of poetry.

Two hours a week. Mr. Larsen.

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 Economic Geology: Henry C. Gunning.

Associate Professor of Mineralogy and Petrography: H. V. Warren.

Instructor: Gordon Davis.

Geology

1. *General Geology*.—This course serves as an introduction to the science of geology, and includes the following subdivisions:

(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, Mr. Gunning, Mr. Swanson, Mr. Warren.

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.

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. First Term. Mr. Warren, Mr. Gunning, and assistants.

Laboratory: 1.30-3.30, Tuesday or Thursday.

(c) *Historical Geology*, including the history of the earth and its life from pre-Cambrian to recent time.

Two hours a week. Second Term. Mr. Williams.

Lectures: 9.30-10.30, Monday and Wednesday.

(d) *Laboratory Exercises in Map Reading and Historical Geology*, including 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: University Entrance 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, Mr. Davis, 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 economics.

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, 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 and assistants. 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, 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 of North America.

References: Geikie, *The Founders of Geology*, Macmillan; Merrill, *The First One Hundred Years of American Geology*, Yale.

Prerequisite: Geology 2.

One hour a week. Mr. Williams, Mr. Davis. 1 unit.

Lectures: 3.30-4.30, Monday.

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*, Seiler; Zittel-Eastman, *Text-book of Palaeontology*, Macmillan.

Prerequisite: Geology 1. Biology 1 and Zoology 1 are 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 (i) optical mineralogy and (ii) 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.

Prerequisite: Geology 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 4 and either 3 or 7 must precede or accompany this course.

Four hours a week. Mr. Williams, Mr. Gunning, 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 to four hours a week by arrangement. Mr. Warren.

1 to 2 units.

Lectures and laboratory: 1.30-3.30, Thursday, and additional hours to be arranged.

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 and visit localities of interest within reach of Vancouver.

References: Lahee, *Field Geology*, McGraw-Hill; Hayes, *Handbook for Field Geologists*, Wiley; Spurr, *Geology Applied to Mining*, McGraw-Hill.

Prerequisite: Geology 4, which may be taken concurrently.

A two-week course at the close of examinations in the spring.
Mr. Gunning. 1½ units.

11. *Advanced Regional Geology*.—A study of the geology of Canada and of the main geological features of the continental and oceanic segments of the earth.

References: Young, *Geology and Economic Minerals of Canada*, Geological Survey of Canada, Economic Geology Series No. 1, 1926; Suess, *Das Antlitz der Erde*, Tempsky; maps and reports by various national surveys.

Prerequisite: Geology 1.

Three lectures a week. Mr. Williams, Mr. Gunning, Mr. Davis.
3 units.

(Not given in 1940-41.)

COURSES FOR GRADUATE STUDENTS

20. *Sedimentation*.

Text-book: Twenhofel, *Treatise on Sedimentation*, 2nd edition, Williams and Wilkins.

Prerequisites: Geology 2 and 11.

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; 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.

Text-book: Dana, *Text-book of Mineralogy*, revised by Ford, 4th edition, Wiley.

References: Brush and Penfield, *Determinative Mineralogy and Blowpipe Analysis*, 16th edition, Wiley; Kraus, Hunt and Ramsell, *Mineralogy*, 3rd edition, McGraw-Hill.

Prerequisite: Geology 8.

One seminar and four hours laboratory a week, or six hours laboratory a week. Second Term. Mr. Warren. 1½ units.

Lectures: 8.30-9.30, Monday.

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.

Frequent reference will be made to U. S. Geological Survey Bulletin 825, *Microscopic Determination of the Ore Minerals*.

Prerequisite: Geology 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. 2 units.

26. *Mineral Deposits*.—A seminar course, supplemented by laboratory work, dealing with the character, origin, and structure of mineral deposits, with emphasis on ore deposits.

Text-book: Lindgren, *Mineral Deposits*, 4th edition, 1933, McGraw-Hill.

Reference: *Ore Deposits of the Western States*, A.I.M.E., 1933.

Prerequisite: Geology 8.

Two hours seminar and four hours laboratory a week. Mr. Gunning. 4 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 two hours laboratory a week. Mr. Davis.

3 units.

Lectures: 11.30-12.30, Tuesday and Thursday.

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. *Geomorphology*.—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.

References: Lobeck, *Geomorphology*, McGraw-Hill; Wooldridge and Morgan, *The Physical Basis of Geography*, Longmans.

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

(Given in 1941-42 and alternate years.)

Commerce 5 (*Commercial Geography*, formerly *Economic Geography*).—(See Commerce 5 under Department of Commerce.)

Mr. Currie. 3 units.

NOTE. This course 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 81, regarding the number of First and Second Year Courses which may be taken in the Third and Fourth Years. This rule applies also to Third and Fourth Year students electing History 1, 2, 3, 4.*

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

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, The Coming of the Second World War.

Text-books: Benns, *Europe Since 1914*, Crofts, or Langsam, *The World Since 1914*, Macmillan; Cole, *The Intelligent Man's Review of Europe Today* (for upper year credit), Ryerson; Schmitt, *Triple Alliance and Triple Entente*, Oxford; Horrabin, *Atlas of Current Events*, Ryerson.

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.

(This course may not be given in 1941-42.)

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*, McClelland and Stewart; Trotter, *Canadian History: A Syllabus*, Macmillan; Siegfried, *Canada*, Cape.; Wrong, *The Canadians*, Macmillan; Scott, *Canada Today*, Oxford; Flenley (editor), *Essays in Canadian History*, Macmillan.

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*, McClelland and Stewart; Howay, *British Columbia, the Making of a Province*, Ryerson; Sage, *Sir James Douglas and British Columbia*, Univer-

sity of Toronto; England, *The Colonization of Western Canada*, King; Morton, *A History of the Canadian West to 1870-71*, Nelson.

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 1941-42 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*, Ginn.

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, 17, 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*, Longmans; Williamson, *The Evolution of England*, Oxford; Cross, *Shorter History of England and Greater Britain*, Macmillan; Adams and Stephens, *Select Documents of English Constitutional History*, Macmillan, or Stephenson and Marcham, *Sources of English Constitutional History*, Harpers; Adams, *Constitutional History of England*, Holt; Hall and Albion, *A History of England and the British Empire*, Ginn.

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 1940-41, and alternate years, 11 (a) will be given, which deals with British Colonial policy in the 17th and 18th centuries, the development of the Dominions, and the problems of the Commonwealth.

Text-book: Mullett, *The British Empire*, Holt.

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*, Macmillan; Faulkner, *American Political and Social History*, Crofts.

Essays will be assigned throughout the session.

Three hours a week. 3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

(Not given in 1940-41.)

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 Mediæval 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*, Harpers; Smith, *A History of Modern Culture—The Great Renewal*, Holt.

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*, Rivingtons; Reddaway, *A History of Europe, 1715-1814*, Methuen; Bruun, *The Enlightened Despots*, Holt; Gottschalk, *The Era of the French Revolution*, Houghton Mifflin, or Gershoy, *The French Revolution and Napoleon*, Crofts; Brinton, *A Decade of Revolution*, Harpers; Bruun, *Europe and the French Imperium*, Harpers.

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., Macmillan; Moon, *Imperialism and World Politics*, Macmillan; Buell, *International Relations*, Oxford.

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.*—A reading course on the development of economic and social life through the Middle Ages in Europe, c. 500-1500 A.D.

Text-books: Pirenne, *An Economic and Social History of Mediaeval Europe*, and *Mediaeval Cities and the Revival of Trade*, Kegan Paul. Further reading assigned.

Essays will be assigned throughout the session.

Miss Thrupp. 3 units.

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*, Knopf; Birnie, *An Economic History of Modern Europe*, Methuen.

Essays will be assigned.

Three hours a week. Miss Thrupp. 3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

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*, Longmans; Adams and Stephens, *Select Documents of English Constitutional History*, Macmillan; Bland, Brown and Tawney, *English Economic History, Select Documents*, Bell.

Essays will be assigned throughout the session.

Three hours a week.

3 units.

Lectures: 1.30-2.30, Monday, Wednesday, and Friday.

(Not given in 1940-41.)

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*, Methuen; Williamson, *The Evolution of England*, Oxford; Fay, *Life and Labour in the Nineteenth Century*, Oxford; Trevelyan, *British History in the Nineteenth Century*, Longmans; Ensor, *England, 1870-1914*, Oxford; Stephenson and Marcham, *Sources of English Constitutional History*, Harpers; Bland, Brown and Tawney, *English Economic History, Select Documents*, Bell; Woodward, *The Age of Reform*, Oxford; Hall and Albion, *A History of England and the British Empire*, Ginn; Bruce, *British Foreign Policy*, Nelson.

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*, Oxford; Kennedy, *The Constitution of Canada*, Oxford; Kennedy, *Statutes*,

Treaties and Documents of the Canadian Constitution, 1713-1929, Oxford; Scott, *Canada To-day*, Oxford.

Essays will be assigned throughout the session.

Three hours a week. Mr Soward.

3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

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. Second Term. Mr. Cooke.

22. *Honours Seminars*:

(a) Third Year: *Problems of Bibliography and Historical Method*. Mr. Cooke, Miss Thrupp.

(b) Fourth Year: *Problems of Contemporary History*. Mr. Soward.

23. *M.A. Seminar: The History of British Columbia*. Mr. Sage.

24. *History of Latin America*.

3 units.

(Not given in 1940-41.)

25. *History of Historical Writing*. A survey of the development of Western culture as reflected in the changing outlook of historians from classical times to the present day. Emphasis will be laid on 19th and 20th century philosophies of history.

Text-book: Barnes, *A History of Historical Writing*, Oklahoma University. Further readings to be assigned.

Miss Thrupp.

3 units.

Latin 7. *Roman History from 133 B.C. to 180 A.D.* (See under Classics, Page 127.)

3 units.

Department of Mathematics

Professor: Daniel Buchanan.

Professor: F. S. Nowlan.

Professor: Ralph Hull.

Professor: L. Richardson.

Associate Professor: Walter H. Gage.

Assistant Professor: F. J. Brand.

Instructor: May L. Barclay.

Lecturer: J. Maurice Kingston.

GENERAL COURSES

1. *Introductory Mathematics*.—An elementary course in algebra, including proportion, variation, logarithms, progressions, theory of quadratic equations, permutations, combinations, annuities, bino-

mial 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) *Analytical Geometry and Algebra*.—Review of conics, study of polar co-ordinates, introduction to solid analytical geometry; induction, complex numbers, Horner's method, exponential, logarithmic, and other series, undetermined coefficients, partial fractions, convergence and divergence.

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*, Ginn.

One hour a week. Mr. Buchanan, Miss Barclay. 1 unit.

Lectures: 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. Gage. 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 1941-42 and alternate years.)

HONOURS COURSES

Mathematics 2 is prerequisite to all the following 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 1941-42 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 Aitken, *Introduction to the Theory of Canonical Matrices*, Blackie.

References: Albert, *Modern Higher Algebra*, University of Chicago; Bôcher, *Higher Algebra*, Macmillan; Dickson, *Introduction to the Theory of Numbers*, University of Chicago; Hilton, *Finite Groups*, Oxford.

Two hours a week. Mr. Hull. 2 units.

Lectures: 11.30-12.30, Tuesday and Thursday.

(Given in 1941-42 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: Small, *Infinite Processes*, University of Oregon.

References: Knopp, *Infinite Series* (trans. by Young), Blackie; Bromwich, *Infinite Series*, Macmillan.

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, *Statics and Dynamics*, McGraw-Hill; Byerly, *Generalized Co-ordinates*, Ginn.

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. Gage. 1 unit.

19. *Methods in High School Mathematics*.—This course is offered 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: Joyce Hallamore.

Assistant Professor: Ronald Hilton.

Assistant Professor: Charles E. Borden.

Instructor: Madame Y. Darlington.

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: *Modern French Short Stories*, edited by Fannièrè, Oxford; Molière, *Le Bourgeois gentilhomme*, Didier; *Les cent meilleurs poèmes lyriques*, Gowans & Gray; Ratner and Sorkin, *French Review Grammar*, Gage.

Reference: Berthon, *French Grammar*, Dent.

Prerequisite: University Entrance 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, or *Polyeucte*, 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 take also 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*.

Three hours a week. 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).

Three hours a week. 3 units.

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, *Electre*, 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*, Appleton-Century; Mornet, *Rousseau, Morceaux choisis*, Didier; Fallex, *Diderot, Extraits*, Delagrave; Beaumarchais, *Le Barbier de Séville*, Macmillan.

Prerequisites: French 3 (a) and 3 (b).

Three hours a week. 3 units.

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).

Three hours a week.

3 units.

COURSES FOR GRADUATE STUDENTS

5. (b) *The Middle Ages and XVIth 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, Gallimard; Gide, *Pages de Journal*, Gallimard; Valéry Larbaud, *Amants, heureux amants*, Gallimard. 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 to be read by Honours students only.

German

Beginners' Course.—Schinnerer, *Beginning German*, Macmillan; Durian, *Kai aus der Kiste*, Holt.

Four hours a week.

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 fourth period at 11.30-12.30 Tuesday or Thursday.

1. (a) Texts: Chiles, *German Composition and Conversation, Part I*, Ginn; Kästner, *Das fliegende Klassenzimmer*, Crofts; Röseler, *Moderne Deutsche Erzähler*, Norton; Alexis and Pfeiler, *In Deutschland*, Midwest Book Co.; Bruns, *Book of German Lyrics*, Heath.

Prerequisite: University Entrance or Beginners' German.

Four 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 fourth period at 1.30-2.30 Monday or 11.30-12.30 Wednesday.

1. (b) *Scientific German*.—An introduction to the reading of scientific German, supplemented by a review of essentials in German grammar and composition.

Text-books: Wild, *An Introduction to Scientific German*, Oxford; Wild, *An Anthology of Scientific German*, Oxford; Chiles, *German Composition and Conversation, Part I*, Ginn.

Four hours a week.

3 units.

2. Texts: Chiles, *German Composition and Conversation, Part II*, Ginn; Diamond and Schomaker, *Lust und Leid*, Holt; Eichen-

dorff, *Aus dem Leben eines Taugenichts*, Prentice-Hall; Thomas Mann, *Tonio Kröger*, Crofts; Bruns, *Book of German Lyrics*, Heath.

Prerequisite: German 1 (a) 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.

Science section with alternate reading.

Prerequisite: German 1 (b).

Three hours a week.

3 units.

3. (a) *The Classical Period*.—Lectures on the development of German literature, with special emphasis on that of the eighteenth century. 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*.

Three hours a week.

3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

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.

3. (c) A course in oral and written composition, based largely on a study of the development of German civilization.

Text: Jordan, *Deutsche Kulturgeschichte*, Crofts.

Lectures: 8.30-9.30, Tuesday, Thursday, and Saturday.

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. (Session 1939-40.)

Professor: J. A. Irving. (Session 1940-41.)

Assistant Professor: Joseph E. Morsh.

Assistant Professor of Psychology and Education: Frederick T. Tyler.

Philosophy

Philosophy 1 is intended for two classes of students: first, those who contemplate specializing in philosophy or psychology either as Honours or as General Course 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.

1. *Introduction to Philosophy*.—The development of philosophy in the Western World, studied in its relation to other aspects of cultural history, with especial reference to cognate developments in literature, religion, politics, and science.

Text-book: Patrick, *Introduction to Philosophy*, revised edition, 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.

Three hours a week. Mr. Irving.

3 units.

Lectures: 11.30-12.30, Tuesday and Thursday, and a third hour to be arranged.

(Given in 1941-42 and alternate years.)

3. *History of Ancient Philosophy*.—Primitive thought and the origins of Western civilization; early Greek schools and the relations between philosophy and science; the Greek Enlightenment and the Sophists; the role of Socrates; the intellectual reconstruction of Plato; the philosophy of Aristotle; the Stoic, Epicurean, and Sceptic schools; the later history of Platonism.

Text-books: Bakewell, *Source Book in Ancient Philosophy*, Scribners; Plato, *Republic*, Macmillan; Aristotle, *Selections*, (ed. Ross), Scribners.

Three hours a week. Mr. Irving.

3 units.

Lectures: 10.30-11.30, Tuesday and Thursday, and a third hour to be arranged.

(Given in 1940-41 and alternate years.)

4. *History of Modern Philosophy*.—A survey of the development of philosophy from the Renaissance to the age of Hume, with a special study of certain selected texts.

Text-book: To be announced.

Three hours a week.

3 units.

Lectures: 10.30-11.30, Tuesday, Thursday, and Saturday.

(Given in 1941-42 and alternate years.)

5. *Philosophical Movements Since the Time of Hume*.—The Kantian philosophy. 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*, Houghton Mifflin; Anderson and Fisch (edd.), *Philosophy in America*, Appleton-Century.

Three hours a week.

3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

(Given in 1941-42 and alternate years.)

6. *Philosophy of Mind*.—A study of the structure and function of mind, including the discussion of such topics as the philosophical implications of scientific psychology, the self and personality, the relation of body and mind, the place of mind in nature and in society.

Text-book: To be announced.

Three hours a week. Mr. Irving.

3 units.

Lectures: 11.30-12.30, Tuesday and Thursday, and a third hour to be arranged.

(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 Educa-*

tion; 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.

(Not given in 1940-41.)

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-book: Burt, *Principles and Problems of Right Thinking*, latest edition, Harpers.

Three hours a week. 3 units.

Lectures: 1.30-2.30, Monday, Wednesday, and Friday.

(Not given in 1940-41.)

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*, Putnam; Ellwood, *A History of Social Philosophy*, Prentice-Hall; Hobhouse, *Social Development*, Allen and Unwin; Hocking, *Man and the State*, Yale; Laski, *The State in Theory and Practice*, Viking Press.

Three hours a week. Mr. Irving. 3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

(Given in 1940-41 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 philosophical 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*, Oxford.

References: Bosanquet, *A History of Aesthetic*, Macmillan; Ducasse, *Philosophy of Art*, Longmans; Prall, *Aesthetic Judgment*, Crowell; Santayana, *The Sense of Beauty*, Scribners; Stace, *The Meaning of Beauty*, Richards.

Three hours a week. 3 units.

Lectures: 1.30-2.30, Tuesday and Thursday, and a third hour to be arranged.

(Not given in 1940-41.)

Psychology

Psychology 1 is a prerequisite for all courses in Psychology numbered 2-9, which are open only to Third and Fourth Year students.

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: Dashiell, *Fundamentals of General Psychology*, Houghton Mifflin.

Three hours a week. Mr. Irving. 3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

2. 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.

Text-books: Seashore, *Elementary Experiments in Psychology*, Holt; Bills, *Experimental Psychology*, Longmans; Woodworth, *Experimental Psychology*, Holt.

Prerequisite: Psychology 1.

Two lectures and two hours laboratory a week. Mr. Morsh.

3 units.

Lectures: 1.30-2.30, Tuesday and Thursday.

Laboratory: 2.30-4.30, Tuesday.

3. Social Psychology.—The psychological analysis of social life from the point of view of the individual. Topics included are the social setting of human behaviour, personality and group participation, language, suggestion, imitation, attitudes, stereotypes, propaganda, crowd behaviour, and leadership.

Text-book: Young, *Social Psychology*, Crofts.

Prerequisite: Psychology 1 or Philosophy 1.

Three hours a week. Mr. Irving.

3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

(Given in 1941-42 and alternate years.)

4. *Psychology of Adjustment*.—Origins and modification of behaviour, motivation, varieties of adjustive behaviour, personality, mental hygiene, guidance.

Text-book: Shaffer, *The Psychology of Adjustment*, Houghton Mifflin.

Prerequisite: Psychology 1.

Three hours a week. Mr. Morsh.

3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

(Given in 1941-42 and alternate years.)

5. *Abnormal Psychology*.—The study of abnormal behaviour and mental processes as an approach to the understanding of human nature.

Text-book: Doreus and Shaffer, *Abnormal Psychology*, Williams and Wilkins.

Prerequisite: Psychology 1.

Three hours a week. Mr. Morsh.

3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

(Given in 1940-41 and alternate years.)

6. *Psychological Measurement and Statistics*.

(a) *Psychological Measurement*.—History and principles of measurement; construction and application of tests.

(b) *Statistics*.—Graphical representation of data; measures of central tendency, variability, and relationship; the normal curve; comparable measures.

Text-books: Hunt, *Measurement in Psychology*, Prentice-Hall; Garrett, *Statistics in Psychology and Education*, Longmans.

Prerequisite: Psychology 1.

Three hours a week. Mr. Tyler.

3 units.

Lectures: 3.30-4.30, Monday, Wednesday, and Friday.

7. *Applied Psychology*.—The applications of psychology in the professions, in business, and in industry; advertising; salesmanship; personnel management; human efficiency; human motivation.

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 1941-42 and alternate years.)

8. *Psychology of Culture*.—The psychological analysis of social life from the point of view of culture. Topics included are the meaning of culture, its psychological relevance for personality, its value relativity, and the problem of reconciling personality variations and cultural variations.

Text-book: Linton, *The Study of Man*, Appleton-Century.

Prerequisite: Psychology 1 or Philosophy 1.

Three hours a week. Mr. Irving.

3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

(Not given in 1940-41.)

9. *Child Psychology*.—Problems and methods of child psychology, origins of behaviour, development of motor capacities, mental functions and emotions, social development, child hygiene, prediction, guidance, and control of child behaviour.

Text-book: Brooks, *Child Psychology*, Houghton Mifflin.

Prerequisite: Psychology 1.

Three hours a week. Mr. Morsh.

3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

(Given in 1940-41 and alternate years.)

Department of Physics

Professor: Gordon Merritt Shrum.

Professor: A. E. Hennings.

Assistant Professor: A. M. Crooker.

Assistant Professor: Harold D. Smith.

Assistant Professor: Kenneth C. Mann.

Assistant Professor: George Michael Volkoff.

Lecturer: Wilbur H. Goss. (Session 1939-40.)

Lecturer: C. Rulon Jeppesen. (Session 1939-40.)

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 presented Physics for University Entrance.

Text-book: To be announced.

Reference: Lemon, *From Galileo to Cosmic Rays*, University of Chicago.

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

Lectures: 8.30-9.30, Tuesday, Thursday and Saturday.

1. *Elementary Physics*.—A study of general college physics suitable for those students who have obtained credit for University Entrance 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.

Reference: Smith, *Elements of Physics*, McGraw-Hill.

Prerequisite: University Entrance Physics or Physics A.

Three lectures and two hours laboratory 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.

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.

Reference: Perkins, *College Physics*, Prentice-Hall.

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, molecular theory, temperature, calorimetry, radiation laws, and elementary thermodynamics.

Text-books: Reynolds, *Elementary Mechanics*, Prentice-Hall; Edser, *Heat for Advanced Students*, 1936, 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 course in analytic and vector mechanics of a particle and a rigid body. Among the topics treated are central forces, vector fields, D'Alembert's Principle, generalized coordinates, and Lagrange's equations of motion. An introduction is given to the Principle of Least Action, Hamilton's Principle, canonical transformations, and the Hamilton-Jacobi equation.

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*, University of Chicago; 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 1940-41.)

PRIMARILY FOR FOURTH YEAR STUDENTS

10. *Light*.—A short lecture course for students who have not taken Physics 8. A study of optical instruments, photography, spectroscopy, photometry, thermal radiation, refractometers, interference, diffraction, and polarised light.

Text-book: Robertson, *Introduction to Physical Optics*, Van Nostrand.

Reference: Jenkins and White, *Fundamentals of Physical Optics*, McGraw-Hill.

One lecture a week. 1 unit.

11. *Electricity and Magnetism*.—A course dealing primarily with the theoretical phases of electricity and magnetism, including an introduction to the electromagnetic theory and the special theory of relativity.

Text-book: Page and Adams, *Principles of Electricity*, Van Nostrand.

References: Harnwell, *Principles of Electricity and Magnetism*, McGraw-Hill; Smythe, *Static and Dynamic Electricity*, 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*, McGraw-Hill.

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*, Cambridge.

One lecture a week. 1 unit.

17. (a) *Elementary Principles of Electricity and Acoustics*.—This course is designed to aid those men enlisting in the communication and detection branches of our national defence units. It will include the applications of fundamental principles of electricity and sound to the operation and understanding of devices such as the telegraph, the telephone, the photo-cell, and sound detecting apparatus.

One lecture a week. 1 unit.

17. (b) *Optical Instruments*.—The elements of glass technology; the calculation, manufacture, and testing of optical instruments, including telescopes, binoculars, range-finders, searchlights, etc.; applications of optics in photography; the use of X-rays in radiology and metallurgy.

One lecture a week. 1 unit.

17. (c) *Applications of Hydro- and Aerodynamics*.—The course includes those branches of mechanics that are involved in a discussion of the principles of flight of aeroplanes; elementary principles of hydrodynamics and aerodynamics, with special reference to stream-lining and hull design; principles of ballistics and motion of bodies through viscous media.

One lecture a week. 1 unit.

NOTE. Courses 17 (a), (b) and (c) are open to anyone who may profit by the lectures and demonstrations. Those requiring credit for any of these courses must have taken Physics 4 and 5 and Mathematics 2.

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.

29. *Nuclear Physics*.—An introduction to modern developments in nuclear physics. Among topics treated are natural and artificial radioactivity, interactions of various radiations with matter, artificial disintegration, and cosmic rays.

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. (Session 1939-40.)

Professor: W. A. Clemens. (Session 1940-41.)

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.

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 (i) insect morphology and wing venation, or (ii) internal anatomy and histology, or (iii) 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.

1940-41

THE
FACULTY
OF
APPLIED SCIENCE

(ENGINEERING: NURSING AND HEALTH)

1940-41

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 University Entrance (Junior Matriculation) or its equivalent is required for admission to Applied Science, and no student may enter with any supplemental outstanding in University Entrance.

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, or to the Third Year in the Double Course in Arts and Science and Nursing, must be made to the Registrar on or before August 15th. Application to the Associated Hospital School of Nursing must be completed before that date.

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 because in the opinion of the Faculty it is highly desirable for students to have 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 them 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 205.

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 197.)

Master of Applied Science (M.A.Sc.). (See Page 213.)

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 189. 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 191) 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 206; 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 287. 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

For admission to the Faculty of Applied Science Chemistry I and Physics I, in University Entrance, or Junior Matriculation, are required.

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 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.

*Applied Science students are advised to take Beginners' German.

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.

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.....	242	2	.....	.....	.....
Math. 2 { Solid Geometry.....	242	.....	.....	2	.....
Math. 3 Algebra.....	242	2	.....	2	.....
Math. 4 Calculus.....	243	2	.....	2	.....
M.E. 1 Drawing 1.....	243	.....	3	.....	3
Physics 4a Mechanics.....	255	3	3	.....	.....
Physics 4b Heat.....	256	.....	.....	3	3
†Chem. 2a Qual. Analysis.....	220	1	3	1	3
C.E. 2 Surveying.....	224	Field	Work	.....	.....
C.E. 4 Graphics.....	224	.....	2	.....	2
C.E. 30 Engineering Problems.....	231	.....	4	.....	4
English 3 Composition.....	232	2	.....	2	.....
C.E. 32 General Engineering.....	231	1	.....	1	.....
*Bot. 1b General Forest Botany.....	218	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.....	191	.....	.....	.....	.....
Math. 6 Calculus.....	243	3	.....	3	.....
Math. 7 Analytical Geometry.....	243	2	.....	2	.....
§Chem. 2b Quan. Analysis.....	220	1	3	1	3
C.E. 1 Descriptive Geometry.....	223	.....	3	.....	3
Physics 5 Electricity.....	256	2	3	2	3
C.E. 31 Mechanics and Engineering Problems.....	231	2	3	2	3
C.E. 5 Mapping.....	224	.....	3	.....	3
C.E. 6 Surveying.....	224	2	.....	2	.....
Geology 1 General.....	237	2	2	2	2
†C.E. 7 Surveying.....	224	Field	Work	.....	.....
‡M.E. 2(a) Shop Work and Mechanical Drawing.....	244	Summer Term			
English 4 Technical Writing.....	232	1	.....	1	.....
*F.E. 1(c) General Forestry.....	232	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 224) immediately after the spring examinations.

‡Students entering Chemical, Electrical and Mechanical Engineering are required to take M.E. 2 and M.E. 30 (See Pages 244 and 247) 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 up 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, except that the essay is optional for students entering Fifth Year Chemical Engineering and is not required of students entering Fifth Year Geological Engineering. 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 (8½x11 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 pre-

sentation, 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 has been planned to prepare the student for the task of designing, constructing, or operating a chemical 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 year the student receives an introduction to the principles of Chemical Engineering proper, and in the fifth year the advanced part of the subject is undertaken. During these years the maximum amount of chemical training allowed by the time at the disposal of the student is given in inorganic, organic, and physical chemistry.

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.....	191	.....	.....	.....	.....
Math. 8 Applied Calculus and Differential Equations.....	243	3	.....	3	.....
Geol. 2(a) Mineralogy.....	238	2	2	.....	.....
Chem. 3 Organic.....	221	2	3	2	3
Chem. 4 Theoretical.....	221	2	3	2	3
Chem. 5 Adv. Analysis.....	221	1	6	1	6
Chemistry 6 "Introduction to Chemical Engineering".....	222	2	.....	2	.....
Physics 10 Light.....	256	1	.....	1	.....
C.E. 12 Hydraulics.....	226	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.....	191	.....	.....	.....	.....
Chem. 7 Physical.....	222	2	3	2	3
Chem. 8 Electro.....	222	2	3	2	3
Chem. 9 Adv. Organic.....	222	2	3	2	3
E.E. 1 General.....	248	2	2	2	2
Chem. 16 Chemical Engineering.....	223	3	.....	3	.....
Chemical Engineering Laboratory and Chemical Engineering Problems.....	223	6	hours	per	week
Thesis. Option—research; designing of chemical engineering equipment.....	223	6	hours	per	week

*Optional.

