

The University
OF
British Columbia



CALENDAR

TWENTY-SEVENTH SESSION
1941-1942

VANCOUVER, BRITISH COLUMBIA
1941

CHANGES IN CALENDAR REGULATIONS

Students are warned not to assume that regulations remain unchanged from year to year. They should note the regulations and outlines of courses as these appear in this Calendar. Attention is called particularly, however, to the new regulations in the Faculty of Arts and Science in regard to the conditions under which supplementals are allowed, as set forth on page 106.

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. Two classes of students are eligible for such awards: (a) those who have previously received these bursaries, and who have maintained a satisfactory academic record; (b) senior students in scientific courses in all three faculties. 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, 1941. The awards will be made on the recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries, in consultation with Colonel Fairey.

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ACADEMIC YEAR

1941

August

- 14th Thursday Last day for submission of applications for Supplemental Examinations.
15th Friday Last day for submission of applications for admission to Second Year Nursing and to the Teacher Training Course.
15th Friday } Supplemental Examinations—Second Year Nursing.
16th Saturday }

September

- 1st Monday ACADEMIC YEAR begins.
1st Monday Labour Day. University closed August 30th-September 1st, inclusive.
9th Tuesday to } Supplemental Examinations.
16th Tuesday }
17th Wednesday } Last day for Registration of all First and Second Year Students. (See Aug. 15, above.)
19th Friday Last day for Registration of all other undergraduates except students in Extra-Sessional Classes and Directed Reading Courses.
19th Friday First and Second Year Arts and Science, Applied Science, Agriculture, Organization.
22nd Monday Lectures begin at 8:30 a.m.
29th Monday Last day for change in Students' courses.

October

- 4th Saturday Last day for handing in graduation essays and theses (Autumn Congregation).
6th 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.
8th Wednesday Thanksgiving Day. University closed.
8th Wednesday Last day for payment of fees for Autumn Graduation.
10th Friday Meeting of the Faculty of Arts and Science.
10th Friday Meeting of the Faculty Council. (Subsequent Meetings to be held at the call of the President.)
10th Friday Meeting of the Faculty of Agriculture.
15th Wednesday Last day for Registration and payment of fees of Graduate Students and of Students in Extra-Sessional Classes and Directed Reading Courses.
15th Wednesday Meeting of the Senate.
29th Wednesday Congregation.

November

- 11th Tuesday Remembrance Day. University closed.

December

- 10th Wednesday Meeting of the Faculty of Arts and Science.
12th Friday Meeting of the Faculty of Agriculture.
17th Wednesday Meeting of the Senate.
20th Saturday First term ends.
25th Thursday Christmas Day. University closed December 24th-28th, inclusive.

1942

January

1st Thursday	New Year's Day. University closed December 31st and January 1st.
5th Monday	Second Term begins.
12th Monday	Last day for payment of Second Term fees. Payment of second instalment of Scholarship money.

February

11th Wednesday	Meeting of the Faculty of Arts and Science.
13th Friday	Meeting of the Faculty of Agriculture.
18th Wednesday	Meeting of the Senate.

April

3rd Friday	Good Friday. University closed April 3rd-6th, inclusive.
16th Thursday	Last day of Lectures.
16th Thursday	Last day for handing in graduation essays and theses.
18th Saturday to Friday, May 1st	Sessional Examinations.
30th Thursday	Field work in Applied Science begins immediately at the close of the examinations. Last day for payment of Graduation fees.

May

1st Friday	Last day for handing in applications for Scholarships.
9th Saturday	Meeting of the Faculty of Agriculture.
11th Monday	Meeting of the Faculty of Arts and Science.
12th Tuesday	Meeting of the Senate.
14th Thursday	Congregation.
14th Thursday	Meeting of Convocation.
24th Sunday	Victoria Day. University closed Monday, May 25th.

June

.....	King's Birthday. University closed.
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July

1st Wednesday	Dominion Day. University closed.
6th Monday	Summer session begins.