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.....	191	.....	.....	.....	.....
C.E. 8 Foundations.....	225	2	3	2	.....
C.E. 9 Elementary Design.....	225	2	3	2	3
C.E. 10(a) & (b) Strength of Materials.....	225	3	3	2	3
C.E. 11 Railways.....	226	2	.....	2	.....
C.E. 12(a) & (b) Hydraulics.....	226	2	3	2	3
C.E. 13 Mapping.....	227	.....	3‡	.....	3§
C.E. 14 Surveying.....	227	2	.....	2	.....
*M.E. 6 Applied Thermodynamics.....	245	2	3	2	3
*E.E. 1 Electrical Engineering.....	248	2	2	2	2
C.E. 16 Surveying.....	227	.....	Field Work	.....	.....
C.E. 28 Seminar.....	230	1	.....	1	.....
†F.E. 16 Forest Economics.....	235	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.....	191	.....	.....	.....	.....
C.E. 17 Structural Design.....	227	2	3	2	6
C.E. 18(a) Engineering Economics.....	228	2	.....	.....	.....
C.E. 18(b) Engineering Economics.....	228	.....	.....	2	.....
C.E. 19 Law—Contracts.....	228	1	.....	1	.....
C.E. 22 Municipal Engineering.....	228	2	2	2	2
C.E. 23 Highway Engineering.....	229	2	.....	2	.....
C.E. 24 Reinforced Concrete Design.....	229	2	3	.....	3
C.E. 25 Theory of Structures.....	229	2	6	.....	.....
C.E. 26 Trips.....	230	.....	Required Sat.	t.A.M.	.....
C.E. 27 Thesis.....	230	.....	3	.....	6
C.E. 28 Seminar.....	230	1	.....	1	.....
C.E. 29 Water Power Development.....	230	.....	.....	2	2

Courses for Graduate Students, see Page 231.

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.....	191	.....	.....	.....	.....
E.E. 2 Principles of D.C. Machines.....	248	2	3	2	3
E.E. 3 Principles of Alternating Currents.....	248	2		2	
E.E. 5 Electric and Magnetic Measurements and Instruments.....	249	2	.....	2	.....
Math. 8 Applied Calculus and Differential Equations.....	243	3	.....	3	.....
M.E. 4 Dynamics of Machines.....	244	2	.....	2	.....
M.E. 7 Applied Thermodynamics.....	245	3	3	3	3
C.E. 10 Strength of Materials.....	225	3	3	2	3
C.E. 12(a) and (b) Hydraulics.....	226	2	3	2	3
*M.E. 31(a) Machine Shop Practice.....	247	.....	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.....	191	.....	.....	.....	.....
E.E. 7 Electrical Machine Design.....	249	1	3	1	3
E.E. 8 Principles of Illuminating Engineering.....	249	2	.....	.....	.....
E.E. 9 Electric Power Transmission and Distribution.....	250	2	.....	2	.....
E.E. 10 Electrical Problems Course.....	250	.....	2	.....	2
E.E. 11 Electrical Communication.....	250	2	4	2	4
E.E. 12 Principles of A.C. Machines.....	250	3	4	3	4
E.E. 13 Transient Phenomena.....	250	1	.....	1	.....
M.E. 8 Steam Turbines.....	245	.....	.....	2	.....
M.E. 14 Mechanical Design.....	246	2	.....	.....	.....
M.E. 15 Prime Movers.....	246	2	.....	2	.....
*C.E. 18(a) Engineering Economics.....	228	2	.....	.....	.....
C.E. 18(b) Engineering Economics.....	228	.....	.....	2	.....

*Optional. Courses for Graduate Students. See Page 251.

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 288, 289), 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 236. 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 190), 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 191), except that Forestry 1 (General Forestry) is taken instead of Chemistry 2 (b).

FOURTH YEAR

The same as Fourth Year Civil Engineering (see Page 195), except that Forest Economics is taken instead of one of the electives E.E. 1 or M.E. 6.

FIFTH YEAR

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.....	191	.....	.....	.....	.....
F.E. 2(a) Log Scaling.....	233	1	2	.....	.....
*F.E. 2 (c) Forest Mensuration.....	233	3	2	.....	.....
F.E. 6 Forest Management.....	234	4	3	.....	.....
F.E. 7 History.....	234	2	.....	.....	.....
†F.E. 11 Milling, Products & Marketing.....	234	4	4	.....	.....
Bot. 7(a) Ecology.....	219	2	2	.....	.....
Zool. 7(a) Forest Entomology.....	259	1	2	.....	.....
F.E. 14 Seminar.....	235	1	.....	1	.....
F.E. 15 Thesis.....	235	.....	3	.....	3
F.E. 2(b) Cruising and Stumpage Appraisal.....	233	.....	.....	1	2
F.E. 5 Wood Technology.....	233	.....	.....	3	3
*†F.E. 8 Silviculture and Protection.....	234	.....	.....	4	4
*†F.E. 10 Logging Engineering.....	234	.....	.....	4	4
F.E. 13 Lumber Grading.....	235	.....	.....	1	2
Bot. 6(b) Forest Pathology.....	219	.....	.....	1	2

*Also Field Work for a total of 10 days immediately after spring examinations.
†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 186.

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.....	191	.....	.....	.....	.....
Geol. 2 Mineralogy.....	238	2	2	2	2
Geol. 4 Structural.....	239	3	.....	3	.....
Geol. 5 Regional and History of the Science.....	239	1	.....	1	.....
*Geol. 10 Field Geology.....	240	.....	.....	.....	.....
Min. 1 Metal Mining.....	251	3	.....	3	.....
Met. 5 Fire Assaying.....	253	1	5	.....	.....
Met. 1 General.....	252	2	.....	2	.....
Ore Dressing 1 General.....	254	2	.....	2	.....
†Biology 1.....	217	2	2	2	2
C.E. 13 Mapping.....	227	.....	.....	.....	3
Met. 6 Wet Assaying.....	253	.....	3	.....	3
Ore Dressing 2.....	254	.....	.....	.....	4

†Exemption will be granted those having Biology 1 to their credit.

*Two weeks' course after lectures close in Spring Term.

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.
Geol. 6 Palaeontology.....	239	2	2	2	2
Geol. 7 Petrology.....	239	2	4	2	4
Geol. 8 Economic Geology.....	240	4	.....	4	.....
Chem. 4(b) Theoretical Chemistry.....	221	2	.....	2	.....
C.E. 18 Engr. Economics (a).....	228	2	.....	2	.....
C.E. 18 Engr. Economics (b).....	228	.....	.....	2	.....
Geol. 9 Mineralography.....	240	.....	2 or 4	.....	2 or 4
*Geol. 11 Advanced Regional.....	241	3	.....	3	.....
Min. 2 Coal and Placer.....	251	2	.....	2	.....
Min. 3 Metal Mining.....	252	2	.....	2	.....
Min. 5 Surveying.....	252	1	.....	.....	.....
Met. 2 Smelting.....	253	2	.....	2	.....
Ore Dressing 2 Lab.....	254	.....	3	.....	3
Thesis.....	.....	.....	4	.....	5

*Not given 1940-41.

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.....	225	3	3	2	3
M.E. 3 Kinematics of Machines.....	244	3	2	.....	.....
M.E. 4 Dynamics of Machines.....	244	2	.....	2	.....
M.E. 5 Machine Design.....	244	.....	.....	3	2
M.E. 7 Applied Thermodynamics.....	245	3	3	3	3
M.E. 13 Physical Treatment of Metals	246	1	2	1	2
E.E. 2 and 3 Principles of DC Machines and Alternating Currents	249	4	3	4	3
C.E. 12 Hydraulics.....	226	2	3	2	3
Math 8 Applied Calculus and Differential Equations.....	243	3	.....	3	.....
M.E. 31(a) Machine Shop Practice.....	247	.....	2	.....	2
Essay.....	191	.....	.....	.....	.....

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.....	245	.....	} 4	2	} 4
M.E. 9 Internal Combustion Eng.....	245	1			
M.E. 10 Refrigeration.....	245	1			
†M.E. 11 Heating, Ventilating and Air Conditioning.....	246	2	.....	.....	.....
M.E. 12 Power Plant Design.....	246	1	3	1	3
M.E. 15 Prime Movers.....	246	2	.....	2	.....
M.E. 16 Machine Design.....	247	2	4	2	4
M.E. 17 Applied Mechanics.....	247	1	.....	1	.....
†M.E. 18 Aeronautics.....	247	.....	.....	2	.....
M.E. 19 Problems in Mech. and Elec. Eng.....	247	.....	2	.....	2
E.E. 14 Alternating Current Machinery	251	2	4	2	4
C.E. 18 (a) and (b) Engineering Economics.....	228	2	.....	2	.....
Essay.....	191	.....	.....	.....	.....
M.E. 31 (b) Machine Shop Practice.....	247	.....	2	.....	2

†Alternative subjects.

VII.-VIII. Metallurgical and Mining Engineering

Modern Mining and Metallurgy cover too large a field to offer in 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.....	191	.....	.....	.....	.....
C.E. 10 Str. of Materials.....	225	3	3	2	3
C.E. 12 Hydraulics.....	226	2	3	2	3
C.E. 13 Mapping.....	227	.....	.....	.....	3
M.E. 6 Applied Thermodynamics.....	245	2	3	2	3
Geol. 2 Mineralogy.....	238	2	2	2	2
E.E. 1 General.....	248	2	2	2	2
Min. 1 Metal Mining.....	251	3	.....	3	.....
Ore Dressing 1 General.....	254	2	.....	2	.....
Met. 1 General.....	252	2	.....	2	.....
Met. 5 Fire Assay.....	253	1	5	.....	.....
Met. 6 Wet Assay.....	253	.....	3	.....	3
Ore Dressing 2 Lab.....	254	.....	.....	.....	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.....	191	.....	.....	.....	.....
Geol. 9 Mineralography.....	240	.....	2	.....	2
C.E. 18 Engr. Economics.....	228	2	.....	2	.....
Chem. 4 Theoretical.....	221	2	3	2	3
Ore Dressing 2 Laboratory.....	254	.....	6	.....	6
Min. 3 Metal Mining.....	252	2	.....	2	.....
Met. 2 Smelting.....	253	2	.....	2	.....
Met. 3 Calculations.....	253	2	.....	2	.....
Met. 4 Laboratory.....	253	.....	9	.....	9
Met. 7 Strategic Minerals Production.....	254	1	.....	1	.....
Met. 8 Process Laboratory.....	254	.....	3	.....	3

VIII. Mining Engineering

FOURTH YEAR

As in Metallurgical Engineering. (See Page 203.)

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.....	191	.....	.....	.....	.....
Geol. 3 Petrology.....	239	2	.....	2	.....
Geol. 4 Structural.....	239	3	.....	3	.....
Geol. 8 Economics.....	240	4	.....	4	.....
C.E. 9 Element. Design.....	225	2	3	2	3
C.E. 18 Engr. Economics.....	228	2	.....	2	.....
Met. 2 Smelting.....	253	2	.....	2	.....
Ore Dressing 2 Laboratory.....	254	.....	6	.....	6
Min. 2 Coal and Placer.....	251	2	.....	2	.....
Min. 3 Metal Mining.....	252	2	.....	2	.....
Min. 4 Machinery.....	252	2	.....	2	.....
Min. 5 Surveying.....	252	1	.....	.....	.....
Min. 7 Methods.....	252	.....	.....	1	.....

Courses for Graduate Students see Page 255.

IX. Nursing and Health

The University offers an undergraduate course to students of Nursing who desire to receive a broader education than can be given by a Hospital School of Nursing alone, and who wish at the same time to prepare themselves for teaching or supervisory positions in Schools of Nursing or for Public Health Nursing Service. 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.

This combined academic and professional course is called Nursing A. (See below.)

A Double Course leading to the combined degrees of B.A. and B.A.Sc. (Nursing) is also offered. (See Double Course, Page 287.)

The University offers also, to graduate nurses, courses of one academic year, in preparation for specialized branches of nursing. The courses offered are:

Nursing B—Public Health Nursing. (Details Pages 210-213.)

Nursing C—Teaching and Supervision in Schools of Nursing. (Details Pages 210-213.)

Students of all courses in Nursing are subject to the general University regulations, and to special regulations of the Faculty of Applied Science. The special regulations concerning the Second and higher years of the Degree Courses in Nursing are included in the general outline which follows.

ADMISSION—NURSING A

Applicants for admission to the Second Year of the Combined Course in Nursing (or to the Third Year of the Double Course) must be eighteen years of age; they must have completed the work of First Year Arts, or Senior Matriculation, attaining standing in the required subjects as stated below; they must also have completed their application and must satisfy the entrance requirements of an associated hospital. Application for admission to the Second Year of the Combined Course, or to the Third Year of the Double Course, must be made to the Registrar on or before August 15th. Applicants will be notified of the acceptance or rejection of their application; accepted applicants must then make application for registration at once or they will lose their priority of acceptance.

Enrolment in the Second Year of the Course in Nursing for the Session 1940-41 is limited to 20. The Faculty reserves the right of selection and admission in accordance with the limit set; the candidates 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. (See Page 186.)

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 206 and 207, 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 (General Outline of Course)

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.

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).....	142	2	.....	2	.....
English 1(b).....	142	2	.....	2	.....
Choice of					
Latin 1.....	126				
or French 1.....	164	3	.....	3	.....
or German (Beginners').....	167				
Mathematics 1.....	159	4	.....	3	.....
Chemistry 1.....	118	3	3	3	3
Biology 1.....	111	2	2	2	2

The passing grade is 60 per cent. in Biology and Chemistry; for all other subjects a grade of 50 per cent. will be accepted. (See Page 190.)

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.....	142	3	.....	3	.....
Zoology 1.....	180	2	2	2	2
Physics A or Physics 1.....	174, 175	3	2	3	2
Psychology 1.....	172	4	.....	4	.....
Bacteriology in relation to Health and Disease.....	257	1	4	1	4
Elementary Biochemistry.....	257	.....	.....	1	1
History of Nursing.....	257	1	.....	1	.....

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 an additional 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.

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 with the Provincial Tuberculosis Division, 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.

Students 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. (See Page 192.)

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. (See Page 215.)

Certificate Courses—General Outline

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.....	257	45	
Sanitation.....	257	9	
Vital Statistics.....	257	18	
Mental Hygiene.....	257	18	
Infant Welfare.....	257	9	
Child Hygiene.....	258	12	
Public Health Organization.....	258	4	
Principles of Public Health Nursing.....	258	36	
Practice of Public Health Nursing.....	258	18	
Methods in Health Teaching.....	258	36	
Contemporary Nursing Problems.....	258	18	
Principles and Methods of Teaching.....	259	18	
Social Case Work.....	259	20	
Sociology.....	259	18	
Seminar.....	259	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.....	257	45	
Mental Hygiene.....	257	18	
Contemporary Nursing Problems.....	258	18	
Teaching in Schools of Nursing.....	258	36	
Practice Teaching in Nursing.....	258	20	
Principles of Supervision in Schools of Nursing.....	258	36	
Principles and Methods of Teaching...	259	18	
Social Case Work.....	259	20	
Sociology.....	259	18	
Electives from Nursing B, from Education, or from related Science Courses—to make up three units			
Seminar.....	259	18	
Field Work.....		8 weeks	To run alter- nately 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.

*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 Metropolitan Health Board—Dr. S. Stewart Murray, Senior Medical Health Officer; Miss M. A. McLellan, Acting Director of Public Health Nursing.

The Provincial Department of Health and Health Units at Abbotsford, Chilliwack, Duncan, Nanaimo, Saanich, and other centres.—Dr. G. F. Amyot, 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 39-42.

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 189). 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 39-42), 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 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 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.

*Special permission of the Faculty is granted only under exceptional circumstances, such as illness, or as outlined on Page 189.

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.

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 112.

3. *General Physiology*.—As in Arts. See Page 112.

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 other courses in Botany except Botany 1 (b) and the Evening Course. Partial credit (2 units)

towards Botany may be obtained through the Evening Course. (See Page 117.)

Two lectures and one period of two hours laboratory per week.
3 units.

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.

Reference readings are assigned.

Biology 1 is recommended as a preceding course.

Two lectures and two hours laboratory a week.

Lectures: 11.30, Tuesdays and Thursdays.

Laboratory: 3.30-5.30, Thursday. 3 units.

1. *(c) General Forestry*.—A study of silvics and a general survey of forest distribution and influences.

Text-book: Toumey and Korstian, *Foundation of Silviculture*, Wiley, 2nd edition.

Reference books: Mulholland, *Forest Resources of British Columbia*, B. C. Forest Service, Victoria; *A National Plan for American Forestry*, Superintendent of Documents, Washington, D. C.; Zon and Sparhawk, *Forest Resources of the World*, McGraw-Hill; various government publications.

Prerequisites: Botany 1 *(a)*, 1 *(b)*, or equivalent.

Three lectures per week. Third year. 3 units.

2. *Morphology*.—As in Arts. See Page 114.

3. *Plant Physiology*.—As in Arts. See Page 114.

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 methods.

Text-book: Eames and McDaniels, *Plant Anatomy*, McGraw-Hill.

Prerequisite: Botany 1 *(a)*.

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 (a).

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 (a) or 1 (b).

Text-books: Morton & 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.

Lectures: 9.30, Friday.

Laboratory: 9.30-12.30, Saturday. 2 units.

5. (c) *Descriptive Taxonomy*.—As in Arts. See Page 116.

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

Prerequisite: Botany 1 (a) or 1 (b).

Text-book: Hubert, *An Outline of Forest Pathology*.

One lecture and one period of two hours laboratory per week. Second Term.

Lectures: 10.30-11.30, Friday.

Laboratory: 1.30-3.30, Wednesday. 1 unit.

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 (a).

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: Toumey and Korstian, *Foundations of Silviculture upon an Ecological Basis*, Wiley; 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.

Two lectures per week during one term. Field trips and laboratory work during the session amounting to thirty hours, one period per week.

Prerequisite: Botany 1 (a) or 1 (b).

Lectures: 11.30, Monday and Friday.

Laboratory: 3.30-5.30, Monday.

2 units.

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.

Associate 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: *General College Chemistry*, Richardson and Scarlett, Holt. 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.

References: Holleman-Walker, *Text-book of Organic Chemistry*, Wiley; Desha, *Organic Chemistry*, McGraw-Hill; Lucas, *Organic Chemistry*, American Book Co.; Richter, *Organic Chemistry*, Wiley; Gatterman-Wielands, *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.

6. *Introduction to Chemical Engineering*.—In this course the elements of unit processes, such as filtration, distillation, crystallization, evaporation and drying are to be considered. Several lectures will be devoted to the problems of grinding and combustion. The lectures will be supplemented by visits to manufacturing plants in the neighbourhood.

Text-book: Badger and McCabe, *Elements of Chemical Engineering*, McGraw-Hill.

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-Chemical Principles*, 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 121.)

(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 121.)

11. *Physical Organic Chemistry*.—As in Arts. (See Page 122.)

(Given in 1941-42 and alternate years.)

12. *Colloid Chemistry*.—As in Arts. (See Page 122.)

16 (a) *Advanced Chemical Engineering Theory*.—The first term will comprise a course of study dealing with the general hydrodynamical equations for fluid flow. The thermodynamic aspect will be stressed wherever necessary. The theory of heat transfer with special reference to heat exchangers and condensers will also be considered.

The second term will be devoted to theories of diffusion processes in general. The unit processes, such as humidification, drying, extraction, and adsorption will be studied in some detail.

16. (b) *Chemical Engineering Problems and Laboratory*.—Each student must submit solutions to a list of problems dealing with the unit processes discussed in both Chemistry 6 and 16 lectures.

The laboratory work will be arranged to supplement the lectures as much as time and equipment will permit.

Text-book: Walker, Lewis, McAdams and Gilliland, *Principles of Chemical Engineering*, McGraw-Hill.

Three lectures and six hours laboratory per week.

17. *Chemical Thermodynamics*.—As in Arts. (See Page 123.)
(Given in 1941-42 and alternate years.)

18. *Advanced Inorganic Chemistry*.—As in Arts. (See Page 123.)
(Given in 1940-41 and alternate years.)

21. *Chemical Kinetics*.—As in Arts. (See Page 123.)
(Given in 1941-42 and alternate years.)

22. *Surface Chemistry*.—As in Arts. (See Page 124.)
(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.

Assistant Professor: E. S. Pretious.

Assistant Professor: Archie Peebles.

Instructor: A. Hrennikoff. (On leave of
absence, Session 1939-40.)

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.

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. Kersey.

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. Kersey.

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; American Institute of Steel Construction, *Steel Construction*, A.I.S.C.

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.

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; American Institute of Steel Construction, *Steel Construction*, A.I.S.C.

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.

Text-book: Steel, *Water Supply and Sewerage*, McGraw-Hill.

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: Steel, *Water Supply and Sewerage*, McGraw-Hill.

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. Muir.

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, characteristic 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.

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 Faculty of Applied Science. 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.

Assistant Professor: Braham G. Griffith.

Special Lecturer: Thomas G. Wright.

Honorary Lecturer: R. M. Brown.

Honorary Lecturer: J. H. Jenkins.

Special Lecturer: L. B. Dixon.

Special Lecturer: William Byers.

1. (c) *General Forestry*.—A study of silvics and a general survey of forest distribution and influences.

Text-book: Toumey and Korstian, *Foundation of Silviculture*, Wiley, 2nd edition.

Reference books: Mulholland, *Forest Resources of British Columbia*, B. C. Forest Service, Victoria; *A National Plan for American Forestry*, Superintendent of Documents, Washington, D. C.; Zon and Sparhawk, *Forest Resources of the World*, McGraw-Hill. Various government publications.

Three lectures per week. Third year.

3 units.

This course is the same as Botany 1 (c). (Page 218.)

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 ecology.

Reference readings are assigned.

Biology 1 is recommended as a preceding course.

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

This course is the same as Botany 1 (b). (Page 218.)

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. Fall Term. Fifth Year. 1 unit.

(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. Spring Term. Fifth Year. 1 unit.

(c) Measurement of growth of trees and forests. Preparation of volume, growth and yield tables.

Text-book: Bruce and Schumacher, *Forest Mensuration*, McGraw-Hill.

Three lectures and one period of two hours laboratory or field work per week. Fall Term, Fifth Year. 2 units.

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.

Three lectures and one period of three hours laboratory per week, Spring Term, Fifth Year. 2 units.

6. *Forest Management*.—Principles of forest organization and regulation of the cut; sustained yield management of forests; forest working plans; forest finance.

Text-book: Matthews, *Management of American Forests*, McGraw-Hill.

Four lectures and one period of three hours laboratory per week, Fall Term. Fifth Year. 3 units.

7. *Forest History and Legislation*.—The development of forestry in different parts of the world with special reference to British Columbia, Canada and the United States.

Two lectures per week. Fall Term. Fifth Year. 1 unit.

8. *Silviculture and Protection*.—Silviculture systems; intermediate and final cuttings; natural and artificial regeneration; forest fire control; legislation.

Text-books: Hawley, *Practice of Silviculture*, Wiley, 4th Edition; Toumey and Korstian, *Seeding and Planting in the Practice of Forestry*, Wiley, 2nd Edition; *Western Fire Fighters' Manual*, Western Forestry and Conservation Association, Portland.

Reference books: Westveld, *Applied Silviculture in the United States*, Wiley; Hawley, *Forest Protection*, Wiley. Various government publications.

Four hours lectures and one period of four hours laboratory per week, Spring Term, Fifth Year. 3 units.

10. *Logging Engineering*.—Principles and practices of logging in the chief timber regions of North America, special emphasis on the logging systems and operations in Pacific Coast forests.

Text-books: Brown, *Logging Transportation*, Wiley; 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 Principles and Practices*, Wiley; Bryant, *Logging*, Wiley, 2nd Edition; Kirkland and Brandstrom, *Selective Timber Management in the Douglas Fir Region*, U. S. Forest Service, Washington, D. C. Various articles in *The Timberman*, *B. C. Lumberman* and other journals and government publications.

Four lectures and one period of four hours laboratory or field work per week, Spring Term, Fifth Year. 3 units.

F.E. 11. *Milling, Products and Marketing*.—Manufacturing methods and problems of the lumber and other forest industries,

including pulp and paper, shingles, veneers, boxes, etc.—marketing methods, domestic consumption and export, markets in foreign countries.

Text-books: Bryant, *Lumber*, Wiley; Brown, *Timber Products and Industries*, Wiley.

Reference books: Brown, *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.

Four lectures per week and one period of four hours laboratory per week, Fall Term, Fifth Year. 3 units.

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. Spring Term. Fifth Year. 1 unit.

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. 1 unit.

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 two copies 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. 2 units.

16. *Forest Economics 1*.—Principles of forest economics; economic and social values of forests; forest resources and wood requirements; economics of wood production, consumption and distribution; forestry and land use; prices of forest products; forest taxation, forestry credit, and forest fire insurance; forestry as a private business enterprise.

Reference books: Marquis, *Economics of Private Forestry*; and numerous periodicals and publications.

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 Economic Geology: Henry C. Gunning.

Associate Professor of Mineralogy and Petrography: H. V. Warren.

Instructor: Gordon Davis.

Geology

1. *General Geology*.—This course serves as an introduction to the science of Geology, and includes the following subdivisions:

(a) *Physical Geology*, including weathering, work of the wind, ground water, streams, glaciers, the ocean and its work, the structure of the earth, earthquakes, volcanoes, igneous intrusions, metamorphism, mountains, plateaus, and ore-deposits.

Two lectures per week. First Term. Mr. Williams, Mr. Gunning, Mr. Swanson, Mr. Warren.

(b) *Laboratory Exercises in Physical Geology*, including the study and identification of the commoner minerals and rocks.

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. Gunning and assistants.

(c) *Historical Geology*, including the history of the earth and its life from the Cambrian to recent time.

Two lectures per week. Second Term. Mr. Williams.

(d) *Laboratory Exercises in Map Reading and Historical Geology* including the study of fossils, their characteristics and associations, as illustrated by their occurrence in the strata.

Two hours laboratory per week. Second Term. Mr. Williams, Mr. Davis and assistants.

Prerequisite: Matriculation Chemistry or Physics, or Chemistry 1 or Physics 1 taken either before or concurrently.

Text-book: Longwell, Knopf, Flint, Schubert, 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.

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 and assistants.

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 processes which formed them. Determinations are made entirely on hand specimens. Results to be obtained by microscopic studies of rock sections are outlined and demonstrated, but no attempt is made to instruct the student in Petrography. The course is designed primarily for students in Mining Engineering.

Prerequisites: Geology 1 and 2.

Two lectures per week. Mr. Gunning.

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.

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 of North America.

Prerequisites: Geology 1 and 2.

References: Sir Archibald Geikie, *The Founders of Geology*; Merrill, *The First One Hundred Years of American Geology*.

One lecture per week. Mr. Williams, Mr. Davis.

Lectures: 3.30-4.30, Monday.

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*; Zittel-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, 2 and 4. Geology 3 or 7 must precede or accompany this course.

Four lectures per week.

Mr. Williams, Mr. Gunning, 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 and visit localities of interest within reach of Vancouver.

References: 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.

A two week course at the close of examinations in the spring. Mr. Gunning.

11. *Advanced Regional Geology*.—A study of the geology of Canada, and of the main geological features of the continental and oceanic segments of the crust of the earth.

Prerequisite: Geology 1.

References: Young, *Geology and Economic Minerals of Canada*, Geological Survey of Canada, Economic Geology Series No. 1, 1926; Suess, *Das Antlitz der Erde*, maps and reports of various national surveys.

Three lectures per week. Mr. Williams, Mr. Gunning, Mr. Davis.

Lectures: Hours to be arranged by committee (time-table).

(Not given in 1940-41.)

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 11.

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.

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. 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.

References: 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.

26. *Mineral Deposits*.—A seminar course, supplemented by laboratory work, dealing with the character, origin and structure of mineral deposits, with emphasis on ore deposits.

Prerequisites: Geology 7 and Geology 8.

Text-book: Lindgren, *Mineral Deposits*, 4th edition, McGraw-Hill, 1933.

Reference: *Ore Deposits of the Western States*, A.I.M.E. 1933.

Two hours seminar per week and about four hours laboratory. Mr. Gunning.

Hours by arrangement.

Department of Mathematics

Professor: Daniel Buchanan.

Professor: F. S. Nowlan.

Professor: Ralph Hull.

Professor: L. Richardson.

Associate Professor: Walter H. Gage.

Assistant Professor: F. J. Brand.

Instructor: May L. Barclay.

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.

Reference books: Sokolnikoff, *Higher Mathematics for Engineers and Physicists*, McGraw-Hill; Reddick and Miller, *Advanced Mathematics for Engineers*, Wiley.

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. *Mechanical Drawing*.—Continuation of M.E. 1. Isometric and oblique projection. Auxiliary views. More advanced working drawings. Checking a drawing.

This course commences immediately upon the close of the spring examinations and continues for a period of twenty days, four hours a day, in conjunction with M.E. 30.

Required of third year students proceeding in Mechanical, Electrical and Chemical Engineering.

Text-book: Trench, *Engineering Drawing*, McGraw-Hill.

Mr. McIlroy, Mr. Vernon, Mr. Richmond, Mr. Bell.

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: Vallance, *Design of Machine Members*, McGraw-Hill; Mark's, *Mechanical Engineers' Handbook*, McGraw-Hill.

Three lectures and one two-hour drawing office period per week. Second Term. 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: Faires, *Applied Thermodynamics*, Macmillan.

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.

30. *Machine Shop Practice*.—This course is intended to give an introduction to shop practice and some practical experience in the processing of metals. It includes work on the bench, lathe, shaping machine, drill press, milling machine, lay-off and tempering.