August

15th Saturday	Last day for submission of applications for Supplemental Examinations.
21st Friday	Summer Session ends.
28th Friday	Meeting of the Faculty of Arts and Science.
28th Friday	Meeting of the Senate.
31st Monday	ACADEMIC YEAR ends.

THE UNIVERSITY OF BRITISH COLUMBIA

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THE HON. ERIC WERGE HAMBER, B.A., LL.D., Lieutenant-Governor of
British Columbia.

CHANCELLOR

R. E. McKECHNIE, C.B.E., M.D., C.M., LL.D., F.A.C.S., F.R.C.S. (Can.)

PRESIDENT

L. S. KLINCK, Esq., M.S.A., D.Sc., LL.D., Officier de l'Instruction Publique.

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MISS A. B. JAMIESON, B.A., Vancouver.

MRS. EVELYN F. FARRIS, M.A., LL.D., Vancouver.

Terms expire 1941.

(c) Appointed by the Lieutenant-Governor in Council:—

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GEORGE T. CUNNINGHAM, Esq., Vancouver. Term expires 1941.

WILLIAM GEORGE MURBIN, Esq., Vancouver. Term expires 1943.

THE HON. MR. JUSTICE DENIS MURPHY, B.A., LL.D., Vancouver.

Term expires 1945.

JOSEPH BADENOCH CLEARIHUE, Esq., M.A., B.C.L., K.C., Victoria.

Term expires 1945.

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Dean of the Faculty of Arts and Science, DANIEL BUCHANAN, Esq., M.A.,
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 MRS. EVLYN F. FARRIS, M.A., LL.D., Vancouver. Term expires 1942.
- (d) The Principal of Vancouver Normal School, A. R. LORD, Esq., B.A.
 The Principal of Victoria Normal School, V. L. DENTON, Esq., B.A., D.C.L.
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- (f) Representatives of Affiliated Colleges:—
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 The Anglican Theological College of British Columbia, Vancouver, Rev. H. R. TRUMPOUR, M.A., B.D., D.D. Term expires 1942.
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 L. B. DIXON, Special Lecturer.
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 S. A. JENNINGS, M.A., Ph.D. (Toronto), Lecturer.

Department of Mechanical and Electrical Engineering

- HECTOR JOHN MACLEOD, B.Sc. (McGill), M.Sc. (Alberta), A.M., Ph.D. (Harvard), M.A.I.E.E., M.E.I.C., Professor and Head of the Department.
 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.), A.S.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.
 W. O. RICHMOND, B.A.Sc. (Brit. Col.), M.S. (Pittsburg), Mem.A.S.M.E., Assistant Professor of Mechanical Engineering.
 H. M. McILROY, M.Sc. (Queen's), Assistant Professor of Mechanical Engineering.
 D. W. THOMSON, B.A.Sc. (Brit. Col.), M.A.Sc. (Illinois), Instructor.

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.

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

JOHN ALLAN IRVING, M.A. (Toronto), M.A. (Cambridge), Professor and Head of the Department.
 THOMAS GREENSHIELDS HENDERSON, M.A. (McGill), Ph.D. (Harvard), Associate Professor of Philosophy.
 JOSEPH E. MORSH, B.A. (Brit. Col.), Ph.D. (Johns Hopkins), Assistant Professor.
 FREDERICK T. TYLER, B.Sc., M.A., B.Ed. (Alberta), Ph.D. (California), Assistant Professor of Psychology and Education.

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. (On leave of absence.)
 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.), Ph.D. (California), Assistant Professor.
 JOSEPH M. KELLER, B.Sc. (Harvard), Ph.D. (California), Lecturer.

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

W. A. CLEMENS, M.A. (Toronto), Ph.D. (Cornell), F.R.S.C., Professor and Head of the Department.
 G. J. SPENCER, B.S.A. (Toronto), M.S. (Illinois), Associate Professor.
 IAN McTAGGART COWAN, B.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.
 ROBERT T. MCKENZIE, B.A. (Brit. Col.), Assistant to the Director.
 MISS DOROTHY SOMERSET, A.B. (Radcliffe), Assistant in Dramatics.
 LEONARD CHATWIN, Assistant for Radio and Visual Instruction.

University Health Service

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.

C. H. GUNDRY, M.D., Director of Mental Hygiene, Metropolitan Health Committee.

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.

1941-42

Assistants

	<i>Department</i>
ALDOUS, JOHN G., B.A. (Brit. Col.).....	Biology and Botany
ALLEN, ALFRED R., B.A.Sc. (Brit. Col.).....	Geology and Geography
ASHFORD, WALTER R., B.A. (Brit. Col.).....	Chemistry
ATKINSON, ROBERT G., B.S.A. (Brit. Col.).....	Biology and Botany
BASTIN, MISS HILARY, B.A. (Brit. Col.).....	Biology and Botany
BELL, ROBERT E., B.A. (Brit. Col.).....	Physics
BILLINGS, FREDERICK L., B.S.A. (Brit. Col.).....	Dairying
BISHOP, ERNEST L., B.A. (Brit. Col.).....	Philosophy and Psychology
BOARDMAN, HAROLD, B.A. (Brit. Col.).....	Chemistry
BOROUGHES, ROBERT J., B.A. (Brit. Col.).....	History
BROWN, JAMES B., B.A. (Brit. Col.).....	Physics
BROWN, REGINALD H., B.S.A. (Brit. Col.).....	Dairying
BUNYAN, DONALD E., B.A. (Brit. Col.).....	Physics
BUSH, MISS IRENE, B.A. (Brit. Col.).....	Biology and Botany
DAVIDSON, H. H. A., B.A., B.A.Sc. (Brit. Col.)	Mathematics, Mechanical and Electrical Engineering
DAVIDSON, JOHN F., M.A. (Brit. Col.).....	Biology and Botany
DICKSON, BRUCE A., B.S.A. (Brit. Col.).....	Horticulture
DOWNES, MISS GWLADYS V., M.A. (Brit. Col.).....	Modern Languages
FALLS, HERBERT D., B.S.A. (Brit. Col.).....	Agronomy
FARLEY, MISS HELEN, M.S.A. (Brit. Col.).....	Biology and Botany
FISHER, HERBERT E., B.A. (Brit. Col.).....	Chemistry
FREE, NORMAN S., M.A. (Brit. Col.).....	Mathematics
FULTON, CLARENCE O., B.A. (Brit. Col.).....	Bacteriology and Preventive Medicine
GARDNER, JOSEPH A. F., B.A. (Brit. Col.).....	Chemistry
GODSON, WARREN L., B.A. (Brit. Col.).....	Chemistry
GRASSIE, VERNON R., B.A. (Brit. Col.).....	Chemistry
HEDDLE, ROGNVALD D., B.A. (Brit. Col.).....	Chemistry
HICKS, MISS ODETTA, B.S.A. (Brit. Col.).....	Agronomy
HOLLAND, D. CLARKE, B.A.Sc. (Brit. Col.).....	Mining and Metallurgy
KERSEY, LORNE R., B.A.Sc. (Brit. Col.).....	Civil Engineering
LESLIE, JOHN D., B.A., B.A.Sc. (Brit. Col.).....	Mathematics
LLOYD, DENYS C., B.A. (Brit. Col.).....	Chemistry
LOURIE, MRS. MARIANNE, Dr. Juris (Vienna).....	Modern Languages
LYLE, ALFRED G., B.A.Sc. (Brit. Col.).....	Mining and Metallurgy
MARSHALL, J. KELSO, B.A. (Brit. Col.).....	Physics
MILLEY, REGINALD, B.A. (Brit. Col.).....	Mathematics
MITCHELL, LEONARD, B.A. (Brit. Col.).....	Chemistry
MONASCH, LOUIS B., B.A.Sc. (Brit. Col.).....	Mechanical and Electrical Engineering
MOREL, ROY W.F., B.A.Sc. (Brit. Col.).....	Chemistry
MORRISON, GILLMOR, B.S.A. (Brit. Col.).....	Biology and Botany, and Agronomy
MOYLS, BENJAMIN N., B.A. (Brit. Col.).....	Mathematics
MUNRO, MISS MARJORIE H., B.A. (Brit. Col.).....	Philosophy and Psychology