This course commences immediately upon the close of the spring examinations and continues for a period of twenty days, four hours a day, in conjunction with M.E. 2.

Required of Third Year students proceeding in Mechanical, Electrical and Chemical Engineering.

31. (a) and (b) *Machine Shop Practice*.—A continuation of M.E. 30. Required of students in Mechanical Engineering only. 31 (a) is optional for students in Fourth Year Electrical Engineering.

GRADUATE COURSE

101. *Applied Theory of Elasticity*.—A study of the mathematical theory of elasticity as applied to various problems arising in mechanical engineering. The subjects treated include: plane stress and plane strain in rectangular and polar co-ordinates, the torsion problem, and the bending of prismatical bars.

Reference books: Timoshenko, *Theory of Elasticity*, McGraw-Hill; Southwell, *Theory of Elasticity*, Oxford University Press.

Mr. Richmond.

2 units.

Electrical Engineering

1. *Theory and Operation of Electrical Machines*.—A general course for students not specializing in Electrical or Mechanical Engineering. The course includes the theory, characteristics and applications of both D.C. and A.C. machines.

Text-book: Gray and Wallace, *Principles and Practice of Electrical Engineering*, McGraw-Hill.

Prerequisite: Physics 5.

Two lectures per week and one two-hour period per week for experimental work and problems.

Mr. Morgan.

2. *Principles of D.C. Machines*.—Electromagnetic theory. The theory, operating characteristics, efficiency and applications of direct current generators and motors.

Text-book: Langsdorf, *Principles of Direct Current Machines*, McGraw-Hill.

For Fourth Year Electrical and Mechanical students only.

Prerequisite: Physics 5.

Two lectures per week, each term.

Mr. Morgan.

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.

Two lectures per week each term. Mr. Morgan.

2 and 3 *Laboratory*.—Experimental work and problems, on D.C. machines and A.C. circuits, illustrating the theory covered in the lectures.

Text-book: *Junior Laboratory Manual*.

One three-hour period per week each term.

Mr. Morgan and assistant.

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. *Electric Power Transmission and Distribution*.—The calculation of line resistance, inductance and capacitance; steady state currents and voltages; circle diagrams; corona and insulators; transmission line design; the electrical layout of power plants, substations and distribution systems; short circuit calculations; relays; an introduction to the theory of rates.

Text-book: Woodruff, *Electric Power Transmission*, John Wiley & Sons.

Reference books: Sanderson, *Electric System Handbook*, 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 books: Glasgow, *Principles of Radio Engineering*, McGraw-Hill; Albert, *Electrical Communication*, John Wiley & Sons.

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 Communication*.—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; McIlwain and Brainard, *High Frequency Alternating Currents*, John Wiley & Sons; Olsen and Massa, *Applied Acoustics*, Blakiston's; Terman, *Measurements in Radio Engineering*, McGraw-Hill. Current Journals.

Two lectures and two laboratory periods per week. Mr. MacLeod.

Department of Mining and Metallurgy

Professor of Mining: J. M. Turnbull.

Professor of Metallurgy: Geo. A. Gillies.

Associate 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; Heyer, *Engineering Physical 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; Low-Weinig-Schoder, *Technical Methods of Ore Analysis*.

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. *Strategic Minerals Production*.—A study of methods of production of certain metals and mineral products, the importance of which is influenced by war conditions. The course includes a discussion of fundamental features of ore-buying contracts and metallurgical plant organization.

Reference books: Spurr and Wormser, *Marketing of Metals and Minerals*; Roush, *Strategic Mineral Supplies*; American Institute of Mining and Metallurgy, *Mineral Economics*; Liddell, *Handbook of Non-ferrous Metallurgy*; Current Technical and Statistical 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: A. M. Crooker.

Assistant Professor: Harold D. Smith.

Assistant Professor: Kenneth C. Mann.

Assistant Professor: George Michael Volkoff.

Lecturer: Wilbur H. Goss. (Session 1939-40.)

Lecturer: C. Rulon Jeppesen. (Session 1939-40.)

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 174.

1. *Elementary Physics*.—See Physics 1, Arts and Science, Page 175.

4. (a) *Mechanics*.—An elementary treatment of statistics, kinematics and dynamics, with particular emphasis on the working of problems. This course is given in the first half of the Second Year of Applied Science.

Text-book: Poorman, *Applied Mechanics*, McGraw-Hill, 1930 edition.

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 177.

Department of Nursing and Health

Acting Head of the Department: C. E. Dolman.

Assistant Professor: Mabel F. Gray.

Instructor: Margaret E. Kerr.

Instructor: Geraldine E. Homfray (under the Rockefeller Foundation Grant).

Lecturer: L. E. Ranta.

Part-time Lecturers:

J. S. Kitching, B.A., M.D., D.P.H. (Toronto).

Donald H. Williams, B.Sc., M.D. (Manitoba), M.S. (Minnesota).

Alfred Howard Spohn, M.B. (Toronto).

Arthur L. Crease, M.D., C.M. (McGill).

Miss J. Kilburn, R.N.

Miss Zella Collins, Diploma, Social Science Department (Toronto).

Miss Frances M. Fraser, Social Service Diploma (Brit. Col.).

Miss Mary McPhedran, Diploma, Social Service Department (Toronto).

Miss Anne Cavers, R.N., Cert. School for Graduate Nurses (McGill).

Miss Alison Reid, R.N., B.A.Sc. (Brit. Col.).

Honorary Lecturers:

W. H. Hatfield, M.B. (Toronto).

S. Stewart Murray, M.D., D.P.H. (Toronto).

G. F. Amyot, M.D., D.P.H. (Toronto), 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. Dr. Ranta.

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. Ranta, and Dr. Williams.

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 Homfray.

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. Amyot, 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 Homfray.

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 Reid.

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. (Session 1939-40.)

Professor: W. A. Clemens. (Session 1940-41.)

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. (a) *Forest Entomology.*—Insects in their relationships to forests and timber, especially in British Columbia.

Text-book: F. P. Keen, *Insect Enemies of Western Forests*, U. S. Dept. Agr. Misc. Publ. No. 273, obtainable from Supt. of Documents, Washington, D. C.

References: R. W. Doane, E. C. VanDyke, W. J. Chamberlain and H. E. Burke, *Forest Insects*, McGraw-Hill; S. A. Graham, *Principles of Forest Entomology*, Second Edition, McGraw-Hill.

One lecture and two hours laboratory per week. First Term.

1940-41

THE
FACULTY
OF
AGRICULTURE

1940-41

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 year, 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). 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

Six 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 Double Course for the Degrees of B.A. and B.S.A. (See "Double Courses.")
- (3) A One-year Occupational Course leading to a Diploma in Agriculture.
- (4) A Winter Course at the University, consisting of a Short Course in one or more of the agricultural subjects: Poultry, Horticulture, etc.
- (5) Extension Courses at different points in the Province.
- (6) 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 267-268.

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 twelve units of courses to be chosen in not less than three of the six Departments: Agronomy, Animal Husbandry, Dairying, Horticulture, Poultry Husbandry, and Agricultural Economics.

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 are required of all students. In addition, three units must be chosen from electives A and not less than 9 units from electives B and C, at least 6 of which shall be from electives B.

ELECTIVES

A	B	C
Agronomy 14	Chemistry 2	Economics 1
Animal Husbandry 15	Biology 2a and 2b	Psychology 1
Dairying 1 and 2	Bacteriology 1	Beg. German
Horticulture 13	Zoology 1	Matr. Language 1
Poultry Husbandry 12	Geology 1	Matr. Language 2
	Physics 1 or 2	History 1
	Botany 1a	
	Mathematics 2 or 3	

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. The prerequisites for graduate work include a major and minor consisting of eight and six units, respectively, of courses regularly offered in the Third and Fourth Years.

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

The candidate must satisfy the Committee on Graduate Studies that he is fitted to undertake advanced work.

4. 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.

5. 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.

6. 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.

7. 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.

- 8. (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.

9. 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.")

10. 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 twelve (12) units of credit in Agriculture in addition to Agriculture 1, 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.

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.

Department of Agricultural Economics

Professor: F. M. Clement.

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.; Patton, *Grain Growers' Co-operation in Western Canada*, Harvard University Studies.

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 Agronomy

Professor: G. G. Moe.

Professor: D. G. Laird.

Assistant: J. L. Bolton.

General Agronomy.—(Included in *Agriculture 1* in the First Year.)

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.

1½ units.

(Not offered in 1940-41.)

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.

Prerequisite: Biology 2(a).

Two lectures and one laboratory per week.

Mr. Moe. 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. First 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. 3 to 5 units.
51. (a) *Soils*.—The interaction of the physical, chemical and biological forces of the soil. Prerequisite: Agronomy 16. 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.

General Animal Husbandry.—(Included in *Agriculture 1* in the First Year.)

15. *Fundamentals of Animal Husbandry*.—An introductory course. The judging of livestock and a study of the origin, development, characteristics and adaptations of the various breeds of cattle, horses, sheep, swine and goats. Principles of breeding, selection, feeding, management and marketing. Disease problems. Students may be required to visit conveniently located farms.

Two lectures and one laboratory per week. 3 units.

17. *Animal Feeding*.—A study of feeds and their suitability to the various kinds and classes of livestock. The importance of home-grown materials. The economic and other problems involved in the feeding of all classes of livestock.

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*.—Open to all students interested in Animal Husbandry. Research and experimental problems. Preparation of reports and bulletins. Private libraries of research reports, bulletins and periodicals. Livestock advertising and sales, exhibitions, field service and promotion work. Conducted by staff in Animal Husbandry.

Three periods 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.

22. *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.

23. *Animal Breeding*.—A study of variation and inheritance in animals. Selection and mating systems for the improvement of livestock. Blood lines and pedigree construction.

Two lectures and one laboratory per week. Second Term.

1½ 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.

Instructor: Olga Okulitch.

General Dairying.—(Included in *Agriculture 1* in the First Year.)

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. Second Term.

Prerequisite: Dairying 4.

1½ units.

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: A. F. Barss.

Associate Professor: G. H. Harris.

Special Lecturer: F. E. Buck.

General Horticulture.—(Included in *Agriculture 1*, in the First Year.)

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 and related 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, in the First Year.)

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.

19. (c) *Seminar in Poultry Nutrition*.—This course comprises a study of current problems and literature in Poultry Nutrition. Students will be required to conduct biological tests with chicks.

Six hours of laboratory work per week. 1½ units.

(Open to Graduates only.)

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.

Department of English

Professor: G. G. Sedgewick.

Assistant Professor: Edmund Morrison.

SECOND YEAR

3 and 4. *Composition*.—Courses in composition especially designed to meet the needs of students in the Faculty of Agriculture, offering 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.

Three hours per week. Mr. Morrison.

3 units.

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 108-111.)

Department of Botany

Professor: A. H. Hutchinson.

(For details of courses see Pages 111-118.)

Department of Chemistry

Professor: R. H. Clark.

(For details of courses see Pages 118-124.)

Department of Civil Engineering

Professor: J. N. Finlayson.

(For details of courses see Pages 223-231.)

Department of Classics

Professor: Lemuel Robertson.

(For details of courses see Pages 124-128.)

**Department of Economics, Political Science,
and Sociology**

Professor: Henry F. Angus.

(For details of courses see Pages 130-140.)

Department of English

Professor: G. G. Sedgewick.

(For details of courses see Pages 142-146.)

Department of Geology and Geography

Professor: M. Y. Williams.

(For details of courses see Pages 146-153.)

Department of History

Professor: W. N. Sage.

(For details of courses see Pages 153-159.)

Department of Mathematics

Professor: Daniel Buchanan.

(For details of courses see Pages 159-163.)

Department of Modern Languages

Professor: D. O. Evans.

(For details of courses see Pages 163-168.)

Department of Philosophy and Psychology

Professor: H. T. J. Coleman. (Session 1939-40).

Professor: J. A. Irving. (Session 1940-41).

(For details of courses see Pages 169-174.)

Department of Physics

Professor: G. M. Shrum.

(For details of courses see Pages 174-180.)

Department of Zoology

Professor: C. McLean Fraser. (Session 1939-40).

Professor: W. A. Clemens. (Session 1940-41).

(For details of courses see Pages 180-181.)

DOUBLE COURSES

1940-41

1940-41

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, and students must fulfil all requirements in regard to standing and admission given on pages 204-206.

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. On account of time table difficulties, students must not select courses in Arts and Science that are included in the Applied Science years.

The requirements for the First and Second Years are as set forth in the Calendar for the First and Second Years of Arts (pages 78-80) 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 186.) 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 presented the language for University Entrance.

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 84) may qualify for the degree of B.S.F. by taking the Fifth Year in Forestry (see page 190).

Prerequisites: First Year, Biology 1; Second Year, Botany 1 (*a*), 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; and the following courses which are common to all Third and Fourth Year options leading to a degree in Forestry: Botany 1 (*c*) and Civil Engineering 5, in the Third Year; Forestry 16, 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 85)

may qualify for the degree of B.S.F. by taking the Fifth Year in Forestry (see Page 199).

Required Courses: In the Second Year, Botany 1 (*b*), Civil Engineering 2; in the Third Year, Botany 1 (*c*) and Civil Engineering 5; in the Fourth Year, Forestry 16.

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, Botany 1 (*b*) and Civil Engineering 2; in the Third Year, Botany 1 (*c*) and Civil Engineering 5; in the Fourth Year, Forestry 16. 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.

DOUBLE COURSE FOR THE DEGREES OF B.A. and B.S.A.

Students may so plan their courses that the degrees of Bachelor of Arts and Bachelor of Science in Agriculture may be obtained in five years of attendance at the University. The courses must be so chosen that all requirements of both Faculties are met. Students intending to qualify for the two degrees are advised to obtain the necessary forms from the Registrar's office and to have their courses approved by the Deans of the two Faculties concerned before embarking on their courses of study.

1940-41

LIST OF STUDENTS IN ATTENDANCE SESSION 1939-40

FACULTY OF ARTS AND SCIENCE

FIRST YEAR

Full Undergraduates

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Abbott, Hugh M.	Vancouver	Boyce, Kenneth	Vancouver
Affleck, Antony C.	Vancouver	Bracher, J. Noel	Vancouver
Allan, John N. M.	West Vancouver	Bradner, Frank E.	Vancouver
Amy, Godfrey P.	New Westminster	Brandon, James R.	Vancouver
Anderson, Elizabeth D.	Vancouver	Brandt, Helen K.	Vancouver
Anderson, John J.	Vancouver	Brett, Mary E.	Vancouver
Anderson, William R. W.	Vancouver	Broadhead, Ronald L.	Vancouver
Annand, J. Duff	New Westminster	Brown, Barbara E.	Vancouver
Archdekin, Roy H.	Vancouver	Brown, Betty P.	Vancouver
Armour, June C.	Prince Rupert	Brown, Edward G.	Vancouver
Armstrong, Norman H.	Vancouver	Brown, George G.	Haney
Ashby, Henry H.	Bralorne	Brown, Harry	Coghlan
Ashton, Harry E.	Vancouver	Brown, R. Pendril	Vancouver
Aszkanazy, C. Leonore	Vancouver	Brummitt, Bernice I.	Vancouver
†Aszkanazy, Elisabeth	Vancouver	Buerge, R. Oliver	Nakusp
Atherton, Ruth E.	Vancouver	Bunting, Rosamund G.	North Vancouver
Atree, Patricia W.	Vancouver	Burke, Cornelia C.	Vancouver
Auchinleck, Gilbert F.	Vancouver	Burrows, Michael	Vancouver
Avery, E. Gwendolyn	Princeton	Burton, John A.	Vancouver
Bacon, Frank C.	Vancouver	Bushell, Norman F.	Vancouver
Baillie, Alexander	Prince Rupert	Butler, L. May	Vancouver
Baker, Chester H.	Nanaimo	Caine, Geoffrey R.	Prince George
Baker, F. Bruce	Sidney	Campbell, Charles G.	Vancouver
Bakony, Edward G. J.	Vancouver	Campbell, David V.	Vancouver
Ball, Patricia E.	Vancouver	Campbell, Peter C.	Vancouver
Barlow, C. Vernon	Vancouver	Cantell, Thomas E.	New Westminster
Barlow, Frederick J.	Field	Cardinal, Eric R.	North Vancouver
Barnett, Joan R.	Vancouver	Carlile, Jack C.	Vancouver
Barrett-Lennard, Beverley	Vancouver	Carncross, Charles A.	New Westminster
Barss, Elizabeth M.	Vancouver	Carrothers, P. John G.	Vancouver
Barton, Arthur S.	Vancouver	Carter, Arthur W.	Vancouver
Barton, Dorothy F.	Chilliwack	Casselman, W. G. Bruce	Vancouver
Bayly, Lemuel J.	Chilliwack	Cavallero, Linda	Cumberland
Beale, Stanley	Vancouver	Cawley, Clarence H. R.	Salmo
Beaton, Stanley J.	Vancouver	Chambers, Stewart L.	Vancouver
Beaty, Delwyn W.	Vancouver	Chenoweth, Jocelyn D.	Vancouver
Beaumont, Elizabeth N.	Vancouver	Chestnut, R. Glenn	Vancouver
Beddome, Anne C.	Vernon	Chew, Jip P.	Vancouver
Beebe, Dorothy G.	Vancouver	Chilcott, Audrey E.	Port Coquitlam
Begert, Kathleen E.	Vancouver	Chow, Jack K.	Vancouver
Bell, A. Patricia	Vancouver	Chubb, J. Arthur	Vancouver
Bell, M. Elizabeth	Vancouver	Chutter, Philip G.	Vancouver
Bell, Maureen F.	Vancouver	Claridge, Charles A.	Vancouver
Belton, Caroline	Ioco	Clark, Johnson B.	Vancouver
Bennett, John N.	Vancouver	Clark, Kathleen D.	New Westminster
Benny, Geoffrey A.	Vancouver	Clarke, Margaret R.	Vancouver
Bentall, Robert G.	Vancouver	Clemens, Alvin B.	Nanaimo
Beveridge, E. Isabel	Vancouver	Clemens, Ann M.	Nanaimo
Bew, Norma	Vancouver	Clement, Marion E.	Vancouver
Black, John H.	Vancouver	Cleveland, Ernest A.	Vancouver
Black, Marianne I.	Vancouver	Clugston, Beatrice A.	Vancouver
Blakley, Herbert A.	Radium Hot Springs	Clyne, Norval S.	Vancouver
Blunt, Joyce E.	Nanaimo	Coburn, Robert F. M.	Vancouver
Boothe, Lillian B.	Vancouver	Cochrane, James W.	Ocean Falls
Borthwick, Roy	Vancouver	Collins, Frank A.	North Vancouver
Boulton, M. Elizabeth	Vancouver	Colquhoun, Edith M.	Vancouver
Boving, Peter A.	Vancouver	Confortin, John C.	Squamish
Bowie, Jack W.	Vancouver		

†Partial.

FACULTY OF ARTS AND SCIENCE—FIRST YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Cooke, Dewar B.	Vancouver	Glass, Robert S.	Vancouver
Cooper, Alexander C.	New Westminster	Goodwin, D. Eleanor	Vancouver
Cooper, Jessie R.	North Vancouver	Gook, Richard E.	Quesnel
Corey, Ruth	Vancouver	Gordon, George A.	Vancouver
Cormack, William T.	New Westminster	Gourlay, John L.	Vancouver
Costello, Mary J.	Vancouver	Goyer, Gertrude E.	Vancouver
Cotterall, Charles L.	Vancouver	Goyer, Margaret E.	Vancouver
Cowan, P. Robert	Vancouver	Graham, Evelyn F. M.	Vancouver
Coy, Filmer R.	Invermere	Graham, Helen B.	Merville
Crane, Gordon W.	Vancouver	Grant, William D.	Ioco
Cranston, Robert B.	Revelstoke	Gustavson, Arnold E.	Vancouver
Cromie, Peter E.	Vancouver	Halle, Isaac	Fernie
Crosby, Robert T.	Vancouver	Hall, Edna	Powell River
Cruise, G. Theodore	Vancouver	Hall, Hugh U.	Vancouver
Currie, John F.	Vancouver	Hall, J. Gordon	Vancouver
David, Ruth A.	Vancouver	Hamilton, Dorothy H.	Vancouver
Davidson, Stella W.	Cowichan Station	Hamilton, Isobel B.	North Bend
Davie, Robert G.	Vancouver	Hamilton, J. Peter	Vancouver
Daykin, Philip N.	Vancouver	Hamilton, Roy J. A.	New Westminster
DesBrisay, Mary Beth	Vancouver	Hanbury, Paul K.	Monte Lake
DesBrisay, Ruth M.	Vancouver	Handa, Roy	Vancouver
Dhalwal, Dalip S.	Port Moody	Hann, Raymond D.	Nanaimo
Dickie, Bette F.	Vancouver	Harland, William P.	Pincher Creek, Alta.
Dickson, Geoffrey A.	Vancouver	Harrison, Jack B.	Vancouver
Dickson, Ronald G.	Vancouver	Harvey, Elizabeth E.	Vancouver
Dilger, V. Vivian	Vancouver	Hasegawa, James H.	New Westminster
Dirassar, Leon G.	Zeballos	Hastings, William G.	Vancouver
Donovan, Basil G.	Vancouver	Hawkins, Mary E.	Vancouver
Dore, Burnell V.	McBride	Hayes, J. Anthony	Lake LeBarge, Y.T.
Drysdale, Norma K.	Vancouver	Haywood, Robert A.	Vancouver
Duncan, Elizabeth L.	Vancouver	Heise, Jack K.	Vancouver
Eacrett, Robert M.	Mission City	Herberts, E. David	New Westminster
Eddleston, James A.	Vancouver	Herberts, Lewis T.	New Westminster
Edwards, Daima	Chilliwack	Hicks, Mary N.	Agassiz
Ekman, Frank O.	Telkwa	Hill, Clifford J.	West Vancouver
Ellis, Hugh M.	Vancouver	Hirano, Toshio	Vancouver
Ellis, Ronald D.	Comox	Hoffman, Pearl	Vancouver
Elsdon, Walter D.	Bonnington	Holland, Kathleen A.	Vancouver
Erickson, Norma A.	Aldergrove	Hooper, Frederick H. S.	Vancouver
Fahrni, Enid P.	Vancouver	Hooson, William T.	Vancouver
Farina, Charlie	Vancouver	Horton, Kenneth G.	Vancouver
Farrell, F. Mary	Vancouver	Hotham, Geoffrey A.	Vancouver
Ferguson, Otway C.	Vancouver	Howard, Walter E.	Calgary, Alta.
Field, C. Pauline	New Westminster	Howat, D. Watson	Vancouver
Filman, Norman J.	Shanghai, China	Hudson, William H.	Vancouver
Filmer, Madge H.	Vancouver	Hume, Douglas D.	Vancouver
Fitch, H. Freeman	Vancouver	Hunter, Dorrie M.	Wenatchee, Wash.
Fitzsimmons, Hugh T.	Vancouver	Hunter, Hazel G.	Milner
Fletcher, Donald A.	Vancouver	Hunter, Sylvia J.	North Vancouver
Flynn, J. Patrick	Vancouver	Huntington, A. Ronald	Vancouver
Francis, Elizabeth J.	Steveston	Jackson, Frances C.	Vancouver
Francis, Margaret V.	Vancouver	Jenkins, Audrey	Vancouver
Fraser, W. MacMillan	Vancouver	Johnson, Esther M.	New Westminster
Frearson, Robert W.	Vancouver	Johnson, Eva C.	Vancouver
Freeman, Edmund A.	Vancouver	Johnson, E. Beverly	Vancouver
Freeman, Viva F.	Quesnel	Johnson, James A.	Wells
Frost, David W.	Vancouver	Johnson, Phyllis M.	New Westminster
Frost, Paul J.	Vancouver	Johnson, Theodore A.	Vancouver
Fuller, Frederick M.	Port Kells	Johnson, Vernon M.	Bluesky, Alta.
Galbraith, D. Ewen	Youbou	Johnston, Donald W.	Vancouver
Galbraith, John E.	Langley Prairie	Joiner, William M.	Vancouver
Gardner, Gloria E. L.	Vancouver	Jopson, Joyce R.	Vancouver
Gardner, Margaret H.	Vancouver	Jukes, Joan	Vancouver
Garrett, Dorothy E.	Vancouver	Kato, Yoichi	Vancouver
Gibson, Doreen	Qualicum Beach		
Gilmour, William A.	Vancouver		
Gitterman, Louis H.	Vancouver		

FACULTY OF ARTS AND SCIENCE—FIRST YEAR—(Continued)

Name	Home Address	Name	Home Address
Keefe, Kenneth B.	Vancouver	McBride, Kenneth G.	Nelson
Keeler, G. Mary	Brighouse	McCarthy, James J.	Vancouver
Keith, Jean M.	Chilliwack	McCarter, Donal C.	Victoria
Killas, Nick J.	Prince Rupert	McCarter, William L.	Vancouver
King, Jean M.	Steveston	McCaughie, David L.	Vancouver
King, Ralph F. B.	Burnaby	McCull-Smith, Margaret	Vancouver
Kitson, C. Edith	Vancouver	McCuaig, Elizabeth A.	Honolulu, Hawaii
Knipe, R. Bernard	Vancouver	McDiarmid, Lorna M.	North Vancouver
Langdon, J. Mark	Vancouver	McDonagh, Jack E.	Vancouver
Lansdowne, Rosemary L.	White Rock	MacDonald, Donald J.	West Summerland
Large, M. Ruth	Vancouver	McDonald, Gordon S.	Vancouver
Larsen, Margaret	Vancouver	McDonald, Ian W.	New Westminster
Lawler, LaVerne	Vancouver	Macdonald, M. Joan	Vancouver
Lawrence, William R.	Vancouver	Macdonald, Shirley	Vancouver
Lawrence, Blair G.	Vancouver	MacDonald, W. H. Kennedy	Vancouver
Lazzarin, Flavia	Quesnel	MacDonald, William J. D.	Vancouver
Leach, Gwen	New Westminster	McGonigal, Patrick J.	Vancouver
Lee, Jean-Carol	Vancouver	MacGowan, Marion O.	Vancouver
Lee, Ruth	Vancouver	McKelvey, Mary E.	Vancouver
Leedham, David A.	Vancouver	McKenzie, Eileen E.	Sidney
Lehrer, Ettie	Saskatoon, Sask.	MacKenzie, Elizabeth A.	Vancouver
Leslie, J. Patrick	Vernon	McKercher, R. John	Burnaby
Lighthall, William D.	Vancouver	McKie, Audrey	Vancouver
Lighthart, Oliver L.	Vancouver	McLachlan, Ross S.	West Summerland
Lightstone, Robert	Vancouver	McLachlan, Ruby J.	Sardis
Lipsett, C. Mary	Vancouver	McLean, Donald	Fernie
Lister, Mary H.	Vancouver	McLean, Robert E.	Vancouver
Lloyd, Moira C.	Vancouver	McLennan, John A.	Vancouver
Logan, Kenneth T.	Cowichan Station	MacLeod, Ian C.	Tofino
Long, Joseph D.	Vancouver	Meleod, J. D. Penn.	Vancouver
Lort, Marion R.	Vancouver	McLeod, Robert A.	Burnaby
Lourie, Marianne	Vancouver	McMillan, Donald G.	Port Alberni
Lyall, Nora B.	Vancouver	McNaughton, James H.	Vancouver
Lynn, James F.	Vancouver	McNeely, Charles J.	Vancouver
Mabee, Jean M.	Oliver	McNeil, Donald R.	Sidney
Mackend, Gladys B.	Vancouver	McPhail, Alix	Vancouver
Maddin, William S.	Vancouver	McPhatter, Roderick H.	Vancouver
Mann, Norah McK.	Glacier	McPhee, Maurice D.	Vancouver
Mann, William T.	Vancouver	McQueen, Barbara M.	Vancouver
Markwick, Joan I.	Grahams Landing, Arrow Lakes	McRae, M. June	Vancouver
Marsden, Adele	Vancouver	McTavish, Duncan D.	Hollyburn
Marshall, Russell H.	East Advocate, N.S.	McWilliams, Helen C.	Vancouver
Martin, Georgina M.	Vancouver	McWilliams, Robert W.	Vancouver
Martin, R. Lionel	Vancouver	Nash, Frederick H.	Terrace
Mastin, Hazel P.	Vancouver	Nation, Barbara G.	Vancouver
Mather, M. Alice	Vancouver	Neill, Mary-Gene	Vancouver
Matheson, Alexander M.	New Westminster	Nelson, Irene T.	Aldergrove
Matheson, Helen R.	Vancouver	NeMetz, Phyllis R.	Vancouver
Matheson, Ian D.	Vancouver	Newman, Barbara	Vancouver
Matsui, Yutaka	Vancouver	Newton, June	Vancouver
Meeke, A. J. Denham	Salmon Arm	Nishio, Tomi-taro	Vancouver
Mellish, Gladys M.	Vancouver	Noble, Dave A.	Vancouver
Miller, Albert J.	Vancouver	North, George A.	Vancouver
Miller, Joseph S.	Vancouver	Oliver, Joanne K.	Vancouver
Milligan, Phyllis H.	Vancouver	Olliver, Jean M.	New Westminster
Mills, Florence S.	Vancouver	Onizuka, Shigeo	Vancouver
Mitchell, Eric W.	Vancouver	Onice, Lilac L.	Chilliwack
Moe, Barbara M.	Vancouver	Orchard, E. Joyce	Vancouver
Momose, Jack K.	Vancouver	Orr, Thomas F.	Vancouver
Montagne, Joan	Vernon	Otsuki, Juko	New Westminster
Moore, William A.	Burnaby Lake	Oughtred, William T.	Chapman Camp
Morris, Jessie E.	New Westminster	Owens, E. Mary	Evelyn
Morrow, Margaret E.	Vancouver	Paisley, John K.	Vancouver
Mosher, Allison F.	Vancouver	Palmer, Russell E.	Vancouver
Moys, Margaret L.	Vancouver		
Murray, John M.	Trail		
McAdam, J. Clifton	Vancouver		

FACULTY OF ARTS AND SCIENCE—FIRST YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Parker, Joan E.	West Vancouver	Shortreed, James F.	Aldergrove
Parkinson, Eleanor	Vancouver	Simpson, John D.	Vancouver
Parsons, Terence G.	New Westminster	Sinclair, Eleanor W.	Cloverdale
Patrick, Barbara A.	Vancouver	Sinclair, Lister S.	Mahim, Bombay, India
Paul, Blanche M.	Princeton	Sinclair, Meade	Vancouver
Pearson, Carl E.	Vancouver	Sinclair, R. Elmer	Vancouver
Pearfield, Joan	Radium Hot Springs	Skelhorne, Gordon P.	Vancouver
Pedersen, Roger	Vancouver	Slater, John S.	Vancouver
Pedlow, Douglas S.	Vancouver	Slater, Mary A.	Vancouver
Pendleton, Wayne S.	Red Gap	Sleigh, E. Barry	Vancouver
Perkins, Margaret E.	Vancouver	Smith, Alexander F.	Vancouver
Pettie, George W.	Vancouver	Smith, George L.	Kimberley
Phelps, James W.	Vancouver	Smith, H. Leslie	Vancouver
Phillips, Brenda C.	Vancouver	Smith, Iris G. E.	Powell River
Phillips, David B.	Vancouver	Smith, Jack	Vancouver
Phillips, Frank A.	Telkwa	Smith, Jean M.	New Westminster
Phillips, Jack P.	New Westminster	Smithers, Lillian E.	Vancouver
Philpot, May	Burnaby	Sorenson, Marie	Prince Rupert
Physick, Morris C.	Vancouver	Southin, Eleanor W.	Princeton
Pickering, Mary G.	Vancouver	Spears, Dorothy H.	Vancouver
Pierce, W. Bruce	Vancouver	Spencer, Stanley D.	Cultus Lake
Piommer, Robert D.	Vancouver	Sproule, Walter J.	Vancouver
Polglase, W. James	Vancouver	Spry, Russell	Vancouver
Preiss, Ida E.	Woodfbre	Stavrianos, Nick	Vancouver
Prendergast, Constance	Squamish	Stead, Doris Y.	Vancouver
Price, H. Alex.	Vancouver	Steeves, Hugh D.	Vancouver
Prickett, Donald I.	Wells	Stephen, Thomas MacC.	Vancouver
Pronger, Ralph C.	Vancouver	Stevenson, Theodore K.	Vancouver
Pronger, Shirley C.	Vancouver	Stinson, James C.	Vancouver
Proud, Franklin M.	Vancouver	Stodart, Dave S.	Vancouver
Pumfrey, Margaret A.	Vancouver	Stoess, C. Taylor	Vancouver
Punter, William F. G.	Vancouver	Story, Jack W.	Vancouver
Quick, Elizabeth E.	Squamish	Street, A. Verne	Vancouver
Ralston, Donald J. C.	Vancouver	Stuart, Richard C.	Vancouver
Ravve, Abraham	Los Angeles, Calif.	Stuart, William B.	Ocean Falls
Rayner, Patricia M.	Vancouver	Summers, Josephine F.	New Westminster
Reif, Eva R.	Vancouver	Sutton, Douglas M.	Vancouver
Reilly, William H. E.	Vancouver	Sutton, Edward A. B.	Rossland
Reston, Agnes D.	Vancouver	Swan, Norman C.	Sandwich
Ridley, Eileen J.	Vancouver	Swinton, A. Hans	London, England
Ritchie, Hugh J.	Lulu Island	Swinton, William A.	Vancouver
Ritchie, Noni L.	Vancouver	Tapay, Patricia M.	Nanaimo
Rittenhouse, Betty E.	Blubber Bay	Taplin, Arthur C.	Canal Flats
Robertson, Audrey M.	Kaleden	Tatroff, Daniel P.	Vancouver
Robertson, Darwin H.	Vancouver	Temoin, Bernard C.	Vancouver
Robertson, Donald A.	Vancouver	Tennant, Lillias M.	Vancouver
Robin, Doris J.	Vancouver	Thomas, Philip J.	Vancouver
Robinson, Eric W.	Britannia Beach	Thompson, Charles H. A.	Vancouver
Robinson, Grant T.	Vancouver	Thomson, Helen	Vancouver
Robinson, William F.	Vancouver	Thornton-Trump, W. Edmond	Vancouver
Robson, Mabel G.	New Westminster	Thurber, Velma G.	Vancouver
Rogers, Patricia M.	Vancouver	Tickell, Alexander C.	Trail
Sargent, Margaret S. G.	Hazelton	Tiedje, John L.	Tadanac
Saunders, Harold L.	Invermere	Tilson, Ritchie	Vancouver
Scarlsbrick, Richard G.	Vancouver	Tindle, Muriel A.	Vancouver
Schjelderup, V. Roger	Courtenay	Toombs, E. Harold	Vancouver
Scott, A. Lorelei	Vancouver	Toyama, Mark N.	Vancouver
Scott, Beatrice M.	Vancouver	Tribe, David F.	Courtenay
Scott, H. James A.	Chilliwack	Troup, Irene J.	Vancouver
Scott, J. C. Melvin	Vancouver	Tupper, Dorothy M.	New Westminster
Scott, Norma M.	Vancouver	Turgeon, J. Albert	Prince Rupert
Seivewright, Pamela McL.	Vancouver	Twiss, Mary H.	Vancouver
Seyer, John F.	Vancouver	Ugiow, Elizabeth R.	Vancouver
Shadwell, Howard J.	Vancouver	Unthoff, John C.	Victoria
Shaw, A. John	Vancouver	Uyeda, Mariko	Vancouver
Shkwarok, William F.	Castlegar	VanRoggen, George C.	Vancouver
Sholund, Alvin L.	Kimberley		
Shore, Alan W.	Vancouver		
Shore, Albert G.	Winnipeg, Man.		

FACULTY OF ARTS AND SCIENCE—FIRST YEAR—(Continued)

Name	Home Address	Name	Home Address
Vaughan, David L.	Vancouver	Willcocks, Normand J.	Vancouver
Vivian, William P.	Vancouver	Williams, David J.	Chapman Camp
Walker, John A.	Vancouver	Wilson, George A. C.	New Westminster
Wall, Muriel N.	Vancouver	Wilson, George B.	North Vancouver
Wallace, John A. G.	Vancouver	Wilson, Hugh R.	Vancouver
Wallace, John M.	Vancouver	Wilson, Josephine R.	Vancouver
Wallace, Philip	Vancouver	Wilson, Neil L.	Vancouver
Wallis, Jean F.	Shanghai, China	Winram, Edna E.	Vancouver
Ward, Everett G.	New Westminster	Wintemute, John R.	North Vancouver
Wardroper, W. Kenneth	Cowichan Station	Witter, Beverly M.	Vancouver
Warner, Mary E.	Vancouver	Woo, Anne M.	Vancouver
Watkins, Carolyn	Vancouver	Wood, Betty Ray	Vancouver
Watson, M. Joyce	Vancouver	Wood, Hunter	Vancouver
Webber, Stuart C.	Vancouver	Wood, Juanita E.	Vancouver
Weldon, Lillian I.	Vancouver	Wood, Kathleen M.	New Westminster
Welsford, William D.	Vancouver	Woodcroft, Derek	Victoria
Welsh, Noreen I.	Vancouver	Woodcroft, Helen	Victoria
Whalen, Jim	Vancouver	Woods, John R.	Vancouver
Wheatley, Gordon H.	Vancouver	Workman, Alan B.	Fernie
White, Frances C.	Townsend, Montana	Wright, Dorothy W.	West Vancouver
White, George W.	Edmonton, Alta.	Wright, M. Marjorie	Vancouver
White, M. Velma	Eburne	Wright, Naida A.	Vancouver
White, Sadie M.	Vancouver	Wyles, Thelma J.	Vancouver
Widdess, Edward H.	Vancouver	Young, Honoree G.	Burnaby
		Younger, F. Keith	Penticton

SECOND YEAR

Full Undergraduates

Adam, James C.	Vancouver	Bulgin, M. Minta	Vancouver
Adams, John R.	Vancouver	Bunnell, Grace E.	Vancouver
Adsheed, John L.	Vancouver	Burney, Jean E.	New Westminster
Alexander, W. Douglas	Vancouver	Burris, D. Stewart	Kamloops
Almas, Dimitri	Vancouver	Caldwell, John R.	Cranbrook
Anley, Frank C.	Vancouver	Campbell, Mary I.	Vancouver
Arai, Kimimichi	New Westminster	Carey, Patricia	Vancouver
*Armour, Lloyd L.	Chapman Camp	Carlsen, Alfred E.	Vancouver
Armstrong, Jean E.	Creston	Carmichael, Herbert A.	Vancouver
Ashworth, Frances E.	Invermere	*Carson, John J.	Vancouver
Atkin, Mary F.	Vancouver	Carter, Eileen V.	Vancouver
Augustine, Kathleen	New Westminster	Chatwin, Leonard W.	Vancouver
Barrie, Edward J.	Vancouver	Chew, Elsie F.	Vancouver
*Bartlett, Phyllis L. M.	Vancouver	Christie, Hugh A. S.	Vancouver
Barwick, Evelyn B.	Nelson	*Christopherson, Charles J.	Vancouver
Beaumont, Leys M.	Vancouver	Ciccone, Leo D.	Vancouver
Bell, G. Douglas	Vancouver	*Clark, Duncan J.	Vancouver
Bell, Marjorie	Vancouver	Clarke, Chummer B.	Vancouver
*Bell, Roy G.	Winnipeg, Man.	*Clery, Patrick M.	Vancouver
Bertram, Francis E.	Vancouver	Cleveland, E. M. Donald	Vancouver
*Bingham, Alfred E.	Vancouver	Clugston, Jean E.	Vancouver
Bjarnason, Val	Vancouver	*Coleman, William A.	Vancouver
Blezard, Roy J.	Kimberley	Collins, Thomas LeG.	Vancouver
Bloom, Martha M.	Sointula	Collyer, James H.	Cloverdale
*Bonnell, Ronald R.	Victoria	Corbould, Betty H.	Kamloops
Bonner, Robert W.	Vancouver	Cote, Paul T.	Vancouver
Bonutto, Alfred L.	Trail	*Coutts, James W.	New Westminster
Bowie, James L.	Vancouver	Cox, Jane E.	Rossland
*Boyd, Mary E.	Vancouver	Craig, Charles E.	Vancouver
Brayshaw, T. Christopher	Vernon	Crawford, John A.	Vancouver
*Brett, Cecil C.	Vancouver	Crist, Vivian E.	Matsqui
Brown, Ellen L.	Vancouver	Crone, Thomas H.	Vancouver
*Brown, Florence M.	Cloverdale	Crute, Arthur H.	North Vancouver
Brown, Irene R.	Vancouver	Cunningham, Margaret A.	Vancouver
Brown, R. Keith	Langford	*Currie, Franklin K.	New Westminster
Brownell, J. Ross	Vancouver		

*Conditioned.

†Partial.

FACULTY OF ARTS AND SCIENCE—SECOND YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Curry, Robert M.	Vancouver	Hammond, Paul L.	Vancouver
Curwen, Guy R. L.	Chilliwack	Hanson, Don McK.	New Westminster
Dallamore, Verne H.	New Westminster	Harkley, Gerry	Vancouver
Darby, James L.	Vancouver	Harry, Kenneth F.	Port Hammond
Darling, Denise	Vancouver	Hawkins, Dorothy I.	Vancouver
Darling, M. Kathleen	Vancouver	*Hebb, Elizabeth	Vancouver
*Davies, Evann	Vancouver	*Henderson, Doreen	Vancouver
Daykin, Victor A.	Vancouver	Hicks, John B.	Vancouver
*Dear, Wallace	Brighouse	*Hirschberg, Norman	Vancouver
Dewdney, Edgar	Pentiction	Hitchcock, John H.	Vancouver
Docker, Geraldine P.	Invermere	*Hoggan, Isabel	Vancouver
Donaldson, William	Vancouver	Holder, Ronald M.	Vancouver
*Donnelly, Charles W.	Vancouver	*Holland, Arthur G.	Nanaimo
Dryden, Earl	Vancouver	Holmes, G. Alice	Vancouver
Duncan, Donald G.	Port Alberni	Hood, James A.	Vancouver
Dunlop, George L.	Victoria	Horne, Harry J.	New Westminster
Eaton, Arthur R.	Vancouver	House, Frederick W.	Vancouver
Eckardt, Jean	Vancouver	*Howieson, Margaret	South Fort George
Edmonds, David F. D.	Vancouver	Hoy, Arthur F.	Vancouver
Eldridge, Kenneth A.	Vancouver	Hughes, P. Elizabeth	Pentiction
Elefthery, Demetrie G.	Vancouver	Hurst, Alan	Vancouver
Elliott, Albert H.	Dawson, Y.T.	James, Douglas	Vancouver
Elliott, Frederick N.	Vancouver	Jeffries, James G.	Vancouver
Ellis, David W.	Vancouver	Johnson, Shirley H.	Wells
Ellis, Dorothy I.	Vancouver	*Johnson, Victor R. L.	Hollyburn
Ellis, Jesslyn	Vancouver	Johnston, Elisabeth	Vancouver
Ellis, Phyllis B.	Vancouver	Johnston, Shirley K.	Vancouver
Ellis, Robert L.	Vancouver	Johnston, W. G. Finlay	Nanaimo
Enwright, John J.	North Vancouver	Jones, Audrey L.	New Westminster
Evans, Margaret	Trail	Jones, Michael	Eburne
Evans, Wilford G.	Summerland	*Kapak, William P.	Nelson
Ewing, J. Kenneth	Vernon	*Keith, Kenneth L.	Vancouver
Ewing, Margaret L.	Vancouver	*Kenmuir, R. Campbell	Vancouver
Farina, Alfred J.	Vancouver	Kenny, Wanda	Vancouver
Ferguson, William C.	Vancouver	Kidd, James McI.	Vancouver
Fierheller, Gordon M.	Vancouver	Killip, Grace W.	Vancouver
Finch, Marguerite L.	Pentiction	Kirkpatrick, M. Elizabeth	Nelson
*Finlay, John G.	Vancouver	Korsch, Leonard S.	Vancouver
Finlayson, Anna Ruth	Vancouver	Krausse, Walter	Steveston
*Fisher, Harold E. B.	Prince Rupert	Lamb, Thomas A.	Vancouver
Fleming, Kelvin O.	Vancouver	Lang, Benjamin J.	Vancouver
Foster, Leo W.	Nelson	Lapp, Gustavus S.	Redcliff, Alta.
Fothergill, Amy H.	Vancouver	Larsen, Anthon A.	Cloverdale
Fournier, Lionel J.	Pincher Creek, Alta.	Leacy, Frank H.	Victoria
Fowle, C. David	Vernon	LeBlanc, Emile R.	Rosedale, Alta.
Fowler, Frances M.	New Westminster	Lennie, Doris C.	Vancouver
Galloway, John G.	Duncan	Lennie, Margaret L.	Vancouver
*Gardiner, William M.	Vancouver	Lighthouse, Ralph	Vancouver
Gardner, Alan	Calgary, Alta.	Lind, Lorne O.	Vancouver
George, Margaret S.	Vancouver	Lindsay, William K.	Vancouver
Glen, Mary E.	Vancouver	Livingston, Donald A.	Vancouver
Goldman, Florence R.	Edmonton, Alta.	Loffmark, Ralph R.	Chase
Graham, Aileen F.	Victoria	Long, Charles F.	Vancouver
Gray, Wallace G.	North Vancouver	Long, Elizabeth G.	Vancouver
Greene, T. Ernest	Vancouver	Lyle, Donald F. H.	Vancouver
Grimble, Wilfred G.	Vancouver	Mahood, Brian H.	Chilliwack
Gross, Douglas H.	Vancouver	*Maloney, Douglas W.	Vancouver
Gross, Edward	Vancouver	*Mannix, Luella	Vancouver
Guichon, Urban J.	Quilchena	*Mare, Dorothy P.	Vancouver
*Gunn, J. Struthers	Vancouver	Margeson, John M. R.	Trail
Gusola, Gloria J.	Nanaimo	Mark, Malcolm A.	Port Hope, Ont.
Hackney, Amy L.	Rossland	Marks, Benjamin A.	St. Louis, Mo.
Haggart, Margaret M.	Vancouver	*Matheson, Claudia	Vancouver
Hall, H. Kenneth	Vancouver	*Mathews, Paul R.	Wadsley
Hall, Ormonde J.	Vancouver	*Mathews, William W.	Vancouver
Hamilton, Beryl	Vancouver	Mathieson, John R.	Vancouver
Hammond, Gwendolin M.	Vancouver	Matthew, Beverley R.	Vancouver
		Melvin, James T.	Vancouver

*Conditioned.

FACULTY OF ARTS AND SCIENCE—SECOND YEAR—(Continued)

Name	Home Address	Name	Home Address
Menchions, Robert G.	Vancouver	Nichols, David R.	Vancouver
Menzies, M. Albert	Vancouver	Nicholson, Lois A.	Vancouver
Meredith, Olive M.	Vancouver	Nissen, Hansi	Vancouver
Meredith, Thomas W.	Vancouver	Noguchi, Kiichi	Vancouver
*Miller, William F.	Vancouver	Nose, Roy H.	Vancouver
Mitchell, Ardis L.	Vancouver	*Oastler, John W.	Vancouver
Monahan, Arthur R.	Vancouver	O'Dynsky, Peter G.	Edmonton, Alta.
Moran, James P.	Mt. Lehman	Ogilvie, Alfred L.	Vancouver
Morris, Dorothy R. A.	New Westminster	Okuno, Shigekazu	Vancouver
Morris, Joan I.	North Vancouver	Osler, Thomas R.	Comox
Morris, Robert A.	North Vancouver	Oughton, John M.	Vancouver
Morton, Betty H.	New Westminster	Quimette, William M.	Vancouver
Moxon, John O.	Vancouver	*Painter, Joan M.	Campbell River
Moyls, Amy C.	Vancouver	*Pallas, Thomas E.	Vancouver
Muir, Elizabeth A.	Vancouver	Palmer, Helen B.	Creston
Mullett, Lorne R.	Vancouver	Palsson, A. Oscar	Vancouver
Munro, Elspeth	Vancouver	Parkinson, Robert H.	Vancouver
Murdoch, A. Jane M.	Vancouver	Paton, Archibald T.	Rosedale
Murphy, Marion E.	Vancouver	Paul, Rachel M.	Vancouver
Murray, Robert N.	Yahk	Pearse, Allen F.	North Vancouver
Murray, W. James	West Vancouver	Perry, Lorne G.	West Summerland
McBride, W. Edward	Vancouver	Phillips, Mary E.	Vancouver
McBurney, Samuel L.	Langley Prairie	Pickin, Ruth	Vancouver
McCarthy, M. Frances	Campbell River	*Pidgeon, Edward	Vancouver
McCarty, Mary S.	Revelstoke	Pon, Lemuel	Vancouver
McClory, Margaret I.	New Westminster	*Porter, Robert K.	Vancouver
McCormick, Elizabeth M.	Vancouver	*Potts, B. Donald	New Westminster
*McDiarmid, Betty M.	Vancouver	Poulton, Sidney A.	Britannia Beach
*MacDonald, Angus I.	Vancouver	Priest, Jack	Vancouver
MacDonald, Helen M.	Nanaimo	Prince, Maurice S.	Vancouver
Macdonald, John L.	Vancouver	Prowse, D. Jean	Nanaimo
McDonell, Dorothy M.	Vancouver	Rader, Ines J.	Vancouver
McEachern, Florence I.	Coalmont	Rees, Harvey F.	Vancouver
McEwan, R. Roy	Vancouver	Richardson, John M.	Hollyburn
McEwan, William R.	Vancouver	*Rife, Mildred A.	Smithers
Macfarlane, Gordon B.	Vancouver	Rivers, David E.	Vancouver
*McGhee, William P. T.	Port Alice	Robertson, Jean A.	Vancouver
McGregor, M. Eileen	Vancouver	Robinson, Doramay	New Westminster
McGuire, Michael K.	Vernon	Robinson, Geoffrey C.	Vancouver
MacIntosh, Audrey MacR.	New Westminster	Rome, Alexander H.	Vancouver
McIntyre, Berenice C.	Canora, Sask.	Rose, Robert H. M.	Vancouver
McKay, Donald M.	Vancouver	Ross, R. Gordon	Nanaimo
McKay, Sheila T.	Peachland	Rowell, Florence V.	Vancouver
McKee, Jean MacK.	Vancouver	Ruardi-Wichers, Maria W.	Vancouver
MacKenzie, Roderick D.	Vancouver	Rumball, Dale L.	West Summerland
McKinlay, John	Vancouver	Ryan, Doreen E.	Vancouver
McLagan, Muriel G.	Vancouver	Ryan, John G.	Nanaimo
Maclean, Charles A.	Vancouver	Salt, Lionel H.	Vancouver
McLean-Bell, Janet M. G.	North Vancouver	Sasaki, Frederick Y.	Vancouver
McLellan, John K.	Vancouver	*Schonwald, Harry	Eburne
McLeod, R. Raymond	Rossland	Selkirk, Lorris E. N.	Tranquille
*McLorg, Mary A.	Vancouver	Shannon, Robert J.	Oliver
McMahon, M. Patricia	Vancouver	Sheeley, Ralph G. H.	Mission City
McMaster, William J.	Vancouver	*Shewan, Robert G. H.	New Westminster
McMichael, Gladys E.	Vancouver	Shimo-Takahara, Katherine S.	Vancouver
McMillan, Jack L.	Vancouver	Shinobu, Roy R.	Vancouver
*McMurtrie, Enid C.	Montreal, Que.	Shiozaki, D. Fumiaki	Vancouver
MacPhee, Craig	Vancouver	Shortreed, Grace	Burnaby
McPherson, Douglas C.	Vancouver	Sillers, Jean E. M.	Stowles, Sask.
MacQuarrie, Alexander B.	Vancouver	Singh, Ranjit	New Westminster
McQueen, Donald R.	Vancouver	Skelding, Haddon	Vancouver
Namba, Akira	Haney	Skinner, Louise McM.	Vancouver
Naylor, Joseph	Prince Rupert	Sleath, G. Edward	New Westminster
Neil, Kingsley C.	Vancouver	Small, Fred	Burns Lake
		Smith, Barbara E.	Vancouver
		*Snyder, Russell P.	West Vancouver
		Stamatis, Dorothy M.	Vancouver

*Conditioned.

FACULTY OF ARTS AND SCIENCE—SECOND YEAR—(Continued)

Name	Home Address	Name	Home Address
Stamatis, George	Vancouver	Venini, Mary J.	Vancouver
*Steeves, Irene S.	Port Alberni	Vernon, E. Kenneth	Hollyburn
*Stewart, Hugh MacL.	Vancouver	Walker, Douglas L.	New Westminster
*Stewart, William E.	Vancouver	*Wallace, Frank J.	Vancouver
Sturdy, Donald D.	Vancouver	Wallace, Gordon G.	Vancouver
Sutherland, Ernest J.	Vancouver	Wallace, Jessie M.	Powell River
*Sutherland, G. Bonar	Summerland	Wallace, W. Spencer C.	New Westminster
Swoboda, Joseph S.	Matsqui	*Walling, Oliver J.	Burnaby
Takimoto, Kimiko	Vancouver	Warrack, Beryl E.	Ladner
Teagle, Ernest E.	Vancouver	*Wate, William S.	Vancouver
Teagle, Mary Ann	Cleveland, Ohio	Watts, Mildred F.	Ladner
Thomas, G. Philip	Vancouver	Weaver, William A.	Vancouver
Thomas, J. P. Wallace	Vancouver	Webb, Eva	New Westminster
Thompson, Joan C.	Vancouver	Weddon, Margaret I.	Vancouver
Thomson, Dorothy	Vancouver	Wells, A. Earl	Penticton
Thomson, Frances B.	Vancouver	Westby, S. Monica	Vancouver
Thorstenson, Roy F.	Floods	Westwood, Mary J.	Vancouver
Thurston, Audrey E.	Chilliwack	Williams, Lawrence M.	Vancouver
Tompkins, Dorothea M.	Calgary, Alta.	Willis, Thomas G.	Keremeos
*Tornroos, Alfred H.	Vancouver	*Wilson, Walter T.	Chilliwack
*Touhey, William B.	Britannia Beach	Wismer, Shirley	Vancouver
Townsend, John A.	Vancouver	*Wood, Gerald R.	Vancouver
*Tuck, Montague D.	Vancouver	Woodworth, Mary E.	Vancouver
Tuddenham, Norman G.	Vancouver	Wuest, Walter E. L.	Stettler, Alta.
*Turley, Frank M.	Victoria	Yamashita, George S.	Vancouver
Tweed, Lorna G.	Vancouver	Yates, R. S. Joy	Vancouver
Underhill, Anne B.	Vancouver	Yip, Cecil E.	Vancouver
Urquhart, Alexander N.	Vancouver	Young, Thomas McL.	West Summerland
Uter, Jack	Vancouver	Zack, Jack	New Westminster
Vandt, David	Vancouver		
*Varty, Margaret	Turtleford, Sask.		

THIRD YEAR

Full Undergraduates

*Allan, John A.	Victoria	*Campbell, William E.	West Vancouver
Allan, William M.	Victoria	Carr, Nancy	Vancouver
Anderson, Jack McG.	Vancouver	Carter, Joyce G.	Vancouver
*Angus, Milton W.	Vancouver	Cavers, James K.	Vancouver
Archibald, Douglas	North Vancouver	Charlton, William J.	Vancouver
Ashby, M. Joan	Harrop	Child, Colin G.	West Vancouver
Badger, Elizabeth McN.	Vancouver	Christie, R. George	Royston
Balfour, Elizabeth M.	Vancouver	Clark, E. Jean	Trail
Ball, Enid D.	Penticton	Clark, W. Gilmour	Silverdale
Barclay, William R.	Vancouver	Cliff, Harold N.	Vancouver
Barnett, Margery L.	Vancouver	Cline, Richard E.	Vancouver
Barton, Norman	Vancouver	*Coady, Teresa J.	Vancouver
Beale, Mary L.	Vancouver	Colledge, William W.	Vancouver
Bennett, Norman T.	Vancouver	Colwell, Bryan C.	Port Simpson
Berton, Pierre F.	Victoria	Combolos, Theodora	Vancouver
Bibbs, Patricia G.	Vancouver	*Cools, Evelyn M.	Okanagan Centre
†Bingham, William J.	Vancouver	*Cooper, William D.	Calgary, Alta.
Bishop, Harry E.	Vancouver	Cowan, T. Archie	Vancouver
Bolduc, Betty D.	Vancouver	Crute, Margaret C.	North Vancouver
Boyd, Annetta McT.	Vancouver	Cunningham, David K.	Victoria
Brown, Victoria J.	Vancouver	*Cushing, Jean L.	West Vancouver
Browne, Edith M.	Vancouver	Daniels, Dorothy M.	New Westminster
Bruce, Joan I.	Vancouver	†Dashwood-Jones, Edmund	New Westminster
Bruce, Nancy L.	Vancouver	Daunt, Acton	New Westminster
Bryan, David B.	Lynn Creek	Dearing, Ina	Burnaby
Buckland, Donald C.	Vancouver	Delany, Austin E.	Vancouver
Burgess, Margaret A.	Vancouver	Dellert, Gunhild H.	Kimberley
Burnett, Catharine L.	Vancouver	Desjardins, Pit U.	Vancouver
Butcher, Alfred G.	Vancouver		
Butters, M. Elizabeth	Vancouver		
Caldwell, I. Frances	North Vancouver		

*Conditioned.

†Partial.

FACULTY OF ARTS AND SCIENCE—THIRD YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Devlin, Budd J.	Vancouver	Lamont-Havers, Ronald W.	Vancouver
Dobson, G. Norma	Vancouver	Lane, George	North Vancouver
Dorchester, John E. C.	West Vancouver	Laronde, Harry D.	Crescent
*Drysdale, Alistair J.	Vancouver	*Lepsoe, Gunnar	Tadanac
Duncan, Marjorie E.	Vancouver	Lowe, Margaret	Victoria
Dunlop, Elizabeth	Vancouver	Mackie, William H.	Vancouver
*Eberts, James M.	Victoria	Mainguy, James W.	Duncan
*Emerson, Bruce E.	Vancouver	Manders, Ernest C.	Vancouver
English, Moira L.	Vancouver	Marchanton, Eileen O.	Vancouver
*Evans, Kathleen E.	Vancouver	Margetts, Edward L.	Trail
Evans, Maureen E.	Colquitz	Marples, Edward G.	Invermere
*Fairbank, Ethel	Harrop	Martin, Nancy B.	Vancouver
Fairleigh, Constance M.	Vancouver	Mattu, Ranjit S.	Vancouver
*Ferries, Beulah E.	Ninga, Man.	*Meighen, Molly	Kamloops
Filmer-Bennett, Gordon	Vancouver	Meredith, John R.	Victoria
*Fliteau, John F.	Calgary, Alta.	Metford, Lionel J. S.	Salmon Arm
*Finlayson, Jean K.	Okanagan Landing	Middleton, Frederick T.	Vancouver
Fleishman, Neil M.	Vancouver	Milson, Douglas D.	Vancouver
Fletcher, Johnson K.	Hatzic	Momose, Kiyooki C.	Vancouver
Poster, Raymond E.	Vancouver	Morris, Joyce K.	Penticton
Fouks, Arthur	Vancouver	Morris, Margaret C.	New Westminster
Freeman, Victor J.	Vancouver	Munro, Marjory H.	Marigold
Fretwell, Harold R.	Vancouver	*McCallum, Norma R.	Vancouver
*Frith, Austin F.	Vancouver	McCammon, Dorothy	Burnaby
*Frith, Norma C.	Vancouver	*McCartney, Dan	Yahk
Fulton, Rupert	Prince Rupert	McClellan, Frances A.	Vancouver
*Gardiner, Valerie	Vancouver	*McCorkell, Beverly G.	Vancouver
*Gathercole, Patricia M.	Vancouver	McCully, Dorothy A.	Moose Jaw, Sask.
Gaudin, Stanley D.	Toronto, Ont.	MacDermot, Derek H. A.	Vancouver
Gillespie, Wallace P.	North Vancouver	MacDonald, John C.	Victoria
*Gillis, Sheila C.	Merritt	Macdonald, Margaret H.	Nanaimo
Glen, John E.	Vancouver	McDonnell, Eileen J.	Vancouver
Glen, William R.	Vancouver	McDowell, Thomas A.	Vancouver
Grace, Alice M.	Vancouver	McGregor, N. Roy	Vancouver
Graves, Marie F.	Trail	MacInnes, G. Elisabeth	North Vancouver
Gray, Gordon K.	Vancouver	MacKay, Hector R.	Vancouver
Gray, R. Hampton	Nelson	McKay, Katherine M.	Vancouver
*Hamilton, W. Reg.	West Vancouver	MacKenzie, A. A. Jean	Vancouver
*Hardwick, Beatrice	Eburne	MacKenzie, Verna C.	Vancouver
Harmer, James C.	Vancouver	McKinnon, Elaine K.	Vancouver
Hawkes, Arthur S.	Victoria	*McLeod, Ellis L.	Vancouver
*Henderson, James	Vancouver	*McMorran, A. Stewart	Vancouver
Henderson, M. Elizabeth P.	Cloverdale	McRae, Norman A.	Vancouver
*Henry, John M.	Vancouver	Nash, Andrew J.	Vancouver
*Herd, Ben C.	New Westminster	Newby, M. Eileen	Vancouver
Hewitt, Gordon B.	Vancouver	Nichols, Alva E.	Vancouver
Heyer, E. Ruth	Vancouver	Nicol, Eric P.	Vancouver
*Higgins, Mary P.	Victoria	Nikaido, Harry	Vancouver
Hird, Dorothy M.	Vancouver	Nowlan, Helen L.	Vancouver
Hoolley, E. Eileen	Vancouver	Oldfield, H. J. Herbert	Royal Oak
*Hopwood, Victor G.	Vancouver	Osborne, William M.	Medicine Hat, Alta.
*Howard, Gerald V.	Burnaby	*Pallas, Theodore	Vancouver
Humfrey, Frances E.	Vancouver	Parizeau, Paul H. D.	Victoria
Hutchinson, G. Ruth	Vancouver	Parsons, Leslie S.	North Vancouver
Hyslop, Mary L.	Vancouver	*Physick, Arthur T. J.	Vancouver
Izen, Benjamin	Vancouver	Pickering, Eunice E.	Vancouver
Jackson, Roy V.	Creston	Primrose, Neil	Vancouver
Johnston, Douglas T.	Vancouver	Proven, Anna M.	Vancouver
Kato, Kiyoshi	Vancouver	Pullen, Mary E. J.	Vancouver
Kawaguchi, Hiroshi	Cumberland	Purdy, James E.	Victoria
Kemper, F. Dean	Britannia Beach	Reifel, Audrey M.	Vancouver
Kerr, Donald P.	Vancouver	Richards, Basil T.	Victoria
Kilbank, Sidney C.	Vancouver	Riddell, Marjorie E.	Keewatin, Ont.
Kloepfer, Jacqueline	Vancouver	Ridland, Margaret E.	New Westminster
Knowles, Alfred P.	Grand Forks		

*Conditioned.

FACULTY OF ARTS AND SCIENCE—THIRD YEAR—(Continued)

Name	Home Address	Name	Home Address
Ritchie, David M.	Vancouver	*Trenholme, Amy V.	Vancouver
Robertson, W. Alan	New Westminster	*Turnill, Eric S.	Vancouver
Robinson, Thomas J.	New Westminster	*Twiss, Mildred A.	Vancouver
Robson, Thomas C.	West Vancouver	Usher, Marjorie V.	Vancouver
Roddan, Andrew	Vancouver	*Vance, Robert A.	Upper Lynn
Rudkin, Wilfred A.	Vancouver	Vesterback, Brita H.	Aldergrove
Sage, F. Margaret	Vancouver	†Walker, F. Margaret	Vancouver
Schofield, Mary-Lenore	Vancouver	Walker, Janet C.	Haney
*Schuthe, George M.	Vancouver	Wallace, A. M. Frances	Victoria
*Scott, Hazel D.	Vancouver	Warden, Vida M.	Vancouver
Scott, Robert W.	Sardis	Warne, Hortense J.	Vancouver
Seldon, Ruth McL.	Vancouver	Watanabe, Satoru	Vancouver
Semple, Robert E.	Vancouver	Watt, Douglas C.	Hollyburn
Shannon, Barbara	Vancouver	*Webb, Frances E.	Vancouver
Sheffield, J. Owen	Vancouver	Webber, Patricia M.	Victoria
†Sherman, Ruth E.	Victoria	*Weldon, Charles C.	Grenfell, Sask.
Sherwood, Clare T.	Vancouver	Weldon, Josephine W.	Vancouver
Shimo-Takahara, George	Vancouver	Wellington, William G.	Vancouver
Sloan, W. Russell	Kelowna	*West, John G.	Vancouver
Smith, Nancy MacK.	Vancouver	Westlake, Dorothy	Taber, Alta.
Southin, Adrienne	Vancouver	White, Barbara M.	Vancouver
Stewart, Elizabeth J.	Vancouver	Whyte, James	Northfield
Straight, Byron W.	Vancouver	*Williams, Tom C.	Vancouver
*Straight, Leland R.	Vancouver	Wilson, Richard A.	Vancouver
Takeda, Hiroshi	Woodfibre	Wilson, Ruth P.	Vancouver
Thomas, M. Elizabeth	Vancouver	Wilson, William A.	Vancouver
Thomson, Jean I.	Kimberley	*Winslow, Barbara P.	Victoria
Thomson, Vivian D.	Vancouver	Wolfe, Pierre M.	Shanghai, China
Todd, Douglas	Vancouver	Woodside, Lloyd A.	Vancouver
*Tolmie, William T.	Vancouver	Worthing, A. G. Margaret	Woodlands
Tonks, David B.	Grand Forks	Worthington, Elizabeth L.	Vancouver
		Yamada, Fujiyoshi	Vancouver

COMMERCE

Aoki, Tetsuo	Vancouver	Lumsden, Harold D.	Vancouver
Armstrong, E. Geraldine	Vancouver	McArthur, James A.	Victoria
Bain, Archibald C.	Vancouver	McEwen, Jack H.	Vancouver
Byers, Archie McA.	Vancouver	MacFayden, R. Duncan	Vancouver
Cameron, J. Griffith	Victoria	McKee, George E.	Vancouver
Chan-Kent, Robert	Vancouver	MacRae, Alex. J.	Caulfield
Clark, Robert M.	Vancouver	McTavish, Peter J.	Vancouver
Cuthbert, Grace I. Webster's Corner		Nation, George H.	Vancouver
Dale, Harold E.	Vancouver	Otton, S. Douglas	Leamington, Ont.
Davis, Mervyn	Vancouver	Pendleton, Frank H.	Red Gap
desBrisay, Helene	Vancouver	Powell, George E.	Summerland
Gitterman, Sidney L.	Vancouver	Rita, F. Joseph	Vancouver
Gordon, Hugh W.	Shanghai, China	Ross, Lloyd G.	Aldergrove
Harvey, Ernest C.	Vancouver	Sanmiya, Tatsuo	Vancouver
Hayward, Chester G.	Kamloops	Tanabe, Luke Y.	Vancouver
Hutchison, George T.	Vancouver	Townsend, Eric A.	Gordon Head
Kennedy, Ernest F.	Vancouver	VanHouten, C. William	Vancouver
Kirby, George H.	Nelson	Wiggs, Frank R.	Vancouver
Livingston, Gordon A.	Vancouver	Williams, John H.	Victoria
Logan, W. Gordon	Vancouver		

FOURTH YEAR

Full Undergraduates

Abel, M. Beatrice	Vancouver	Avis, Barbara L.	Vancouver
Adamson, Penelope R.	Victoria	Baker, Donald C. B.	Vancouver
Alexander, Ernest A.	Vancouver	Baker-Fleck, Elizabeth	Vancouver
Alexander, Margaret H.	Vancouver	Barton, Edgar C.	Vancouver
Anderson, Dorothy V.	Upper Sumas	Barton, William H.	Vancouver
Anderson, Violet J.	Vancouver	Bazeley, W. Lawrence	Vancouver
apRoberts, Robert P.	Vancouver	Beach, Albert M.	Vancouver

*Conditioned.

†Partial.

FACULTY OF ARTS AND SCIENCE—FOURTH YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
*Bennett, Gordon J.	Capilano	Goddard, Ernest A.	Ocean Falls
Beresford, H. W. Dudley	Winnipeg, Man.	Grand, William H.	Chilliwack
Bescoby, Hazel-Jean	Vancouver	Gray, Leslie T.	Trail
Birmingham, Verna E.	Vancouver	Gwyn, Alan S.	Duncan
Birnie, Elizabeth H.	Vancouver	Haines, A. Roy	Duncan
Bjarnason, Emil G.	Vancouver	*Halcrow, James Y.	Penticton
Boardman, Harold	Kimberley	Hall, Katherine U.	Vancouver
Booth, Kenneth G.	Vancouver	Hammett, Joseph F.	Eburne
Borelli, James V.	Fernie	Hann, Helen M. E.	Vancouver
Boyd, Eleanor G.	Vancouver	Hardman, Jack G.	Revelstoke
Braidwood, Darrell T. B.	Vancouver	Harvey, M. Joyce	Victoria
Branson, Thomas L. C.		Hewitt, Katherine B.	Vancouver
Colonia Cuauhtemac, Mexico, D.F.		Hicks, Albert R.	Cumberland
Brason, Frederick W.	New Westminster	Hidaka, Kunio	Whonock
Bremner, Moira C.	Vancouver	Hollenberg, Shirley F.	Vancouver
Bricker, Marion A.	Vancouver	Horn, Patricia H.	Vancouver
Brown, James B.	Vancouver	Hunter, Douglas L.	Vancouver
Brown, M. E. Monica B.	Vancouver	Hunter, Mona D.	Wenatchee, Wash.
Bunyan, Donald E.	Nelson	Hutchinson, Sheila D.	North Vancouver
†Burgess, W. Norman	Powell River	Hutton, Dorothy C.	Vancouver
Busby, Constance I.	Vancouver	Jamieson, Florence T.	New Westminster
*Bush, Irene B.	Kelowna	Jenkins, Irene M.	Vancouver
Butler, Enid L.	Vancouver	Jeremy, Ann H.	Vancouver
Campbell, Henry C.	Vancouver	Jessup, Reg.	Ocean Falls
Campbell, Jack C.	Vancouver	Johanson, Lillian V.	Vancouver
Caydzen, Esme C.	Vancouver	*Johnson, Gordon E.	Duncan
Chapman, V. Lennie	Victoria	Johnston, Jean E.	Vancouver
*Clark, Alexander	Vancouver	Johnston, Lorraine E.	Vancouver
Clark, Frank B.	Port Moody	Jones, Dorothy May	Victoria
Clark, Richard J.	Vancouver	Keatley, Patrick C.	North Vancouver
Clarke, Eleanor M.	Victoria	Keel, Eileen R.	New Westminster
Collins, Adrienne E.	Vancouver	Kennedy, Josephine C.	Vancouver
Collins, Rosemary R.	Vancouver	Kerr, Samuel A.	Vancouver
Cooper, Joyce E.	Prince Albert, Sask.	†Kidd, Cleve W.	Sudbury, Ont.
*Cox, Lionel A.	Victoria	*Kier, Elden W.	Vancouver
Daniel, Howard W.	New Westminster	King, Barbara C.	Vancouver
Daunt, Henry T.	New Westminster	Knox, A. William D.	Kelowna
Dawson, Jessie M.	Kamloops	†Laird, Frank W.	Penticton
Deloume, Fernand E.	Victoria	Lamb, Bessie	Vancouver
Dickinson, Margaret	Vancouver	Lang, Alexander C.	North Vancouver
Dixon, Harold F.	Victoria	Lew, Hin	Vancouver
Dixon, William G.	Vancouver	Lloyd, Denys C.	Duncan
Doherty, Norah	Murrayville	Lunde, Magnus	Trail
Douglas, Gordon C.	Vancouver	*Lyttleton, Hugh A.	Vancouver
Doyle, Anthony D. M.	Vancouver	*Marshall, William O.	Victoria
Duncan, Morris R.	Michel	Mason, Gerald	Wadsley
Durkin, D. Osborne	Brainerd, Minn.	*Mathisen, Martin M.	Vancouver
Easter, Lloyd	Vancouver	Mercer, Jack E.	West Vancouver
Easter, Percy A.	Vancouver	Milson, Geoffrey H.	Vancouver
Eaton, Ethel M.	Vancouver	Mitchell, Leonard	Vancouver
Eedy, W. Irene	Vancouver	Moe, John G.	Vancouver
Findlay, Margaret M.	Lake Cowichan	Momose, Yoshiko V.	Vancouver
Fleck, Janet S.	Vancouver	Montgomery, Richard A.	Vancouver
Fleming, Marion K.	Vancouver	Moore, Victor C.	Victoria
Flemming, Helen V.	Medicine Hat, Alta.	Morrow, David	Vancouver
Flesher, Eric M. R.	Thurlow	Morrow, Henry McF.	Vancouver
Fox, Priscilla I.	Vancouver	Moss, Max E.	Calgary, Alta.
Fraser, Emily A.	Vancouver	Moyls, Benjamin N.	Vancouver
*Frazee, James L.	Vancouver	Muncy, William H.	Victoria
*Fujiwara, M. Wesley	Vancouver	Murphy, Margaret A.	Victoria
Galloway, Virginia	Vancouver	Murphy, Mary	Vancouver
Gardner, Joseph A.	Nakusp	McArthur, Joan R.	Pitt Meadows
Garrett, John S.	Victoria	Macaulay, Johnina M.	Vancouver
Garstin, Lawrence F. H.	Hartell, Alta.	McBean, R. Harold	Sardis
*Gerow, Mary J.	Crescent	McCallen, Allisen	Vancouver
Glass, George E.	Vancouver	McDiarmid, Maureen N.	Vancouver
		McDonald, John A.	Ashcroft

*Conditioned.

†Partial.

FACULTY OF ARTS AND SCIENCE—FOURTH YEAR—(Continued)

Name	Home Address	Name	Home Address
MacDonald, June G.	New Westminster	Scott, Pauline I. L.	Vancouver
McDonald, Ruth E.	New Westminster	Sellens, Kathleen A.	Vancouver
McDougall, Barbara A.	North Vancouver	Seto, Maysien G.	Vancouver
MacEwen, Phyllis J.	New Westminster	*Shaw, Kenneth N. F.	North Vancouver
Macfarlane, James D.	Victoria	Sherratt, Dorothy M.	Vancouver
†McGill, Donald A. C.	Vancouver	Sinclair, Evelyn B.	Vancouver
McGinn, Robert D.	Vancouver	Sivertz, Bent G.	Vancouver
MacIntosh, James A.	Vancouver	*Skæ, Kathleen	Vancouver
McIntyre, Robert F.	Vancouver	Sloan, Marion L.	Perth, Ont.
†MacKenzie, Russell K.	Vancouver	Smith, Evelyn B.	Vancouver
McKinnon, Aileen K.	Vancouver	Snow, Gertrude A.	North Vancouver
MacLachlan, Thomas A.	Chemainus	Spring, Harry C. F.	Vancouver
MacLachlan, J. Murdoch	Chilliwack	Staghall, Hattie R.	Comox
McLeachlan, Thomas A.	Chemainus	Stewart, Elizabeth D.	Vancouver
MacLean, Hilda I.	Vancouver	Stewart, Elizabeth A.	North Vancouver
McLeod, Mary J.	Vancouver	Stewart, Isabella M.	New Westminster
MacLeod, O. Jacqueline	Vancouver	*Stott, Isabel G.	Vancouver
McNeill, Margaret T.	Vancouver	*Strachan, Stewart A.	Vancouver
*McPhee, Edward I.	Vancouver	Strong, St. Clair G.	Vancouver
Nishi, Frederick I.	Steveston	Strongitharm, Edward D.	North Vancouver
Nottingham, A. Miles	New Westminster	Swan, Flora McK.	Nanaimo
Nuffield, Edward W.	Gretna, Man.	Swanson, Arnold L.	Vancouver
*Ogilvie, George F.	Vancouver	Taylor, Frederick H. C.	Kelowna
Ozaki, Tam T.	Vancouver	Taylor, Sydney	Vancouver
Ozeroff, William J.	Shore Acres	Thompson, Margaret K.	Vancouver
Patten, Charles G.	Chilliwack	Thompson, N. Kathleen	Vancouver
Paul, Arthur B.	Vancouver	Thwaites, John B.	Vancouver
Pearson, Jean E.	Vancouver	Todd, A. Ellis	Vancouver
Pellant, E. Roy	Vancouver	Trapp, Nell	New Westminster
Petrie, William	Victoria	Turnbull, Doris H.	Lumby
Philpot, Dorothy J.	Cranbrook	Turner, Gordon H.	Vancouver
Poyntz, Phyllis L.	Toronto, Ont.	Vincent, Honor E.	Peachland
Pronger, Lester J.	Vancouver	Ware, Clifford A.	Vancouver
*Pullinger, Percy B.	Vancouver	*Warne, John W.	Vancouver
Pyle, Donald G.	Vancouver	*Weiss, Rose	Vancouver
Quigley, John M.	Vancouver	Whelan, Edgar B.	Vancouver
Ralph, Joyce E.	Vancouver	White, Moira M.	Vancouver
Randall, Lillian M.	Powell River	Whitelaw, Margaret E.	Vancouver
Rattenbury, John A.	Powell River	Wickett, W. Percy	Victoria
Riley, Kathleen	Victoria	*Wilbur, Gertrude L.	Vancouver
†Ritchie, Sheila R. J.	Vancouver	Williams, Ruth E.	Vancouver
Robinson, H. Basil	Vancouver	Wilson, Douglas M.	Vancouver
Rush, Jack T.	Vancouver	†Wilson, Lloyd H.	Vancouver
Ryan, Nora	Sardis	Worth, Douglas H.	Vancouver
Sadler, Evelyn E.	Vancouver	Wright, Helen L.	Vancouver
Sage, W. Donald M.	Vancouver	Wright, Irene M.	Vancouver
Sanford, Murray B.	Centre Burlington, N.S.	Wylie, Stewart	New Westminster
Scott, Edward W.	Vancouver		

COMMERCE

Campbell, Ewan D. K.	North Vancouver	Jarvis, Richard J.	Cranbrook
Clark, Sidney H.	Prince George	Kincade, Robert M.	Vancouver
Cosulich, Cecil S.	Vancouver	Lamont, R. Alexander	Vancouver
Cowan, Maisie B.	Vancouver	Leblanc, Renee M.	Rosedale, Alta.
Day-Smith, Lyman C.	Vancouver	Lui, Chak F.	Vancouver
Downey, Patrick J.	Smithers	Mahood, Ian	Chilliwack
Dowrey, W. Ritchie	Vancouver	Martin, William B.	Campbell Island
Edmonds, W. Fréth	Vancouver	Minichiello, Armando P.	Vancouver
Field, H. Frederick	Vancouver	Moore, John	Eburne
Gurry, Patrick E.	Vancouver	McLellan, William F.	Vancouver
*Hoskins, Herbert C.	Vancouver	McRae, Robert W.	Vancouver
Hudson, Alan G.	Victoria	Oyama, Kazuhiko	Vancouver
Ide, Henry	Vancouver	Pearson, John W.	Vancouver
		Pratt, E. Doris	Vancouver

*Conditioned.

†Partial.

COMMERCE—(Continued)

Name	Home Address	Name	Home Address
Quigg, John R.	Regina, Sask.	Smith, Frederick D.	Vancouver
Rae, James A.	Chilliwack	Stark, John E.	Vancouver
Rand, Donald R.	Vancouver	Stevenson, John H.	Vancouver
Reed, Bernard	Vancouver	*Sweetnam, Allan G.	Vancouver
Robertson, D. James	Victoria	Tucker, Havelock J.	Vancouver
Robertson, Walter J.	Vancouver	Wilson, Leslie G.	New Westminster
Ross, John M.	Vancouver	Wilson, Robert A.	Vancouver
Scott, Grace L.	Royal Oak		

GRADUATES

FACULTY OF ARTS AND SCIENCE

Abbott, Harley D.	Cloverdale	Herd, Harold H.	Vancouver
Agnew, William N.	Vancouver	Hebden, Lloyd H.	West Vancouver
Aldous, John G.	Victoria	Herd, Thomas D.	Vancouver
Ashford, Walter R.	Vancouver	Hobden, Lloyd H.	West Vancouver
Bailey, Stan	Vancouver	Hogarth, David M.	Nanaimo
Barker, Amy	Vancouver	Horwood, Audrey F.	Vancouver
Bastin, Hilary D.	Victoria	Howard, Arthur M.	Vancouver
Bedner, Anne M.	Vancouver	Howatson, Charles H.	Vancouver
Bell, Robert E.	Ladner	Huddleston, Robert	Victoria
Bishop, Ernest L.	Victoria	Hunden, David J.	Cumberland
Boutillier, Helen R.	Vancouver	Irish, E. J. Wingett	Hollyburn
Brawn, James S.	New Westminster	Irwin, Everett J.	Vancouver
Brewer, Charles P.	Vancouver	Jackson, Suzanne C.	Vancouver
Bruce, Dorothy M.	Saanichton	Kellie, Robert I.	Enderby
Burke, Herbert C.	Vancouver	Kidd, George P.	Vancouver
Cameron, William M.	Nanaimo	Killip, Bessie H.	Vancouver
Campbell, James D.	Vancouver	King, Norma L.	Vancouver
Capon, Donald	Vancouver	Lane, Joseph H.	Vancouver
Cave-Browne-Cave, Genille	Victoria	Langton, R. Eric G.	Port Hammond
Chamberlain, Edward R.	North Vancouver	Lips, Alair	Terrace
Chang, Helen	Vancouver	Lobb, Hilda I.	Vancouver
Cope, M. C. Lillian	Vancouver	Lutack, Michael P.	Vancouver
Covington, Arthur E.	Vancouver	Marshall, J. Kelso	Vancouver
Curtis, Alden S.	Vancouver	Milley, H. Reginald	Vancouver
Dale, D. Ursula	New Westminster	Mizuhara, Shaw	Vancouver
Davidson, John F.	Vancouver	Mooney, Alvin W.	Vancouver
Denton, Howard F.	Victoria	Muir, James F.	Victoria
Detwiller, Lloyd F.	Vancouver	Mulloy, Florence S.	Vancouver
Dill, Charlotte E.	Vancouver	McCarter, John A.	Vancouver
Downes, Gwladys	Vancouver	McCleery, Jean E.	Vancouver
Ducklow, Albert J.	Vancouver	McConnell, Mabel W.	Vancouver
English, S. Roy	Vancouver	McDiarmid, Ian H.	Vancouver
Farquhar, Hugh E.	Victoria	Macdonald, Alan S.	Vancouver
Ferris, Robert J.	Vancouver	Macdonald, Alex F.	Peachland
Findlay, James A.	Vancouver	McDonnell, Robert A.	Vancouver
Fisher, Herbert E.	Vancouver	McGechaen, John	Vancouver
Fitch, Fred T.	Vancouver	McGuire, J. Carson	Chilliwack
Fitch, Jean	Vancouver	Mackay, Ronald D.	Vancouver
Fitzpatrick, Dudley M.	Vancouver	McLellan, Robert B.	Vancouver
Found, Richard K.	Vancouver	McMorris, Mary A.	Vancouver
Freed, D. Mary	Vancouver	Newton, Theodore D.	Vancouver
Fulton, Clarence O.	Vernon	Parker, Hugh	Vancouver
Gibson, Doreen E.	Vancouver	Pepper, James M.	Victoria
Gilbert, William D.	Sechelt	Pepper, Thomas P.	Victoria
Gillson, John W.	Vancouver	Pillsbury, Richard W.	Vancouver
Godson, Warren L.	Victoria	Pringle, George R.	Vancouver
Govier, Percy E.	New Westminster	Railton, Joan M.	Vancouver
Grigsby, Faith	Vancouver	Reid, Constance M.	New Westminster
Guthrie, John	Ladysmith	Reid, M. Audry	Vancouver
Hamilton, John A.	Vancouver	Reynolds, Kathleen M. W.	North Vancouver
Handford, Freda M.	Vancouver	Richardson, Arthur G.	Vancouver
Harper, John A.	Vancouver	Riddehough, Geoffrey B.	Vancouver
Harris, Ernest A.	Vancouver	Robertson, Robert F. S.	Vancouver
Heddle, Rognvald D.	Victoria	Robinson, Bruce A.	Vancouver
		Roper, William J.	Vancouver

*Conditioned.

GRADUATES—FACULTY OF ARTS AND SCIENCE—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Rothstein, Samuel	Vancouver	Tomkinson, William	New Westminster
Ruddell, Clifford T. O.	Vancouver	Toms, Donald H.	Ladner
Schultz, William A.	Vancouver	Tracy, Wilmot E.	New Westminster
Shaffer, Marion A.	Vancouver	Vick, Edgar B.	Vancouver
Shepherd, Alfred H.	Vancouver	Waddell, David B.	Victoria
Sibley, William M.	Vancouver	Waites, Kenneth A.	Vancouver
Simpson, Robert E.	Vancouver	Walker, Day	North Vancouver
Smith, Clyde McK.	Vancouver	Wallace, John G.	Victoria
Smith, David B.	Nelson	Wilks, Arthur F.	Vancouver
Smith, Elsie K.	Victoria	Williams, Roscoe B.	Langley Prairie
Snowsell, Frank	Armstrong	Wilson, Reginald A.	New Westminster
Sones, William E.	Pender Island	Wright, Kenneth W. T.	New Westminster
Spargo, Thomas	Ladysmith	Yerburgh, E. Robert M.	Victoria
Sparks, Jack	Vancouver	Young, James G.	Vancouver
Street, Elisabeth R.	Portland, Ore.	Zotov, Gennady	New Westminster
Stuart, Frank A.	Vancouver		
Taylor, Christopher I.	Vancouver		
Thorsteinsson, Berg	Powell River		
Todd, Marjorie D.	Vancouver		

SOCIAL SERVICE COURSE

Baldwin, Gwendolyn C.	Barons, Alta.	*Matheson, John P.	Vancouver
Birch, Sophie	Vancouver	Moar, Myrtle M.	Saskatoon, Sask.
Birkeland, Elizabeth E.	Vancouver	Morris, Effie K.	Nelson
Brand, Alison M.	Vancouver	Moscovich, Sam R.	Lethbridge, Alta.
Brown, Dorothy L.	Vancouver	McCabe, Bernard J.	Vancouver
Calnan, Wilfrid M.	Vancouver	MacDonald, Margaret A.	Mountain Park, Alta.
Cameron, M. Joy	Vancouver	MacGillivray, Mary M.	St. Andrews, N.S.
Carter, Evelyn M. C.	Victoria	MacInnes, Mary S.	North Vancouver
Cawley, Amy V.	Victoria	McIntyre, Frances H.	Vancouver
Christie, Hugh G.	Vancouver	McKay, Ruby M. F.	Vancouver
Davidson, Robert J. H.	Vancouver	Oliver, Jean	Vancouver
Dunbar, Hazel M.	Vancouver	†Puckering, Mary E.	West Vancouver
*Foster, Marion E.	Calgary, Alta.	*Salter, Audrey E.	Vancouver
Freethy, Eveline	Nutana, Sask.	Stanley, Beatrice M.	Vancouver
Gillen, James L.	Vancouver	Stevens, Gordon C.	Vancouver
Harris, Margaret L.	Vancouver	Stevenson, Helen M.	Vancouver
*Hay, Mary E.	Vancouver	St. John, Claire R.	Vancouver
Hughes, Gwendolin E.	Victoria	Sullivan, Isabel M.	Victoria
Jacobson, Irene D.	Barons, Alta.	Thomas, Malgwyn E.	Vancouver
Johnson, Glendyne R.	North Vancouver	Tuckey, Elizabeth U.	Victoria
Kenmuir, Patricia M.	Vancouver	Wright, Marie G.	Vancouver
Kitchen, Alfred J.	Vancouver	*Wright, Mildred M.	Victoria
Langley, Margaret	Vancouver		
Lockhart, Ruth	Calgary, Alta.		

TEACHER TRAINING COURSE

Aitken, Janet L.	Vancouver	Florillo, Erman N.	Fernie
Armitage, David H.	Creston	Flook, Mildred S.	Vancouver
Bishop, Roger J.	Vancouver	Flower, R. Edward	Cranbrook
Boroughs, Robert J.	Vancouver	Fotheringham, A. Montieth	Vancouver
Boyd, Otilie G.	Lake Cowichan	Fox, Geoffrey E. N.	Vancouver
Bridgman, Stella M.	Vancouver	Harris, Iris G.	Vancouver
Brown, Joanne V.	Vancouver	Harris, Lois M.	Victoria
Burke, Eileen F.	Vancouver	Healey, Beatrice E.	New Westminster
Calhoun, Joyce N.	Tappen	Hunter, J. Lyall	Cloverdale
Carr, Catherine A. B.	Vancouver	Idyll, Clarence P.	Vancouver
Cartmell, Clara E.	Chilliwack	Jenkins, Morgan	New Westminster
Day, Jessie	Vancouver	Johnston, D. Kathleen	Nanaimo
Dean, Venie L.	Vancouver	Keenlyside, Kathleen B.	Vancouver
Deas, Margaret	Vancouver	Kinnaird, Jean S.	Vancouver
Duncan, Jean E.	West Vancouver	Kinney, Dorothy J.	Vancouver
Ellis, W. Ivy	Vancouver	Large, Kelvin D. M.	Vancouver
Ferguson, Byron L.	Vancouver		
Fieid, Marion C.	New Westminster		

*Conditioned.

†Partial.

TEACHER TRAINING COURSE—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Letham, B. Lucile	Vancouver	Plaskett, Joseph F.	New Westminster
Lock, Arthur E.	New Westminster	Poole, Robert V.	Vancouver
Loftus, Frances M.	Vancouver	Rathie, Muriel	Vancouver
Mallett, Percival H.	Vancouver	Ritchie, Myles H.	Vancouver
Martin, Arthur L.	New Westminster	Ryan, Mary	Vancouver
Matheson, Kathleen F.	Kelowna	Sovereign, Elizabeth V.	Peace River, Alta.
Minshull, Raymond G.	West Summerland	Stirling, William L.	Vancouver
Morrow, Eileen S.	Vancouver	Stradiotti, Henry	Vancouver
McDougall, Robert L.	North Vancouver	Stroyan, Edward G.	Vancouver
McKenzie, Robert T.	Vancouver	Sturdy, Edith H.	Revelstoke
McKinnon, Elizabeth A.	New Westminster	Swainson, Neil A.	Victoria
McLagan, R. Moir	Vancouver	Walker, Margaret J. E.	Vancouver
McPhee, Howard McL.	Vancouver	Wayles, Phyllis A.	Vancouver
Nevison, Myrne B.	Vancouver	West, Ellen J.	Vancouver
Norie, I. Elisabeth S.	Cowichan Station	Whiteford, Edith M.	Nicola
Osler, Kenneth S.	Comox	SECOND TERM ONLY	
Piercy, Helen W.	Vancouver	Hill, Clara E.	Briercrest, Sask.
		Reid, Jean	Vancouver
		Smith, Kate A.	Baldur, Man.

DIRECTED READING COURSE

Adams, Thomas V.	Sointula	Holyoke, Frederick V.	Stillwater
Arland, Elsie	Vancouver	How, Anna B.	Pemberton
Auld, Wilfred H.	Vancouver	Jack, Marjorie H.	Hatzic
Baxter, Edna L.	Nanaimo	Jenks, Robert	Cloverdale
Bedford, Charles M.	Mission City	Johnstone, Laura	Nanaimo
Beech, Jack E.	West Summerland	Jones, Arthur D. W.	Smithers
Bell, Alice	Vancouver	Jones, Wilfrid C.	Ladysmith
Bennett, Thomas E.	Alberni	Keith, Leslie	Squamish
Bishop, George A.	Rosland	Kennedy, W. Campbell	Nanaimo
Bissell, George C.	Oyama	Kirk, John G.	New Westminster
Blake, Thomas B.	Vancouver	Leighs, Clifford H.	Prince Rupert
Blanchard, Herbert E.	Duncan	Lloyd, Norman D.	Tranquille
Bowbrick, John T.	Courtenay	Lukas, John	Kimberley
Bower, Francis J.	Dawson Creek	Malkin, Philip L.	Vancouver
Bowering, Ebbie	Vancouver	Marriott, Earl	Creston
Bristow, Edith A.	Merritt	Monk, John L.	Grindrod
Brynjolfson, Stephen G.	Powell River	Mountain, Roy E.	Milner
Brynjolfson, Walter C.	Oak Bay	Mountain, Wilma E.	Vancouver
Carlson, Oscar H.	Vancouver	Murphy, Stanley A.	Trail
Carroll, Clarence S.	Chilliwack	McCall, Graham	Errington
Charter, Harold R.	Carcross, Y.T.	Macdonald, Donald G.	Union Bay
Cobbett, Douglas W.	Creston	Macdonald, J. Vernon	Salmo
Cobus, Anthony E.	Nelson	Macdonald, Kenneth E.	Powell River
Cook, Gregory C.	Victoria	Macfie, Robert L.	Port Alberni
Crellin, William S.	Nanaimo	McGregor, Marjorie H.	Vancouver
Cuptit, Frank L.	Vancouver	McKay, Donald H.	Cassidy
Curtis, Alice M.	Erickson	McMillan, John	Port Alberni
Dawson, Horace R.	Victoria	MacSween, Allan J.	North Vancouver
Duncan, William S.	Michel	Nye, Florence M.	Lynn Creek
Elmes, Walter H.	Nelson	Orr, John M.	Ashcroft
Evans, Stanley	Nanaimo	Patterson, Arthur M.	Victoria
Farquhar, Frances A.	Victoria	Phillips, Alexander J.	Premier
Ferguson, George	Chemainus	Pidcock, Ruth E.	Wells
Ferguson, Walter H.	Ladysmith	Pritchard, Vaughan G.	Victoria
Ferguson, Walter R.	Prince Rupert	Richards, Ellinor G.	Vernon
Flick, Frederick W.	Prince George	Robson, T. H.	Invermere
Foster, Franklyn	Nanaimo	Sanders, John L.	Prince George
Gaddes, D. Boyce	Mission City	Sanford, Norman M.	Pitt Meadows
Gilbert, Verdun P.	Nanaimo	Siddall, Charles	Telkwa
Gooding, Alfred H.	Cloverdale	Simpson, Ernest J.	Vancouver
Graham, George W.	Chilliwack	Smith, David J.	Sunset Prairie
Griffin, George H.	Vancouver	Smith, Robert L.	Vancouver
Grodzki, Leonard	New Denver	Smith, Vernon	Vancouver
Hendrickson, Inga C.	Kimberley	Stuart, Walter H.	Rounds
		Thomas, James A.	Vanderhoof

DIRECTED READING COURSE—FACULTY OF ARTS AND SCIENCE—(Continued)

Name	Home Address	Name	Home Address
Thomson, G. A. Victor	Victoria	Weir, Thomas R.	Copper Mountain
Thomson, Howard A.	Sointula	Whittaker, George W.	Cowichan Station
Timmings, Joseph	Nanaimo	Williams, Florence E.	Vancouver
Tippett, William G.	Parksville	Williston, Ray G.	Princeton
Tracy, Frank F.	Rolla	Wilson, George	New Westminster
Tweed, Reginald C. R.	Extension	Wood, John E.	McBride
Wallach, J. Jean	Mt. Lehman	Woodruff, R. John	Powell River
Walmsley, Thomas E.	Tadanac	Yip, Kew D.	Vancouver
Walton, Rhoda	Victoria	York, Glenn A.	Creston
Warder, Alfred T.	Victoria		
Webster, Wilfred G.	Kelowna		

There are also 27 students who are taking a Directed Reading Course in addition to their other work and who are, therefore, registered otherwise.

EXTRA-SESSIONAL CLASSES

Adams, Robert W.	New Westminster	Macfarlane, A. Lorna	Vancouver
Andruss, Caterina M. P.	Vancouver	MacKenzie, Glenn L.	Vancouver
Aqua, Sidney S.	Vancouver	McLachlan, William H.	Vancouver
Ballard, Alfred C.	Vancouver	Ovans, Charles D.	North Vancouver
Delany, Mary	Vancouver	Owen, Gladys W.	Vancouver
Ellis, Edward N.	Vancouver	Parminster, Alfred V.	New Westminster
Goard, Harold D.	Vancouver	Robson, Henry	Vancouver
Greyell, Melville	Vancouver	Rusler, George W.	Vancouver
Henderson, Melvin L.	Vancouver	Shore, Alma M.	Vancouver
Hill, Edith L.	Vancouver	Sinclair, Elizabeth F. E.	Vancouver
Hutchison, James C.	New Westminster	Smith, Donald O.	Burnaby
James, Albert H.	Vancouver	Smyth, James D.	Vancouver
King, Roy	North Vancouver	Smyth, Joseph	Vancouver
Logan, Clement	Vancouver	Waters, William J.	Vancouver
Lynch, James C.	Vancouver	Weldon, Sylvia LeS.	Vancouver
Maxwell, Ernest D. W.	Vancouver	Williams, Maud A.	Vancouver
Morrison, Malcolm C.	Vancouver	Woodman, Sidney E.	North Vancouver
McAdam, Lorne K.	New Westminster	Woodward, Harold	Vancouver
McArthur, Helen M.	Vancouver		

There are also 28 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

Anderson, Blair W.	Vancouver	Davidson, James	Vancouver
Backman, Arvid H. V.	Vancouver	Davidson, Robert A.	Vancouver
Baldwin, John H.	Vancouver	Day, Alvin A.	Vancouver
Ball, Harold W.	Monterey, Calif.	Deane, Roy E.	Vancouver
Bannerman, Donald K.	Vancouver	DeLeen, John L.	Vancouver
Bartholomew, Ben.	North Vancouver	Dennys, Kenneth W.	Vernon
Beley, John P.	Rossland	Dunell, G. Eric	North Vancouver
Benson, Edward	Chapman Camp	Elgar, Everett C.	Penticton
Bergklint, L. Robert	Vancouver	Evans, Donald C.	Vancouver
Bogue, Laurence J.	Lynn Creek	Field, Robert C.	Chilliwack
Bourne, Edward A.	Trail	Forrester, A. Glen	Ladysmith
Buchanan, Thomas H.	Calgary, Alta.	Foyston, Frank S.	Athalmer
Buck, F. A. Mackinnon	Vancouver	Fraser, George B. R.	Peachland
Buckland, John A. C.	Vancouver	Gardiner, A. Holmes	Vancouver
Burchell, Sheridan	Prince Rupert	Gifford, Ross J.	New Westminster
Burns, David	Vancouver	Gill, Norman A.	Kimberley
Campbell, George C.	Vancouver	Goodwin, Walter H.	Vancouver
Carlyle, R. Harold	Vancouver	Graham, Harold M.	Squamish
Carter, Ronald B.	New Westminster	Granger, John D.	Vancouver
Charlesworth, F. H. Barrie	Vancouver	Gray, John S.	Vancouver
Charters, James	Vancouver	Green, Walter C.	Vancouver
Copp, Stanley S.	Vancouver	Haddad, Michael A.	Vancouver
Coverdale, Harold M.	Trail	Halcrow, David	Penticton
Cox, Leonard	Vancouver	Hammond, John S. N.	Kelowna

FACULTY OF APPLIED SCIENCE—SECOND YEAR—(Continued)

Name	Home Address	Name	Home Address
Handforth, R. Victor L.	Vancouver	Parliament, J. Harvey	Vancouver
Harrison, John S. M.	Vancouver	Patterson, Lawrence A.	Hollyburn
Hatch, Noll J.	Chilliwack	Patterson, Stanley G.	Hollyburn
Herring, Philip S.	Scapa, Alta.	Peyman, Douglas A. R.	Vancouver
Holden, Richard C.	Victoria	Pickard, Murray K.	Vancouver
Hole, Jack S.	Vancouver	Pitman, Duncan L.	Prince George
Hooper, Perry McF.	Salmon Arm	Purslow, John E.	Vancouver
Horne, Leslie R.	Vancouver	Pyle, R. Gordon	Vancouver
Hunter, Harry I.	Powell River	Roach, Stewart W.	Vancouver
Hurst, Edwin	Vancouver	Robson, Donald H.	Victoria
Hutchinson, Bruce	Vancouver	Rogers, John S.	Vancouver
Jessup, Douglas G.	Ocean Falls	Rombough, Murray	Medicine Hat, Alta.
Johnson, Charles A.	Vancouver	Rutherford, Robert J.	Cumberland
Jones, Jack R.	Victoria	Ryder, Kenneth W.	Edmonton, Alta.
Kaneen, A. Geoffrey	Vancouver	Schiedel, Ian H.	Vancouver
Kawahara, Hideo	Kelowna	Sinclair, H. Lloyd	Vancouver
Keller, Cornelius W.	Vancouver	Skene, Alexander W.	Calgary, Alta.
Kermode, Donald J.	Vancouver	Smith, Frank F.	Kimberley
King, A. David	Port Alice	Steele, Ian McL.	North Vancouver
Kirkham, E. Bruce	Vancouver	Stewart, A. John	Britannia Beach
LaBelle, Eugene P.	Vancouver	Stewart, Harold C. E.	Vancouver
Lea, Edgar R.	Vancouver	Stiell, Will M.	Kelowna
Lear, Harold K.	North Vancouver	Stusiak, Michael	Powell River
Lepsoe, Christian H.	Trail	Sutcliffe, E. Douglas	Victoria
Lightbody, Alexander	New Westminster	Sweeney, Maxwell P.	Ocean Falls
Lunde, Edward A.	Trail	Tabata, Minoru	Vancouver
Mann, Clarence W. J.	Vancouver	Tait, Robert J. C.	Vancouver
Marzocco, Aldo	Kimberley	Takahashi, Yoshito	Steveston
Mason, Ernest	Trail	Taylor, Hugh J.	Vancouver
Milligan, George B.	Vancouver	Thompson, J. Vernon Bassano	Alta.
Mitsui, Koei	Vancouver	Thomson, Stanley	Vancouver
Motherwell, Victor G.	Vancouver	Thorson, Emil	Vancouver
Murray, Robert McK.	Vancouver	Touhey, Thomas B.	Britannia Beach
McCay, James	Vancouver	Tsujimura, Koichi	Vancouver
McCulloch, James P.	Vancouver	Tully, Ralph W.	Ladysmith
McCulloch, W. Donald	Revelstoke	Vosburgh, Robert M.	Matsqui
McCutcheon, John O.	Vancouver	Watson, Arthur	Vancouver
McLean, Donald H.	Edmonton, Alta.	Weed, Joseph D.	Vancouver
McLellan, Leonard R.	Vancouver	Weiner, Harry S.	Vancouver
McLennan, Douglas E.	Vancouver	White, Ronald J.	Vancouver
McLeod, A. Allan	Vancouver	Williams, F. Campbell	Nanose Bay
McLeod, Donald	Vancouver	Wilcox, George J.	Vancouver
McTaggart, Kenneth C.	Vancouver	Woods, Kenneth	Calgary, Alta.
Ontkean, M. Orville	Vancouver	Wyard, Jack B.	North Vancouver
Orr, Alexander G.	Vancouver	Zabinski, John	Cumberland

THIRD YEAR

Abrams, Jack H.	Nanaimo	Bushell, Charles H. G.	Vancouver
Angley, William F. P.	Regina, Sask.	Carlisle, Donald	Vancouver
Baker, Dudley L.	Vancouver	Carver, Robert R.	Vancouver
Barton, Edward S.	Vancouver	Casson, H. Vincent	Victoria
Bastin, Douglas H.	Vancouver	Cavers, Stuart D.	Vancouver
Bell, Gordon M.	Vancouver	Chu, Gan D.	Vancouver
Bell, Harry R.	Ladner	Cochran, John	Vancouver
Bennett, J. Howard	New Westminster	Collins, John A.	North Vancouver
Bennett, Reginald E.	Vancouver	Creighton, John D.	Vancouver
Beresford, Richard G.	Winnipeg, Man.	Curran, Henry M.	Vancouver
Blanchet, Peter H.	Sidney	Cushing, Thurb D.	Kelowna
Boss, Norman H.	Nelson	Darley, Harry P.	Vancouver
Bradfield, Albert W.	Nanaimo	Davie, Hugh S.	Vancouver
Broadbent, Joseph S.	Moose Jaw, Sask.	Davies, Kenneth R. G.	Kimberley
Brown, Ivan T.	Vancouver	Deptford, J. Arthur	Vancouver
Bruce, Norman C.	Golden	Dickson, Frank A.	Vancouver
Brynelson, John A.	Vancouver	Douglass, Martin K.	New Westminster
Bundy, Leonard P.	Vancouver	Drummond, Alan S.	Victoria
		Durham, George C.	Smithers

FACULTY OF APPLIED SCIENCE—THIRD YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Fargey, Harold T.	Vancouver	Nash, Charles W.	Vancouver
Finch, Gordon L.	Vancouver	Nasmyth, Pan H.	North Vancouver
Flynn, James E.	Vancouver	Norton, Eric H.	Vancouver
Foster, Robert L.	Vancouver	Nosworthy, Frank M.	Chilliwack
Fraser, Alan R.	West Vancouver	O'Kelly, Patrick, E. J.	Whonock
Gatenby, Lisle B.	Vancouver	Orr, Oscar F.	Vancouver
Glover, John L.	Vancouver	Parham, Donald S.	Vancouver
Granger, John M.	Vancouver	Parker, Rex C.	Woodfibre
Grant, Ian MacD.	Victoria	Parsons, Robert B.	Prince Rupert
Gray, Denis H.	Vancouver	Potkins, Robert A.	Vancouver
Hammersley, Cameron	Vancouver	Poulson, J. Howard	Saanichton
Harding, John H.	Nelson	Renshaw, Rodney E.	
Harvey, Bruce F.	Revelstoke		
Hayles, O. John	Chilliwack	Rich, Royce	North Vancouver
Haywood-Farmer, Robert	Savona	Richards, Ian T.	West Vancouver
Hilchey, Gordon R.	Vancouver	Rogers, C. Gordon	Victoria
Hills, J. Franklyn	Vancouver	Rooney, Sidney C.	North Vancouver
Hookings, Paul H. H.	Nelson	Roxburgh, J. Malcolm	Vancouver
Hopper, D. Alan	Vancouver	Rush, Ian C. M.	Hollyburn
Jameson, Fraser	Vancouver	Selby, Roy E.	Ioco
Johnson, William J.	Vancouver	Sheldon, Stanley W.	
Joplin, Albert F.	Vancouver		
Kagetsu, Hajime	Vancouver	Shepherd, Andrew F.	New Westminster
Kermode, E. Jacklin	Vancouver	Sinclair, G. William	Victoria
Leech, Geoffrey B.	Salmon Arm		
Leong, Dennis T. S.	Vancouver		
Livingstone, Hughie	Vancouver	Smith, Eric L.	New Westminster
Logan, Jack D.	Vancouver	Steel, William E. J.	Vancouver
Matheson, Chester R.		Stewart, J. Norman	Vancouver
	New Westminster	Sutton, Frank N.	Cumberland
Matheson, Willard E.	Kelowna	Takahashi, Saburo	Victoria
Miller, Douglas G.	Vancouver	Thompson, Elmer A.	
Miller, Richard C.	Victoria		
Morris, H. Rodney	Vancouver	Thorson, Victor	New Westminster
Morrison, Bernard H.	Nelson	Tucker, Jack N.	Vancouver
McGowan, John	Vancouver	Tuley, Edwin	Vancouver
MacKenzie, John S.	Vancouver	Turnbull, Arthur W.	Milner
McKenzie, W. Cameron		Turner, A. Desmond	
	New Westminster		
McLellan, Donald	Vancouver	Walton, Ernest N.	New Westminster
McLellan, Donald E.	Vancouver	Wannop, Robert C.	Vancouver
MacRae, Hector R.	Caulfeild	White, Charles E. T.	Vancouver
		Young, W. Edward L.	Oyama

FOURTH YEAR

CHEMICAL ENGINEERING

*Anderson, Harold W.	North Vancouver
Andrews, Arthur J.	Chapman Camp
Beaty, John D.	Vancouver
*Burnett, Norman H.	Vancouver
Davis, Russell L. L.	Vancouver
*Ellison, Gordon D.	Trail
*Gordon, Arthur D.	Vancouver
Greene, Daniel M.	Upper Sumas
Harris, Stanley L.	Vancouver
Hipkin, Howard G.	Vancouver
Keays, John L.	Vancouver
Lindsay, William	Vancouver
*Mikkelson, Elmer J.	Golden
*Moodie, Walter J.	Vancouver
McCallum, Thomas G.	Vancouver
McKim, Howard N.	Calgary, Alta.
Purdey, James W.	Vancouver
*Richardson, Allyn St. C.	
	North Vancouver
Robinson, James A.	Victoria
Rosenberg, Elof C.	North Vancouver
Sanford, Lionel M.	Vancouver

Smith, Harry H.	New Westminster
Thomas, David H. L.	Victoria

CIVIL ENGINEERING

Goode, Norman J.	Vancouver
Harford, George P.	New Westminster
Markham, Douglas	Vancouver
Wallace, William	Vancouver
Zirul, Melvin L.	North Vancouver

ELECTRICAL ENGINEERING

Anderson, Cameron B. H.	Vancouver
Crane, George J.	New Westminster
Davidson, Gordon K.	Vancouver
Foster, J. Max.	Vancouver
Gregory, Alfred J.	Vancouver
Griffiths, Garth	Victoria
Hailey, Arthur R. T.	Vancouver
Lyons, Edgar LeR.	Vancouver
*Morin, Desire P.	Vancouver
McAllister, Robert D.	Rossland
McDonald, John D.	Rossland
Nasmyth, Patrick W.	
	North Vancouver
Pickell, Owen F.	Fort St. John
Ryder, Charles V.	Chilliwack

*Conditioned.

FACULTY OF APPLIED SCIENCE—FOURTH YEAR—(Continued)

Name	Home Address	Name	Home Address
FOREST ENGINEERING			
*Johnston, J. Ralph.....	Invermere	Nazzer, Don.....	Vancouver
Ker, John W.....	Vancouver	Nichols, Walter J.....	Edmonton, Alta.
GEOLOGICAL ENGINEERING			
*Bowden, Walter R.....	Vancouver	*Nikaido, Hideo F.....	Vancouver
Lynott, William J.....	Vancouver	Parker, Charles W.....	Revelstoke
*McEachern, Ronald G.....	Coalmont	Rattenbury, David J.....	Kelowna
Newmarch, Charles B.....	Victoria	Roberts, John M.....	Edmonton, Alta.
Smith, Alan R.....	Vancouver	Shinobu, Eichi.....	Vancouver
Thompson, Robert M.....	Vancouver	*Storey, John E.....	Vancouver
*Wallace, J. Alan.....	Vancouver	Tarbox, John W.....	Vancouver
Williams, Edwin P.....	Vancouver	Wade, Garth S.....	Kamloops
METALLURGICAL ENGINEERING			
MECHANICAL ENGINEERING			
Barchard, Francis M.....	Trail	*Ellis, Francis J.....	Regina, Sask.
*Braidwood, William.....	Vancouver	*Maxwell, John J.....	Swift Current, Sask.
Chinn, Frank.....	Vancouver	Oilson, George C. A.....	Nelson
Gilles, John A.....	Vancouver	MINING ENGINEERING	
Granger, Thomas S.....	Vancouver	*apRoberts, G. Evan.....	Vancouver
Haskins, Reginald E.....	Kelowna	*Burnet, Frederick E.....	Kimberley
Hunt, William R.....	Vancouver	*Iverson, Bayard O.....	Oliver
Kadzielawa, Julius E.....	Vancouver	Merrett, John E.....	Victoria
Kellor, Gordon R.....	Vancouver	*Morton, Norman.....	Portage La Prairie, Man.
Kelland, Herbert H.....	Vancouver	McMillan, Gordon A.....	Langley Prairie
Ker, Walter A.....	Vancouver	Macrae, Roderick C.....	Vancouver
*Mills, William E.....	Vancouver	*Patience, L. Patrick.....	Kimberley
McLaren, T. Arthur.....	Vancouver	Rae, Arthur C.....	Vancouver
FIFTH YEAR			
CHEMICAL ENGINEERING		ELECTRICAL ENGINEERING	
Archibald, Charles B.....	Victoria	Cosar, Jack.....	North Bend
Barchard, Philip W.....	Trail	Duncan, Allix J.....	West Vancouver
Bell, J. Douglas.....	Victoria	Fraesso, Marino.....	Powell River
*Cavers, William J.....	Vancouver	Monasch, Louis B.....	Vancouver
Craighead, William A.....	Vancouver	Parker, W. Alfred.....	Nelson
Gunn, John A. M.....	North Vancouver	Pogson, Joseph R.....	Vancouver
Heim, W. Clare.....	Mission City	Saito, George L.....	Cumberland
Kemper, J. Howard.....	Britannia Beach	Sanderson, John A.....	New Denver
Killam, Cecil G.....	Vancouver	Webb, Elwood S.....	Chilliwack
Lawson, Robert G.....	Vancouver	FOREST ENGINEERING	
Leslie, John D.....	Vancouver	Armstrong, John B.....	Victoria
*Lowe, Robert A.....	Calgary, Alta.	Bennett, C. Erickson.....	Penticton
Mair, John D.....	Vancouver	Cameron, Ian T.....	Raymore, Sask.
Morel, Roy W. F.....	Trail	Carey, Davis M.....	Cadboro Bay
*Patrick, James D.....	Vancouver	Chard, Albert E.....	Regina, Sask.
Pilkington, William T.....	New Westminster	Dixon, Allan H.....	Vancouver
Price, S. Raymond.....	Bowen Island	Lemare, John D.....	Duncan
Ussher, James W.....	North Bend	Lind, Norman.....	Vancouver
Van Allen, Alexander.....	Vancouver	Pogue, Henry M.....	Vancouver
Walmsley, Harry L.....	Summerland	Provenzano, Angelo F.....	Cranbrook
Watson, Ernest L.....	Hatzic	Smellie, Ian McK.....	North Vancouver
Yip, Sun W.....	Vancouver	GEOLOGICAL ENGINEERING	
CIVIL ENGINEERING		Anderson, Arthur T.....	Vancouver
Cook, Paul M.....	Vancouver	Boe, Bernard.....	North Vancouver
Hansen, Melville B.....	Vancouver	Burden, Stephen P.....	Vancouver
Lighthall, Charles H.....	Vancouver	Gaul, Raymond F.....	Vancouver
McIntosh, Donald G.....	Vancouver	Johnson, Earl W.....	Vancouver
*Stamer, Salomon.....	Lwow, Poland	Lougheed, Milford S.....	Vancouver
Warren, William.....	Vancouver	Mathews, William H.....	Vancouver
*Conditioned.			

FACULTY OF APPLIED SCIENCE—FIFTH YEAR—(Continued)

Name	Home Address	Name	Home Address
MECHANICAL ENGINEERING		METALLURGICAL ENGINEERING	
Bogle, Roy T.....	Britannia Beach	McGregor, Donald J.....	Penticton
Carruthers, Harvey	Vancouver	Runkle, John D.....	Vancouver
Coulson, Alexander	Vancouver	MINING ENGINEERING	
Eadie, John K. M.....	Ocean Falls	Holland, Donaldson C.....	Vancouver
Johnsen, Peter F. B.....	Dickson, Alta.	Kitamura, Kenji	Vancouver
Kennedy, Milton McK.....	Eden, Man.	McIntosh, John S.....	Vancouver
Laird, Alan D. K.....	Victoria	*McLean, John C.....	Vancouver
Morris, Harold J.....	Vancouver	Pearce, Frederick G.....	Vancouver
Pearce, Gordon F.....	Vancouver	Phelps, John L.....	Whitehorse, Y.T.
Stewart, Alec R. M.....	Vancouver	Taylor, Raymond R.....	Vancouver
		Toombs, Ralph B.....	Vancouver
		Wylie, John W.....	Estevan, Sask.

GRADUATES

Allen, Alfred R.....	Vancouver	Leggat, William S.....	Vancouver
Breeze, John E.....	Vancouver	Little, Heward W.....	Vancouver
Davidson, Henry H. A.....	Vancouver	Lyle, Alfred G.....	Vancouver
Deshaw, Bernard F.....	Vancouver	Maconachie, J. Roy A.....	Nelson
Fahrni, Keith C.....	Hedley	Mead, Bruce R.....	Vancouver
Hargreaves, George	Vancouver	Patterson, Ralph F.....	Ocean Falls
Jones, Frank R. R.....	Victoria	Upward, Ronald A.....	Victoria

NURSING

SECOND YEAR

Avis, Margaret L.....	Vancouver	Munro, Mae E.....	Britannia Beach
Ball, Margaret L.....	Windermere	Macdonell, Marion E.....	Sardis
Bolton, Nancy.....	New Westminster	Phillon, Beryl K.....	Regina, Sask.
Butler, Irene E.....	Vancouver	Rowe, Phyllis S.....	Kamloops
Coffey, Doris M.....	Vancouver	Thompson, Joan M.....	West Vancouver
Cross, Josephine.....	Kamloops	Wallace, Billie	Vancouver
Jones, Katherine E.....	Vancouver	Yamamoto, Nana	Vancouver
Mann, Alison.....	Calgary, Alta.		

THIRD YEAR

Banford, Pauline E.....	New Westminster	Ladner, Dorothy M.....	Burnaby
Campbell, E. Jean.....	Vancouver	McKay, Jean C.....	Vancouver
Chipperfield, Nora J.....	Royal Oak	Pepper, Doris B.....	Vancouver
Cochrane, Ruth C.....	New Westminster	Robertson, Margaret M.....	Powell River
Dunfield, Mary F.....	Vancouver	Ross, Florence M.....	Vancouver
Goble, Margaret A.....	North Vancouver	Trout, Ferne	Vancouver
Jamieson, Doreen L.....	Rossland	Walker, Jean M.....	Tranquille
Jenkins, A. Elizabeth.....	Vancouver	Wright, Leora R.....	Vancouver

FOURTH YEAR

Beattie, Margaret	Queen Charlotte City	Giovando, Lucille	Ladysmith
Beveridge, Margaret A.....	Vancouver	Jonson, Ruth M.....	Hayter, Alta.
Breeton, Barbara A.....	Vancouver	Montgomery, R. Leslie.....	Vancouver
Campbell, Margaret M.....	Vancouver	Morris, L. Elizabeth.....	Vancouver
Eddie, Mary C.....	Sardis	Taylor, Gayle	Vancouver
Gall, Jeanne E.....	Vancouver	Uyede, A. Michiyo.....	Vancouver

FIFTH YEAR

Campbell, Isabelle	Vancouver	Macdonald, Mona V.....	Vancouver
Curtis, Kathleen M.....	Vancouver	Maclean, Mary C.....	Vancouver
Howard, Edna G.....	Vancouver	McLennan, Helen E.....	Trail
Millar, Margaret C.....	Vancouver	Staniforth, Marjorie E.....	Vancouver

*Conditioned.

NURSING—FACULTY OF APPLIED SCIENCE—(Continued)

SIXTH YEAR

Name	Home Address	Name	Home Address
Addison, Margaret S.	Victoria	Nelson, Emily L.	Vancouver
Davies, C. Viola	Vancouver	Paulin, Dorothy E.	Vancouver
Frith, Monica M.	Vancouver	Peirson, Gertrude M.	Vancouver
Grant, K. Lois	Vancouver	Saunders, Helen A.	Victoria
Kennedy, Janet S. M.	North Vancouver	Steele, Margaret H.	Vancouver
Loucks, J. Isabel	Regina, Sask.	Stone, Margaret M.	Vanderhoof
McCann, Elizabeth K.	Vancouver	Walters, Edith M.	Ladysmith

PUBLIC HEALTH NURSING COURSE

Harris, D. Bessie	Victoria	Newcombe, Winnifred	Vancouver
Hunter, Trenna G.	Vancouver	Noble, Grace J.	Vancouver
Kirkpatrick, Isabel C.	Vancouver	O'Driscoll, Agnes F.	Vancouver
Logle, Elizabeth C.	Vancouver	Perkins, Catherine W.	Maple Creek, Sask.
Morton, Katherine M.	Regina, Sask.	Scarr, Marjorie R.	Calgary, Alta.
Nancekivell, Ida L.	Vancouver		

TEACHING AND SUPERVISION

Mika, Theresa R. Edmonton, Alta.

FACULTY OF AGRICULTURE

FIRST YEAR

Buerk, Robert C.	Vancouver	McIntosh, Gloria C.	Vancouver
Campbell, James McG.	Vancouver	MacLean, Donald W.	Vancouver
Dale, J. Peter B.	New Westminster	McMillan, Robert H.	New Westminster
Dilworth, J. Gerald	Kamloops	MacSwan, Iain C.	Vancouver
Farley, Kenneth F.	Vancouver	Neale, Kenneth	Mission City
Farrow, F. Alfred	New Westminster	Nishioka, George	New Westminster
Fergusson, Con N.	Vancouver	Novikoff, Morris	Vancouver
Fitz-James, Philip C.	Vancouver	Racey, R. Stewart	Vancouver
Fraser, Charles A.	New Westminster	Rayner, George J.	Vancouver
Grahame, Richard W.	Vernon	Ripley, T. Andrew	New Westminster
Green, Charles A.	Vancouver	Rippon, Arthur W.	Vancouver
Harrower, John A.	Langley Prairie	Roe, John A.	Vancouver
†Ho, Thomas K. K.	Vancouver	Ryall, John P.	Denman Island
Hunter, Douglas R.	Hazelton	Sandall, Frances W.	Vancouver
Johnston, Andrew K.	Duncan	Stone, Mary A.	Vanderhoof
Johnston, Wallace M.	Chilliwack	Swackhamer, David	New Westminster
Killick, Stanley R.	New Westminster	Tamboline, Florence R.	Ladner
Lloyd, Robert E.	Vancouver	Temoin, Philip R.	Vancouver
Logan, H. Fitzgerald M.	Vancouver	Todd, Stuart	Vancouver
Marshall, Robert A.	Calgary, Alta.	Van Horne, H. Bircham	Vancouver
Merryfield, Jack W.	Vancouver	Vaughan, Roderick	Hollyburn
Moyls, Adrian W.	Vancouver	Walker, Josephine G. E.	Quathiaski Cove
Mulvin, Mary L.	Vancouver	Young, David B.	Vancouver
MacCarthy, James A.	New Westminster		
McCrary, Elwood R.	Eburne		
McDonald, Ian J.	Vancouver		

FACULTY OF AGRICULTURE—(Continued)

SECOND YEAR

*Bentley, Robert O.	Vancouver	Davies, John C.	Vancouver
*Bridge, Tom	Vancouver	*Eek, Catherine J.	Fanny Bay
*Brown, Ken R.	Vancouver	*Fergusson, Donald N.	Vancouver
*Chang, June	Vancouver	Gifford, Paul H.	North Vancouver
*Claydon, George	Vancouver	*Grieve, Thomas	Vancouver
Clement, John W.	Vancouver	*Hardy, Francis W.	White Rock
Cuthbert, William J.	Agassiz	*Johnston, William J.	Vancouver

*Conditioned.

†Partial.

FACULTY OF AGRICULTURE—SECOND YEAR—(Continued)

Name	Home Address	Name	Home Address
Klinkhamer, Thomas L.	Ladner	Porter, Morgan R.	Lytton
Lidster, Echo L. R.	Langley Prairie	Thomson, J. Lorraine	Vancouver
*Lord, Terence M.	Vancouver	Townsend, George C.	Vancouver
*Maxwell, John C.	Vancouver	Wainwright, P. Roderick	Vancouver
*Morgan, Joseph F.	Vancouver	*Watt, Alexander W.	Kelowna
Myroie, Robert L.	Vancouver	*Woodward, Eugene D.	North Vancouver
McKinnon, Donald O. B.	Steveston	Young, Alastair J.	Vancouver
Neilson, Nora E.	Vancouver		
*Pearce, Joseph M.	Vancouver		

THIRD YEAR

Anstey, Thomas H.	Victoria	Millard, Robert P.	Vancouver
Atkinson, Robert G.	Vancouver	Mitchell, Phyllis D.	Vancouver
*Byers, John H.	Vancouver	*Monckton, John P.	Victoria
Calder, William A.	Vancouver	McEwen, J. Murray	Vancouver
Christie, W. Douglas	Vancouver	McKim, Anson	Vancouver
Cox, Edmund T.	Rossland	Oldfield, James	Saanich
Cumming, Patricia C.	Steveston	*Parish, G. Philip J.	Vancouver
Donegani, Robert G.	Vancouver	Sakamoto, Arthur G.	Whonock
Gilmour, Campbell G.	New Westminster	Salisbury, R. Lawrence	Vancouver
Gray, Neil T.	North Vancouver	Tamura, Yukio	Haney
*Hodgson, William R.	Vancouver	Tremblay, F. Todd	Vancouver

FOURTH YEAR

†Berlet, Roy F.	Vancouver	Poole, Harold C.	Vancouver
*Billings, Frederick L.	Vancouver	Pratt, Jean M.	Victoria
Brown, Reginald H.	Barkerville	Ritchie, Henry T.	Lulu Island
Campbell, M. Lois	Vancouver	†Runkle, Pamela M.	Vancouver
DeBeck, H. Keary	Victoria	Steele, George L.	New Westminster
Dickson, Bruce A.	Vancouver	†Teir, J. Bertrand	Rosebery
†Dougans, Douglas H.	Vancouver	Twiss, Robert D.	Vancouver
*Harris, Kathleen M.	Agassiz	White, Gerald E.	Victoria
McBride, Winifred J.	Ladysmith	Zink, Leonard A.	Sardis
Narod, Milton	Victoria		

GRADUATES

Campbell, Jack J. R.	Vancouver	Morrison, Gillmor I.	Vancouver
Fennell, Edwin J.	New Westminster	MacKay, William R.	Vancouver
Hatcher, Gilbert T.	Vancouver	Pahn, Vadim O.	Vancouver
Hicks, W. Odetta	Agassiz	Pendray, Wilfred C.	Saanich
Hill, Lawrence E.	Victoria	Reid, Edgar C.	Saanichton
Hornby, Cedric A.	Summerland	Rogers, C. Bernard W.	Daysland, Alta.
Inkster, C. Cameron	North Vancouver	Salisbury, Philip J.	Vancouver
Jordan, James V.	Trail	Taylor, Milton C.	Vancouver
Lantz, Andrew W.	Conrich, Alta.	Trumpour, Maurice P. D.	Summerland
Lopatecki, Eugene L.	Vancouver		

OCCUPATIONAL COURSE

FACULTY OF AGRICULTURE

Appleton, Gordon S.	Vancouver	Goodman, Leslie C.	Vancouver
Chapman, Carroll	Vancouver	Long, Andrew M.	Vancouver
Clark, John D.	Vancouver	Peddie, Ida J.	New Westminster
Cohen, Theodore	Vancouver	Turner, Jack H.	Vancouver
Cumming, Alison McN.	Vancouver	Young, Lawrence	Vancouver

*Conditioned.

†Partial.

REGISTRATION FOR 1939-40
FACULTY OF ARTS AND SCIENCE

	Women	Men	Total
First Year	227	334	561
Second Year	138	259	397
Third Year	117	173	290
Fourth Year	112	170	282
Graduates	33	110	143
Social Service	36	10	46
Teacher Training Course	40	29	69
*Directed Training Courses	26	110	136
*Extra-Sessional Classes	14	51	65
*Double Registrations	-13	-42	-55
			—1934

FACULTY OF APPLIED SCIENCE

Second Year	138	138
Third Year	115	115
Fourth Year	90	90
Fifth Year	77	77
Graduates	14	14
		—434

FACULTY OF APPLIED SCIENCE (NURSING)

Second Year	15	15
Third Year	16	16
Fourth Year	12	12
Fifth Year	8	8
Sixth Year	14	14
Public Health Nursing	11	11
Teaching and Supervision	1	1
		—77
		— 511

FACULTY OF AGRICULTURE

First Year	6	43	49
Second Year	5	25	30
Third Year	2	20	22
Fourth Year	5	14	19
Graduates	1	18	19
Occupational Course	1	9	10
			— 149
Total			—2594

	Women	Men	Total
Evening Class in Botany	7	23	30
Summer Session (1939), Faculty of Arts and Science	230	485	715

DEGREES CONFERRED

MAY, 1939

Faculty of Arts and Science

THE DEGREE OF MASTER OF ARTS

(Names in alphabetical order)

- Barss, Walter Malcolmson, B.A. Major: Physics
Minor: Mathematics
Thesis: "The Spectra of Iodine."
- Brearley, Katherine Winnifred Turton, B.A. Major: English
Minor: Education
Thesis: "Some Manifestations of the Ironic Sense in the Works of Thomas Hardy."
- Cook, Francis, B.A. Major: Chemistry
Minor: Physics
Thesis: "The Differential Heats of Adsorption on an Activated Charcoal Surface."
- Corbould, Iris, B.A. Major: Chemistry
Minor: Biology (Botany)
Thesis: "The Effect of Certain Chemicals Upon the Activity of Zymase."
- Davis, Edwin Philip, B.A. Major: Mineralogy
Minor: Palaeontology
Thesis: "Some Studies of Gold and Its Associated Minerals."
- Dill, Charlotte Elva, B.A. Major: Botany
Minor: Zoology
Thesis: "Transpiration and Stomatal Movements of Plants Treated with Sulphur Dioxide."
- Eastham, Arthur Middleton, B.A. Major: Chemistry
Minor: Biology (Botany)
Thesis: "The Carotenoid Pigments of British Columbia Pilchard Oil."
- Ferguson, Helen, B.A. Major: History
Minor: Education
Thesis: "The Development of Communications in Colonial British Columbia."
- Flather, Donald McIntosh, B.A. Major: Education
Minor: Botany
Thesis: "A Study of Type Questions for General Science Tests."
- Free, Norman Saffery, B.A. Major: Mathematics
Minor: Physics
Thesis: "Determination of Bases for Certain Quartic Number Fields."
- Gale, Anne Moira, B.A. Major: English
Minor: Education
Thesis: "The Prose Style of Richard Hooker in 'The Laws of Ecclesiastical Polity.'"
- Hamilton, Rognvald Thore, B.A.Sc. Major: Mathematics
Minor: Physics
Thesis: "Trojan Satellites (Limiting Case)."
- Lower, Joseph Arthur, B.A. Major: History
Minor: Education
Thesis: "The Grand Trunk Pacific Railway and British Columbia."
- Moore, James August, B.A. Major: Philosophy and Psychology
Minor: Education
Thesis: "The Intelligence and Scholarship of Junior High School Students."

THE DEGREE OF MASTER OF ARTS—(Continued)

Poisson, Rodney Peter Dominic, B.A.....	Major: English Minor: Education
Thesis: "The Heroic Couplet in the Plays of Shakespeare."	
Shipton, Cuthbert Bernard, B.A.....	Major: Chemistry Minor: Physics
Thesis: "The Thermal Decomposition of Azomethane in the Presence of Nitric Oxide."	
Vance, Helen Madeleine, B.A.....	Major: German Minor: Psychology
Thesis: "The Legend of Parsifal and the Grail and Its Treatment by Wolfram von Eschenbach and Richard Wagner."	
West, Kenneth Albert, B.A.....	Major: Chemistry Minor: Mathematics
Thesis: "The Carotenoid Pigments of British Columbia Pilchard Oil."	
Wilson, John Abraham Ross, B.A.....	Major: Education Minor: Philosophy
Thesis: "The Philosophy of H. Wildon Carr and Its Educational Implications."	

THE DEGREE OF BACHELOR OF ARTS

*With Honours**(Names in alphabetical order)*

Ashford, Walter Rutledge.....	1st Class Honours in Chemistry
Beattie, Roderick Norman.....	1st Class Honours in History
Bell, Robert Edward.....	1st Class Honours in Mathematics and Physics
Bishop, Ernest Linton.....	1st Class Honours in Philosophy and Psychology
Boroughs, Robert Joseph.....	1st Class Honours in History
Boyd, Otilie Grace.....	2nd Class Honours in Biology (Zoology option)
Brawn, James Snelgrove.....	1st Class Honours in Chemistry
Eastham, Helen Mavis.....	2nd Class Honours in French
Fisher, Herbert Ernest.....	1st Class Honours in Chemistry
Flower, Richard Edward.....	1st Class Honours in Mathematics and Physics
Freed, Dorothy Mary.....	1st Class Honours in Latin and French
Fulton, Clarence Oscar.....	1st Class Honours in Bacteriology and Preventive Medicine
Godson, Warren Lehman.....	1st Class Honours in Chemistry
Grassie, Vernon Robert.....	1st Class Honours in Chemistry
Griffin, Frederick Philip.....	1st Class Honours in Chemistry
Grigsby, Faith.....	1st Class Honours in English Language and Literature
Guthrie, John.....	2nd Class Honours in Chemistry
Heddle, Rognvald Douglas.....	2nd Class Honours in Chemistry
Heisler, John Phalan.....	2nd Class Honours in History
Howatson, Charles Henry.....	2nd Class Honours in Geology
Manders, David Frederic.....	2nd Class Honours in Mathematics and Physics
Marshall, James Kelso.....	2nd Class Honours in Mathematics and Physics
Milley, Hermon Reginald.....	1st Class Honours in Mathematics
Mizuhara, Shaw.....	2nd Class Honours in Chemistry

THE DEGREE OF BACHELOR OF ARTS—HONOURS—(Continued)

McCarter, John Alexander.....	2nd Class Honours in Chemistry
Macaulay, Archie Marion.....	1st Class Honours in History
McGuire, John Carson.....	1st Class Honours in General Biology and Psychology
McKellar, Janet Hamilton.....	2nd Class Honours in Bacteriology and Preventive Medicine
MacMillan, Richard Butler.....	2nd Class Honours in Chemistry
Newton, Theodore Duddell.....	1st Class Honours in Mathematics and Physics
Pepper, James Morley.....	1st Class Honours in Chemistry
Pepper, Tom Peter.....	1st Class Honours in Mathematics and Physics
Perkins, Maurice Fred.....	1st Class Honours in Economics
Pierce, William Gordon.....	1st Class Honours in Chemistry
Robertson, Robert Frank Struan.....	1st Class Honours in Chemistry
Robertson, Struan Turner.....	1st Class Honours in Economics and Political Science
Sibley, William Maurice.....	1st Class Honours in Philosophy and Psychology
Smith, David Burrard.....	1st Class Honours in Chemistry
Staples, Alan Baird.....	2nd Class Honours in Geology
Stuart, Frank Albert.....	2nd Class Honours in Chemistry
Swainson, Neil Alexander.....	2nd Class Honours in History
Volpe, Paul Anthony.....	2nd Class Honours in History and Political Science
Wilson, Reginald Alistair.....	1st Class Honours in Philosophy and Psychology

THE DEGREE OF BACHELOR OF ARTS

*General Course**(Names in alphabetical order in each class)**Class I*

Cartmell, Clara E.	Large, Kelvin D. M.
Harris, Iris G.	Matthison, C. Rann
Henderson, Albert E.	Morris, Effie K.
Henderson, Robert W.	McTaggart, Donald E.
Keenleyside, Kathleen B.	Poole, Robert V.
Kemp, Doris E.	Wright, Arthur B.

Class II

Aitken, Janet L.	Carter, Evelyn M. C.
Aldous, John G.	Clark, Fredrick H.
Anderegg, Raymond V.	Couch, Edgar A.
Armitage, David H.	Day, Jessie
Armstrong, C. Margaret	Deas, Margaret
Bakhuys-Roozeboom, Denise	Dimock, Eva L.
Barss, Ruth E.	Ducklow, Albert J.
Beavan, Rodney	Dunbar, Hazel M.
Bedner, Anne M.	Duncan, Jean
Bridgman, Stella M.	Eacrett, Mary G.
Brown, A. Bruce	Ellis, W. Ivy
Brown, Dorothy L.	Ferguson, Alex N.
Brown, Joanne V.	Ford, Douglas A.
Burke, Eileen F.	Freeland, Gertrude L.
Calnan, Wilfrid M.	Guyett, Beatrice K.
Carr, Catherine A. B.	Hall, Barbara McC.

THE DEGREE OF BACHELOR OF ARTS—GENERAL COURSE—(Continued)

Harris, Kathleen E. S.	McLagan, Ross M.
Harris, Lois M.	McLaren, John A.
Hayman, Robert M.	McNair, Francis E.
Healey, Beatrice E.	McPhee, Howard McL.
Henmi, Eiko	Nevison, Myrne B.
Hind, John R.	Norie, I. Elisabeth S.
Horne, Thomas P.	Piercy, Helen W.
Hunden, David J.	Poole, John B.
Irish, E. J. Wingett	Rome, Harold
Johnston, D. Kathleen	Rothstein, Norman L.
Jones, Elmer A.	Saunders, Genevieve L.
Kinnaird, Jean S.	Sharp, Alexander C.
Kinney, Dorothy	Shephard, Alfred H.
Kitchen, Alfred J.	Simpson, Robert E.
Lean, Marjorie	Smith, Annette
Letham, B. Lucile	Smith, M. Lorne
Lighthouse, Margaret L.	Smith, V. Delle
Lock, Arthur E.	Sones, W. Ernest
Lynn, Shirley E.	Stewart, Milton A.
Mackie, Geoffrey DeF.	St. John, Claire R.
Martin, Arthur L.	Stroyan, Edward G.
Meredith, Jack R.	Sullivan, Isabel M.
Mostar, Roman	Tambellini, Albert P.
McCann, Anna St. C.	Vance, Marian S.
Macdonald, Alan S.	Waddell, David B.
Macdonald, Alexander B.	Wayles, Phyllis A.
McEwen, Lois S.	Whiteford, Edith M.
MacIver, Donald W.	Wright, Kenneth W. T.
Mackenzie, John M.	Younger, Marion J.
MacKenzie, Margaret J.	

Passed

Bain, Florence	Kenmuir, Patricia M.
Bastin, Hilary D.	Knox, Robert D.
Bearce, Barbara V.	Leung, Ruth
Bossy, Elinor M.	Loftus, Frances M.
Brand, Alison M.	Lui, Chak F.
Burke, Herbert C.	Martin, David D.
Calhoun, Joyce N.	Montgomery, Frances G.
Cameron, M. Joy	Myers, John D.
Carter, Anne E.	McCabe, H. John
Chowne, Audrey M.	MacKenzie, Kathleen D.
Chutter, Patricia M.	McKinnon, Elizabeth A.
Cosens, Miriam E.	MacLeod, Margaret I. C.
Cummings, Dorothy P.	McRae, Jean E.
Dean, Venie L.	Patch, J. Frank
Evans, Margaret A.	Reid, Marian M.
Field, Marion C.	Ryan, Mary F.
Field, Winifred C.	Sadler, Nancy P.
Findlay, Marjorie C.	Seldon, Janet L.
Flook, Mildred S.	Sellens, Edith J.
Hill, Lawrence E.	Stewart, Caroline J.
Holmes, Cicely E. F.	Toshach, Phyllis E.
Jenkins, Morgan	Truswell, Gloria E.
Johnson, Amuri R.	West, E. Jean
Jones, Frances P.	

THE DEGREE OF BACHELOR OF ARTS—GENERAL COURSE—(Continued)

Passed Unranked

Crawley, C. David	McDaniel, E. Stewart
Davidson, Henry H. A.	Macdonald, James B. L.
Fiorillo, Erman N.	McIntyre, William J.
Frith, Monica Mary	Peirson, Gertrude Mae
Gibbs, Sheila M.	Saunders, Helen Alice
Jagger, Stuart	Shortley-Luttrell, Colborne H.
King, Robert Henry	Sparkes, Edward Melvin
Laidlaw, William A.	Thomson, James W.
Mayers, Helen Frances	Turner, Frank J. E.
Minshull, Raymond G.	Walters, Edith Marie
Morrison, John G.	Wilson, Ridgeway William
McCann, Elizabeth Kenny	Yip, Sun Wing

THE DEGREE OF BACHELOR OF COMMERCE

*With Honours**(Names in alphabetical order in each class)**Class I*

Thomson, James W.

Class II

Green, John W.

*General Course**(Names in alphabetical order in each class)**Class I*

Doughty, John H.

Class II

Birmingham, Virginia S.	Goldberg, Arnold
Clarke, Arthur C.	Laidlaw, William A.
Cruickshank, D. Gordon	Smith, Robert C. R.
Darling, G. Dudley	Wilson, George S.
Fiorillo, Erman N.	

Passed

Carter, David C.	MacFayden, Jean W.
Costello, J. Brooks	Safarik, Edward J.
Gibbs, Sheila M.	Shepherd, George S.
Jagger, Stuart	Smith, Ralph A.
Macdonald, James B. L.	Turner, Frank J. E.

Faculty of Applied Science

THE DEGREE OF MASTER OF APPLIED SCIENCE

(Names in alphabetical order)

Davenport, Charles Henry, B.A.Sc.....	Major: Chemistry
	Minor: Physics
Thesis: "The Determination of Physical Properties of the Cis and Trans Isomers of Decahydronaphthalene."	
Davies, George Francis, B.A.Sc.....	Major: Chemistry
	Minor: Physics
Thesis: "Investigation of the Specific Heat of Cis Decahydronaphthalene."	
Elfstrom, Roy Harold, B.A.Sc.....	Major: Metallurgy
	Minor: Geology
Thesis: "The Flotation of Non-Sulphide Minerals."	

THE DEGREE OF MASTER OF APPLIED SCIENCE—(Continued)

Killin, Alan Ferguson, B.A.Sc.....	Major: Petrology Minor: Economic Geology
Thesis: "A Petrographic Study of Rocks from the Box Mine, Athabaska Lake."	
McCammon, James William, B.A.Sc.....	Major: Petrology Minor: Economic Geology
Thesis: "A Mineralogical Study of Some Granites from the East Half of the Smithers Map Sheet."	
White, William Harrison, B.A.Sc.....	Major: Mineralogy Minor: Geology (Physical)
Thesis: "Geology and Ore-Deposition of Silbak Premier Mine."	
Yatabe, Eiji, B.A.Sc.....	Major: Chemistry Minor: Physics
Thesis: "The Density and Transition Points of N-Tetracosane."	

THE DEGREE OF BACHELOR OF APPLIED SCIENCE
(Names in alphabetical order in each class)**Chemical Engineering***Honours*

Govier, George Wheeler	Rowbotham, Edwin W.
Patterson, Ralph F.	

Class I

Hartley, Fred L.

Class II

Collicutt, Sidney A.	King, James G.
Davis, Jack	Mead, Bruce R.
Davis, Trevor C. M.	MacDermot, John G.

Passed

Lyons, Robert H.	Webster, Charles R.
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Civil Engineering*Honours*

Donaldson, David R.	Ford, Sherwood D.
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Class II

Burnett, Daniel A.

Passed

Kennedy, Jack S.	McLeod, James D.
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Electrical Engineering*Honours*

Garvie, Laurence W.	Sutton, Arthur L.
Hetherington, W. L.	

Class II

Breeze, John E.	Hand, Carl E.
Davidson, Henry H. A.	Harrison, George E.
Erlebach, Graham B.	Hughes-Games, W. E.
Farmer, Philip J.	Jones, Frank B.
Gordon, Robert C.	Layard, Paul R.

Passed

Coulson, Alexander	Morris, Robert A.
Fulton, Oscar R.	McDowell, Gordon E.
Hill, John A.	

THE DEGREE OF BACHELOR OF APPLIED SCIENCE—(*Continued*)**Forest Engineering***Class II*

Brun, Paul R.
Custance, John P.
Lyons, Chester P.

Minns, George W.
Stokes, John S.

Geological Engineering*Class II*

Allen, Alfred R.
Bacon, William R.
Crosby, Robert G.

Lamb, John
Nesbitt, Bertram I.

Passed (Unranked)

Ohlson, Robert F.

Mechanical Engineering*Honours*

Phillips, Roy A.

Class II

McDougal, Allan R. B.
Stewart, Donald A.

Témoin, René J.

Metallurgical Engineering*Honours*

Leckie-Ewing, H. W. B.

Class I

Larson, Arthur G.

Class II

Adams, Percy A.
Kipp, Harold H.

Parker, William E.

Mining Engineering*Honours*

Jones, Frank R. R.

Class II

Allan, Leonard
Gilmour, Stuart S.
Lambert, Maurice J.
Leggat, W. Strathearn
Macdonald, Colin H.
McElhanney, Robert G.
Rankin, Donald A.

Skinner, Ralph
Stewart, John W.
Wilson, Ridgeway W.
Wilson, Sidney E.
Wright, Donald M.
Young, John W.

Passed

Hamersley, Hugh L. S.

Ohlson, Robert F.

THE DEGREE OF BACHELOR OF APPLIED SCIENCE—(Continued)

Nursing and Health

(Names in alphabetical order in each class)

Class I

Henderson, Caroline M.

Class II

Capelle, Pauline M. A.

McMartin, Pauline K.

Jackson, Florence I.

Trant, Helen M.

John, Martha M.

Wilson, Beverly E.

Lehman, Elizabeth D.

Faculty of Agriculture

THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE

(Names in alphabetical order)

Derrinberg, Robert Caines, B.S.A.....Major: Animal Husbandry
Minor: AgronomyThesis: "An Examination of Sheep Breeding, Production and Marketing
Problems in British Columbia."Kadzielawa, Arthur Stephen, B.S.A.....Major: Dairy Science
(Dairying and Animal Husbandry)
Minor: Agronomy

Thesis: "The Nature of the Activators Required by Lactic Acid Bacteria."

Longmore, Roderick Hector, B.A., B.S.A.....Major: Plant Nutrition
Minor: Entomology and
Horticulture

Thesis: "Effects of Commercial Fertilizers on the Notted Gem Potato."

Menzies, James David, B.S.A.....Major: Botany (Plant
Pathology)Thesis: "The Anthracnose Disease of *Daphne Mezereum* caused by
Marssonina daphnes (Desm. et Rob.) Mag."

THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

(Names in alphabetical order in each class)

Class I

Campbell, John J. R.

King, Robert H., B.A.

Cook, Garrett M.

Taylor, Douglas K.

Hicks, W. Odetta

Class II

Easler, Lloyd

Ritchie, Myles H., B.A.

Inkster, C. Cameron

Salisbury, Philip J.

Jordan, James V.

Staniforth, Josephine M.

Lawrance, Howard W.

Taylor, Milton C.

Lopatecki, Eugene, B.A.

Weston, Stanley

MacKay, William R.

'Wolfe, Samuel

Morrison, Gillmor I.

Yip, Howard W.

Passed

Berry, Francis K.

Stokvis, Wilfred D.

Gray, John L.

DEGREES CONFERRED

OCTOBER, 1939

Faculty of Arts and Science

THE DEGREE OF MASTER OF ARTS

(Names in alphabetical order)

- Bell, Donald Kellie, B.A., B.Com..... Major: Economics
 Minor: Philosophy
 Thesis: "Health Insurance in British Columbia."
- Edgar, Edmund George, B.A..... Major: Education
 Minor: History
 Thesis: "A Study of the Correlation Between Intelligence, School Grades and After-School Occupation in the West Vancouver High Schools."
- Gaitskell, Charles Dudley, B.A..... Major: Education
 Minor: Philosophy
 Thesis: "An Experiment in Art Instruction in the Peace River Educational Area."
- Gwyn, Agnes Margaret, B.A..... Major: Zoology
 Minor: Botany
 Thesis: "The Development and Relative Growth of the Scales of the Pacific Herring (*Clupea Palasii*)."
- Riddehough, Geoffrey Blundell, B.A. (Brit. Col.),
 M.A. (Calif.)..... Major: Latin
 Minor: Greek
 Thesis: "The Mercenaries of Ancient Carthage."

THE DEGREE OF BACHELOR OF ARTS

With Honours

(Names in alphabetical order in each class)

- Bannerman, Lloyd Charles Francis..... Second Class Honours in Philosophy and Psychology
- Butler, William Royce..... First Class Honours in English Language and Literature
- Cave-Browne-Cave, Genille First Class Honours in Chemistry
- Darling, Thomas Graham..... First Class Honours in Economics and Political Science
- Davis, Mary McNeilage..... First Class Honours in Philosophy and Psychology
- Detwiller, Lloyd Fraser..... Second Class Honours in Economics
- Ferguson, Byron Laird..... Second Class Honours in English Language and Literature
- Kidd, George Pirkis..... Second Class Honours in History
- McDougall, Robert Law..... First Class Honours in English and Economics and Political Science
- Plaskett, Joseph Francis..... First Class Honours in History
- Richardson, Arthur George..... Second Class Honours in Philosophy and Psychology
- Rothstein, Samuel First Class Honours in French and English

THE DEGREE OF BACHELOR OF ARTS
General Course
(Names in alphabetical order in each class)

Class II

Bailey, Thomas	Killip, Bessie H.
Barker, Amy	Kimola, Vienna C.
Barrett-Lennard, Dacre L.	Manuel, Harold K.
Breckenridge, David E.	Michell, Cyril A.
Cooper, Burt M.	Nesbitt, Reuben W.
Davidson, R. Harvey	Newberry, John D.
Dempsey, Daniel C.	Ross, Kenneth C.
Fox, Geoffrey E. N.	Stewart, E. Campbell
Gaddes, William H.	Tracy, W. Edward
Ginther, W. Lorne	Trout, M. Ferne
Govier, Percy E.	Watson, Janet A.
Herd, Thomas D.	

Passed

Brown, Malcolm L.	McNish, J. Garnet
English, S. Roy	Macrae, Patricia
Fitch, Jean	Nickerson, William J. M.
Gavin, Alice J.	Pao, Johnson Sun
Gilbert, W. Delmar	Parfitt, Rosie Mai
Harrison, Godfrey Noel	Raphael, Harold
Harvey, Harry E.	Reid, Adam
Horwood, Audrey F.	Routley, Percy C.
Huddleston, Robert	Shepherd, George S., B.Com.
Hunter, J. Lyall	Stordy, Jean
Kennedy, Charles D.	Stradiotti, Henry F.
Munro, Constance E.	Sweet, Arthur F.
Muraro, Sylvio	Wellwood, Evelyn W.
MacInnes, Mary S.	Wilson, Sheila

THE DEGREE OF BACHELOR OF COMMERCE

(Names in alphabetical order)

Passed

Bawden, Rosemary J., B.A.	McCullough, Gordon H., B.A.
Davidson, Robert J. H.	Skaling, Betty D.
Leckie, Roy J.	Westlake, Margaret A.

Faculty of Applied Science

THE DEGREE OF BACHELOR OF APPLIED SCIENCE

(Names in alphabetical order in each class)

Passed

Chemical Engineering

Wilkinson, John T.	Wilson, Ronald S.
--------------------	-------------------

Civil Engineering

Barrett, J. H. Desmond	King, J. Cameron
------------------------	------------------

THE DEGREE OF BACHELOR OF APPLIED SCIENCE—(Continued)

Electrical Engineering

Beeching, Thomas A. G.

Larsen, M. Patrick

Geological Engineering

Williams, Wilfrid O.

Mechanical Engineering

Shortley-Luttrell, Colborne H., B.A.

Mining Engineering

MacMillan, Patrick W.

Faculty of Agriculture

THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE

Ritchie, Myles Houston, B.A., B.S.A. Major: Plant Nutrition
Minor: BotanyThesis: "Nutritional Studies with Strawberries and the Breakdown of
the Strawberry in Canning."

THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

Class II

Mouat, Gavin H.

Passed

Saunders, James Bertram

MEDALS, SCHOLARSHIPS, PRIZES AND BURSARIES

AWARDED MAY, 1939

MEDALSThe Governor-General's Gold Medal (Head of Graduating Class for the B.A.
Degree)..... William Maurice Sibley

Honourable Mention—Theodore Duddell Newton

The Kiwanis Club Gold Medal (Commerce)..... James W. Thomson

The United Empire Loyalists' Association Medal (History)..... Anne E. Carroll

The Lefevre Gold Medal and Scholarship (Chemistry), \$150.00—

Warren L. Godson

SCHOLARSHIPS FOR GRADUATES

University Graduate Scholarship, \$200.00..... William Maurice Sibley

The Anne Wesbrook Scholarship, \$125.00..... Theodore Duddell Newton

The Dr. F. J. Nicholson Scholarships—

1. For Chemistry, \$500.00..... Charles H. Davenport, B.A.Sc.

2. For Geology, \$500.00..... William H. White, B.A.Sc.

The Native Daughters of Canada Scholarship, \$50.00—

(Early B. C. History)..... Robert T. McKenzie, B.A.

The B'nai B'rith District No. 4 Hillel Foundation Scholarships, \$125.00 each—

1. Ralph F. Patterson.

2. Maurice F. Perkins.

SCHOLARSHIPS FOR UNDERGRADUATES

I. IN ALL FACULTIES

University Great War Scholarships (First Year)—

1. \$175.00—Anne B. Underhill.
2. \$225.00—Norman A. Gill.

II. IN ARTS AND SCIENCE

Third Year

University Scholarships in Arts and Science (General Proficiency), \$175.00—
Group A—James B. Brown.

Group B—John B. Thwaites.

N. Leo Klein Memorial Scholarship (General Proficiency, Commerce), \$100.00—
Robert W. McRae

Vancouver Women's Canadian Club Scholarship (First in Canadian History),
\$100.00..... Donald G. Pyle, by reversion to Elizabeth A. Stewart

The John and Annie Southcott Memorial Scholarship, \$100.00—
(B. C. History)..... Donald G. Pyle

Second Year

University Scholarships in Arts and Science (General Proficiency), \$175.00—
1. Joyce K. Morris.

2. Robert M. Clark.

The Shaw Memorial Scholarship (First in two of English, Latin and Greek),
\$125.00..... James G. Cameron (English and Latin)

The McGill Graduates Scholarship (First in English and French), \$125.00
Joyce K. Morris, by reversion to Brita H. Vesterback

The Terminal City Club Memorial Scholarship (First in English and Eco-
nomics), \$100.00..... Grace I. Cuthbert

The I. O. D. E. Scott Memorial Scholarship (First in Biology), \$100.00—
William G. Wellington

First Year

Royal Institution Scholarship (General Proficiency), \$175.00—

Ernest A. Boxall	} Equal
John M. R. Margeson	

University Scholarships in Arts and Science (General Proficiency),

1. \$175.00.....	John M. R. Margeson	} Equal
	Ernest A. Boxall	

2. \$225.00.....	Ronald B. Carter	
------------------	------------------	--

The Beverley Cayley Scholarship (First Male Student in English), \$100.00
John M. R. Margeson, by reversion to Edward Gross

The Ahepa Scholarship (Proficiency in Greek), \$75.00—
William M. Sibley, by reversion to D. Mary Freed

III. IN APPLIED SCIENCE

Vancouver Women's Canadian Club Scholarship in Nursing and Health,
\$100.00..... Edith M. Walters

The Dunsmuir Scholarship (Highest in Mining Engineering, proceeding to
the Fifth Year), \$150.00..... John J. A. Crowhurst

University Scholarship in Applied Science (General Proficiency, proceeding
to the Fourth Year), \$225.00..... Charles V. Ryder

SCHOLARSHIPS FOR UNDERGRADUATES—(Continued)

- Royal Institution Scholarship in Applied Science (General Proficiency, proceeding to the Third Year), \$225.00.....H. Vincent Casson
- The G. M. Dawson Scholarship (Highest in Geological Engineering—Geological subjects, proceeding to the Fifth Year), \$50.00.....William H. Mathews
- The B'nai B'rith Auxiliary No. 77 Scholarship (Highest in Chemical Engineering, proceeding to the Fifth Year), \$50.00.....John D. Leslie

IV. IN AGRICULTURE

- University Scholarship in Agriculture (General Proficiency, proceeding to the Second Year), \$175.00.....Nora E. Neilson
- The David Thom Scholarship (General Proficiency, proceeding to the Third Year), \$100.00.....James E. Oldfield
- The British Columbia Fruit Growers' Association Golden Jubilee Scholarship (proceeding to the Horticultural Course of the Fourth Year), \$100.00—
John B. Teir

PRIZES

I. IN ALL FACULTIES

- The University Essay Prize (Books), \$25.00.....Faith Grigsby
- | | |
|-------------------------|---|
| Honourable Mention..... | Reginald Jessup } Awarded English |
| | Robert L. McDougall } Department Prizes |
- 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—(Two prizes available for 1939)—
R. Norman Beattie } Equal
Archie M. Macaulay }
- The H. Nemichi Essay Prize, \$50.00—No award (Government 4 not offered during 1938-39).

III. IN APPLIED SCIENCE

- The Convocation Prize (General Proficiency in Fifth Year), \$50.00—
George W. Govier
- The Walter Moberly Memorial Prize (Engineering Thesis in Fifth Year) (Books), \$25.00.....Arthur Leslie Sutton (Elect. Eng.)
- "The Tomlinson Boiler and 2500 KVA Turbo-Alternator at Ocean Falls, B. C."
- The Association of Professional Engineers' Prizes (Books), \$25.00 each—
1. J. Howard Kemper—Chemical Engineering—"Fine Grinding, Modern Theory and Practice."
 2. Roy T. Bogle—Mechanical Engineering—"The Selection, Heat Treatment, and Forging of Hollow Rock Drill Steel."
 3. Davis M. Carey—Forest Engineering—"Projection Printing of Aerial Photographs."
 4. Milford S. Loughheed—Geological Engineering—"Physical Features of the Western Portion of the Naas River Map-Area, with Special Reference to the Bear River Map-Area."
 5. John J. A. Crowhurst—Mining Engineering—"Drifting Practice at Sheep Creek Gold Mines."
- The Engineering Institute of Canada Prize (Fourth Year), \$25.00—
John D. Leslie

PRIZES—(Continued)

The Provincial Board of Health Prizes in Public Health Nursing, \$100.00—

1. Caroline Henderson, \$35.00.
2. Pauline Capelle, \$25.00.
3. Elizabeth Lehman, \$20.00.
4. Isabel Mungen, \$20.00.

BURSARIES

The Captain LeRoy Memorial Bursary (preference to returned soldiers or dependents), \$250.00..... Benjamin N. Moyls

The Khaki University and Y. M. C. A. Memorial Fund Bursaries, \$100.00 each (in alphabetical order)—

- | | |
|----------------------------|--------------------------------------|
| 1. Bryan C. Colwell. | 6. Margaret Lowe (Victoria College). |
| 2. Patricia C. Cumming. | 7. Richard A. Montgomery. |
| 3. D. Allan Hamilton. | 8. Elspeth Munro. |
| 4. Victor R. L. Handforth. | 9. Earle W. Piercy. |
| 5. Harry D. Laronde. | 10. Royce Rich. |

The University Women's Club Bursary, \$100.00..... Margaret K. Thompson

The Geldart Riadore Bursary, \$175.00..... Winifred J. McBride

THE FOLLOWING AWARDS ARE ANNOUNCED BY SENATE

The Rhodes Scholarship..... Jack Davis

French Government Awards which are made through the University by the French Consul for Western Canada:

The French Government Scholarship (18,000 francs)

Donald F. Munro, B.A.

The French Government Medal (French)..... Clara E. Cartmell

The French Government Book Prize (French)..... M. Alice Mather

AWARDED AFTER THE MAY CONGREGATION

Senior Matriculation Royal Institution and University Scholarships:

- | | | |
|---------------------------|-----------------------------------|---------|
| Provincial, \$175.00..... | Margaret I. McClory | |
| \$175.00..... | John J. Enwright | } Equal |
| \$175.00..... | *Ernest A. Boxall | |
| | *by reversion to Donald G. Duncan | |
| \$175.00..... | Betty H. Corbould | |
| \$175.00..... | Alfred L. Bonutto | |
| \$175.00..... | Robert G. Ross | |

Junior Matriculation Royal Institution and University Scholarships:

- | | | |
|---------------------------|-----------------------------------|---------|
| Provincial, \$175.00..... | Carl E. Pearson | } Equal |
| (Special, \$175.00)..... | Beverly M. Witter | |
| District 1—\$175.00..... | Charles W. Cooper | } Equal |
| \$175.00..... | Marjorie A. Aldritt | |
| (Special—\$175.00)..... | Arthur S. Rashleigh | |
| District 2—\$175.00..... | Geoffrey Caine | |
| \$175.00..... | Hiroji R. Yamanaka | |
| | by reversion to Patricia M. Tapay | |
| District 3—\$175.00..... | Edgar J. Lovick | |
| \$175.00..... | Daima Edwards | |
| District 4—\$175.00..... | Hugh U. Hall | |
| \$175.00..... | Neil L. Wilson | |
| District 5—\$175.00..... | Norma A. Erickson | |
| \$175.00..... | Minoru Saito | |
| | by reversion to Irene Nelson | |

AWARDED AFTER THE MAY CONGREGATION—(Continued)

District 6—\$175.00.....	Blanche M. Paul
\$175.00.....	Catherine M. J. Ormsby
	by reversion to Harold D. Bartholomew,
	by reversion to Gerald T. Cundhill } Equal
	Anne C. Beddome } Equal
	by reversion to Anne C. Beddome
District 7—\$175.00.....	John L. Tiedje
\$175.00.....	Isaac Haile
The Summer Session Students' Association Scholarship, \$30.00—	W. Gilmour Clark
The British Columbia Teachers' Federation Scholarship, \$50.00.	George Wilson
The G. M. Dawson Scholarship, \$50.00, monetary value relinquished by William H. Mathews in favour of the student with second highest standing; awarded by reversion to Charles S. Ney.	
The Standard Oil Company of British Columbia Limited Scholarship, \$600.00—	Ralph F. Patterson
A B'nai B'rith District No. 4 Hillel Foundation Scholarship, \$125.00, relinquished by Ralph F. Patterson, awarded by reversion to and relinquished by Odetta Hicks on receiving a National Research Council Bursary, awarded by reversion to Eugene L. Lopatecki.	
A Royal Institution Scholarship, First Year Arts, \$175.00, relinquished by Ernest A. Boxall, awarded by reversion to Edward Gross.	
The Beverley Cayley Scholarship, \$100.00, relinquished by Edward Gross, awarded by reversion to Leonard Cox.	
Khaki University and Y. M. C. A. Memorial Fund Bursaries, \$100.00 each, relinquished by D. Allan Hamilton and Earle W. Piercy, awarded by reversion to John S. Hole and Eric P. Nicol.	
The American Woman's Club Bursary, \$140.00.....	Emily A. Fraser
The Inter-Sorority Alumnae Club Bursary, \$150.00.....	Eileen R. Keel
The Mildred Brock Memorial Bursary, \$75.00.....	Clara E. Cartmell
The Lady Laurier Club Bursaries, \$50.00 each—	Iris G. Harris, Phyllis Wayles
The Frances Milburn Bursary, \$150.00.....	Grace I. Cuthbert
The David Thom Bursaries—	
\$100.00.....	Florence Tamboline
\$60.00.....	Nora E. Neilson
\$75.00.....	Bruce Dickson
The William MacKenzie Swan Memorial Bursary, \$250.00.....	John D. Leslie
The Alliance Francaise Bursary, \$50.00.....	Lionel J. S. Metford
The Phil Wilson Bursary in Forestry, \$225.00.....	Ian T. Cameron
The balance of a Dr. F. J. Nicholson Scholarship in Chemistry, \$250.00, relinquished by William M. Morris, awarded by reversion to Genille Cave-Browne-Cave.	
The balance of a B'nai B'rith District No. 4 Hillel Foundation Scholarship, \$62.50, relinquished by Herman Nemetz, awarded by reversion to John E. Breeze.	
University Scholarship in Nursing and Health, \$175.00.....	Mary F. Dunfield
The Britannia Mining and Smelting Company Limited Scholarship, \$250.00—	Alfred G. Lyle
The Cariboo Gold Quartz Mining Company Limited Scholarship, \$100.00—	Heward W. Little

THE UNIVERSITY OF BRITISH COLUMBIA

UNIVERSITY SUMMER SESSION, 1941

Seven Weeks—July 7th to August 22nd

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-sessional 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 67-181.)

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 82), 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 82, 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.

FEES

For statement of fees, see Page 42.

EXAMINATIONS AND ADVANCEMENT

1. Summer Session examinations are held at the close of the Summer Session. Students attending Extra-sessional 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-sessional 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

During normal times the University of British Columbia Contingent, Canadian Officers' Training Corps, provides opportunities for University students to obtain War Office certificates of qualification as officers in the Canadian Militia and other Empire Forces. However, at the outbreak of the war, the syllabus for the Corps was modified so that students might take the regular qualifying examinations as given in Provisional and Royal Schools under the Department of National Defence. Also, membership in the Corps was opened to graduates of any accredited university.

The Corps provides opportunities for students who wish to qualify for commissions in the Canadian Active Service Force or who merely wish to take some military training while completing their undergraduate course.

General supervision over the activities of the Corps is exercised by a University Committee on 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 with the work of the Corps is given by members of the various units of the C. A. S. F. The Unit is under the command of Lieutenant-Colonel Gordon M. Shrum, M.M. The present establishment is 396 all ranks.

Students wishing information regarding the activities of the Corps should apply at the C. O. T. C. Orderly Room.

STUDENT ORGANIZATION

Alma Mater Society

OFFICERS OF THE ALMA MATER SOCIETY

President: John W. Pearson.
Secretary: Ruth Hutchinson.
Treasurer: John H. Stevenson.

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 has charge of the *Student Handbook*, the *Ubysey*, the *Totem*, which is the College Annual, and the *Student Directory*. In the first of these an attempt is made to compile information valuable to the undergraduate. The *Ubysey*, 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 *Student Directory* lists the addresses and telephone numbers of all members of the Alma Mater Society.

The Literary and Scientific Executive

The Literary and Scientific Executive co-ordinates the functions of the many clubs on the campus. Its President represents the clubs on the Students' Council. Among the constituent organizations of the Literary and Scientific Society are the following:

In the Players Club, membership is granted after competitive try-outs to those whose talents lie in this direction.

In the Musical Society, membership is granted after competitive try-outs. Orchestra and chorus work is carried on under professional leadership.

Public Speaking and Debating Clubs include the Parliamentary Forum, which is open to all students and which participates in the Western University Debating League, the Vancouver Debating

League, and debates with other universities; and the Women's Public Speaking Club.

The Engineering Clubs are: G. M. Dawson Geological Discussion Club, University Engineering Society, the American Institute of Electrical Engineers.

The Clubs dealing with Intellectual Problems are: The Letters Club, Le Cercle Français, La Canadienne, German Club, Historical Society, International Relations Club, Biological Discussion Club, the Chemistry Society, the Forestry Club, the Mathematics Club, the Physics Club, the Agriculture Discussion and Livestock Club, the Social Problems Club, the University Branch of the B. C. Teachers' Federation, the Psychology Club.

The Social Clubs are: Cosmopolitan Club, Japanese Students' Club, Chinese Students' Club.

The Religious Clubs are: The Students' Christian Movement, the Varsity Christian Union, the Menorah Society, the Newman Club.

The Monro Pre-Medical Society is an organization especially designed for those students going on into medicine.

The Law Society is especially designed for prospective law students.

The Varsity Band and the Varsity Dance Orchestra provide opportunities for those who play musical instruments.

The Mamooks is the campus service organization, participating in yell leading, ticket selling, decorating, etc.

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 two teams in the City Cagette League, plays challenge games, and competes in the 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 Outdoor 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, Volley-ball, Swimming, etc., for which points are awarded, the winning classes being the holders of the Chris. Spencer Cup for the ensuing year.

Points are given for women's participation on athletic teams, 200 points constituting a Big Block Award and membership in the Big Block Club. The Women's Big Block Club was organized to maintain a high standard of awards.

The administrative body of the Women's Athletic Association is the Women's Athletic Directorate. It is the object of the Directorate to foster the participation of the women students in the athletic activities on the campus to the best interests of the students and the University as a whole.

Personnel of the Directorate is as follows: The President of the Women's Athletic Association, two student members, two Faculty members, and Miss G. E. Moore.

The Women's Athletic Association is affiliated with the Women's Amateur Athletic Federation of Canada.

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, Track, and Training Club.

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: Fred D. Bolton, B.A., B.A.Sc.
Secretary: K. Marguerite Manson, B.A.
Treasurer: Edgar N. Brown, B.A.

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 quarterly, and is sent to active members of the association.

Further information concerning the Association may be obtained through Miss Margaret Morrison, Records Secretary, Registrar's office, University.

Notices of change of address and reports in regard to the activities of members should be sent to Miss Morrison.

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.
 JEFFREE A. CUNNINGHAM, B.A. (Queen's), Registrar, Assistant Professor of Biology.
 MISS H. RUTH HUMPHREY, B.A. (Mount Allison), M.A. (Oxon), Assistant Professor of English.
 WILLIAM ROBBINS, M.A. (Brit. Col.), Assistant Professor of English.
 W. HARRY HICKMAN, M.A. (Brit. Col.), Assistant Professor of French.
 GEORGE P. BLACK, M.A. (Man.), Assistant Professor of Classics.
 EDWARD 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 and Psychology.
 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 A or 1, or Physics A or 1....	3
(f) Three courses, not already chosen, selected from the following:	
Biology 1, Chemistry A, 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

†Subject to Regulations "2," "3" and "4" of the Faculty of Arts and Science, The University of British Columbia.

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 78.)

For further information in reference to Faculty, Courses of Study, etc., see Calendar of Union College.

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

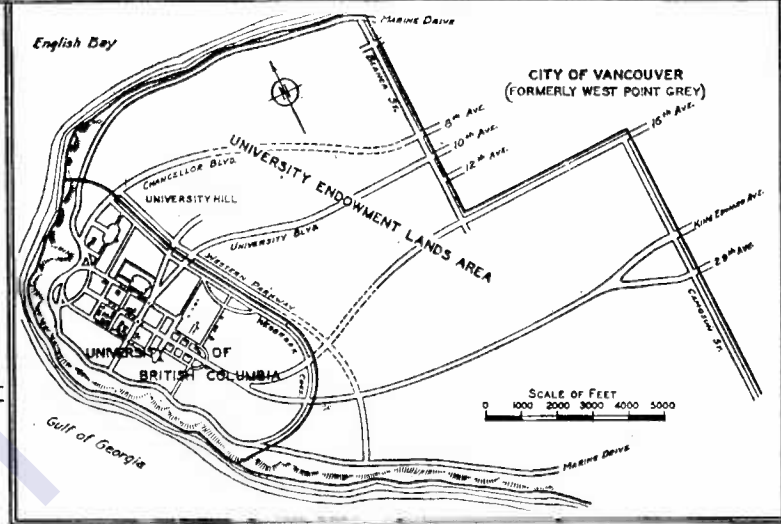
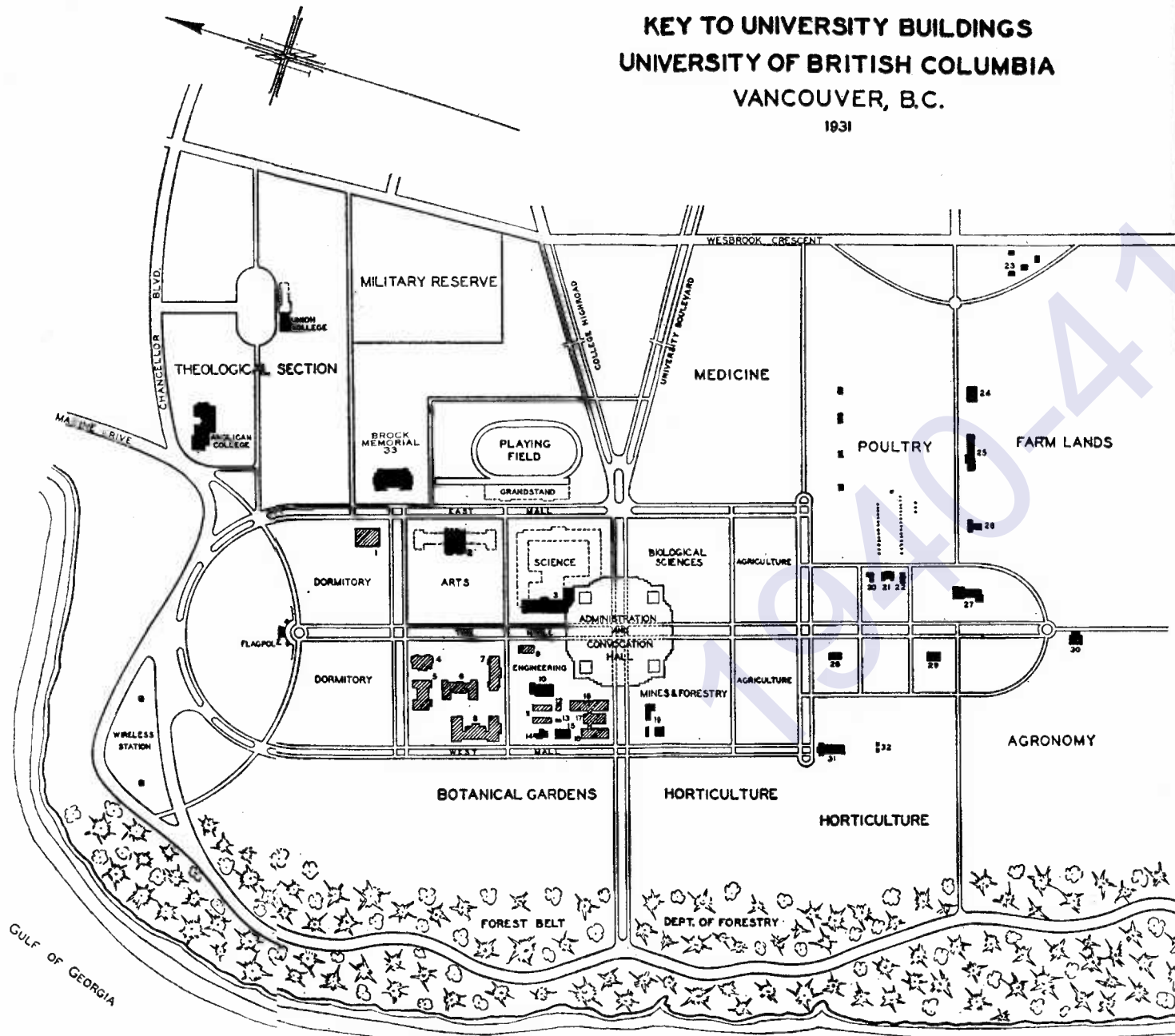
REV. D. P. WATNEY, B.A., B.D.

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 78.)

For further information in reference to Faculty, Courses of Study, etc., see Calendar of the College.

KEY TO UNIVERSITY BUILDINGS UNIVERSITY OF BRITISH COLUMBIA VANCOUVER, B.C.

1931



KEY MAP - UNIVERSITY OF BRITISH COLUMBIA AND ITS RELATION TO GREATER VANCOUVER

REFERENCE NUMBERS

- 1 GYMNASIUM
- 2 LIBRARY
- 3 SCIENCE
- 4 ADMINISTRATION
- 5 AUDITORIUM, CAFETERIA
- 6 ARTS
- 7 AGRICULTURE
- 8 APPLIED SCIENCE
- 9 BUS TERMINAL
- 10 POWER HOUSE
- 11 GARAGES
- 12 CAMPUS TOOL HOUSE
- 13 RECEIVING HOUSE
- 14 FIREHALL
- 16 WORKSHOPS
- 18 MINING, METALLURGY & HYDRAULICS
- 17 ELECTRICAL LABORATORIES
- 19 MECHANICAL LABORATORIES
- 20 FEDERAL FOREST PRODUCTS LABORATORIES
- 21 FARM DAIRY
- 22 VOCATIONAL BUILDINGS (AGRICULTURAL)
- 23 FARM COTTAGES
- 24 SHEEP BARN
- 25 BEEF BARN
- 26 PIGGERY
- 27 DAIRY BARN
- 28 HORTICULTURAL BARN
- 29 AGRONOMY
- 30 HORSE BARN
- 31 GREENHOUSE
- 32 FORESTRY FIELD HOUSES
- 33 BROCK MEMORIAL

BUILDINGS

- ADMINISTRATION 4
- AGRICULTURE 7
- AGRONOMY 29
- APPLIED SCIENCE 8
- ARTS 6
- AUDITORIUM 5
- BEEF BARN 25
- BUS TERMINAL 9
- CAFETERIA 5
- CAMPUS TOOL HOUSE 12
- DAIRY BARN 27
- ELECTRICAL LABORATORIES 17
- FARM COTTAGES 23
- FARM DAIRY 20
- FEDERAL FOREST PRODUCTS LABS. 19
- FIREHALL 14
- FORESTRY FIELD HOUSES 32
- GARAGES 11
- GREENHOUSE 31
- GYMNASIUM 1
- HORSE BARN 30
- HORTICULTURAL BARN 28
- HYDRAULICS LABORATORY 18
- LIBRARY 2
- MECHANICAL LABORATORIES 19
- MINING & METALLURGY 16
- PIGGERY 26
- POWER HOUSE 10
- RECEIVING HOUSE 13
- SCIENCE 3
- SHEEP BARN 24
- VOCATIONAL BUILDINGS (AGRICULTURAL) 21, 22
- WORKSHOPS 15
- BROCK MEMORIAL 33

■ PERMANENT BUILDINGS
▨ SEMI-PERMANENT BUILDINGS

SCALE OF FEET
0 500 1000 1500