MURPHY, MISS MARY, B.A. (Brit. Col.).....	Biology and Botany
MCCARTER, J. ALEXANDER, B.A. (Brit. Col.).....	Chemistry
MACDONALD, ALAN S., B.A. (Brit. Col.).....	Zoology
MCINTOSH, DONALD G., B.A.Sc. (Brit. Col.).....	Civil Engineering
MCLAUCHLAN, THOMAS A., B.A. (Brit. Col.).....	Physics
MCLEOD, J. DOUGLAS, B.A.Sc. (Brit. Col.).....	Civil Engineering
NEWTON, THEODORE D., B.A. (Brit. Col.).....	Physics
NEY, CHARLES S., B.A.Sc. (Brit. Col.).....	Geology and Geography
PEPPER, JAMES M., B.A. (Brit. Col.).....	Chemistry
PEPPER, THOMAS P., B.A. (Brit. Col.).....	Physics
POTTER, CHARLES, B.A.Sc. (Brit. Col.).....	Chemistry
PRATT, MISS JEAN M., B.A., B.S.A. (Brit. Col.).....	Poultry Husbandry
RATTENBURY, JACK A., B.A. (Brit. Col.).....	Biology and Botany
ROGERS, BERNARD, B.Sc. in Agric. (Alberta).....	Biology and Botany
RUNKLE, JOHN DANIEL, B.A.Sc. (Brit. Col.).....	(Research)—Mining and Metallurgy
SHAW, KENNETH N.F., B.A. (Brit. Col.).....	Chemistry
SIMPSON, ROBERT E., B.A. (Brit. Col.).....	Zoology
SMITH, DAVID B., B.A. (Brit. Col.).....	Chemistry
TAYLOR, FREDERICK H. C., B.A. (Brit. Col.).....	Zoology
TEIR, J. BERTRAND, B.S.A. (Brit. Col.).....	Biology and Botany
TODD, MISS MARJORIE D., B.A. (Brit. Col.).....	Bacteriology and Preventive Medicine
TURNER, GORDON H., B.A. (Brit. Col.).....	Chemistry
WADDELL, DAVID B., B.A. (Brit. Col.).....	Biology and Botany
WALDEN, FRANKLIN E., B.Com. (Brit. Col.).....	Commerce
ZOTOV, GENNADY, M.A. (Brit. Col.).....	Physics

THE UNIVERSITY OF BRITISH COLUMBIA

HISTORICAL SKETCH

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

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

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

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

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

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

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

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

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

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

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

THE CONSTITUTION OF THE UNIVERSITY

The Constitution of the University is governed by the British Columbia University Act, B.C.R.S. 1936, c. 299, 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 Convocation shall be composed of the Chancellor, the Senate, all persons who became members of the Convocation prior to the first day of January, 1919, all persons holding academic appointments within the University and whose names are added to the roll of Convocation by the Registrar of the University from time to time upon instructions from the President, and all persons who have become graduates of the University; that the Chancellor shall be elected by the members of the Convocation; that the Board of Governors shall consist of eleven members—the Chancellor, who shall be the Chairman thereof, the President, three persons elected by the Senate from among its members, and six members 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 consists of more than 124,000 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 catalogue is kept fully up to date, and between 50,000 and 60,000 new cards, issued each year, are 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 900 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.

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 1940 took the form of a Public Address System for the Stadium.

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 Agronomy

Anonymous Donor—Alfalfa Breeding Project—Gift of \$500.

Department of Animal Husbandry

H. Guy Fowler, Esq., Milner, B. C.—A volume, "Packing House Industries, Leather and Soap."
Dr. J. C. Bankier, Langley Prairie, B. C.—25 guinea pigs, 10 rabbits, 3 hutches.

Department of Biology and Botany

(For Herbarium and Botanical Gardens)

SEEDS

CANADA	Division of Botany, Central Experimental Farm, Ottawa. Montreal Botanical Garden, Montreal.
UNITED STATES	Brooklyn Botanic Garden, Brooklyn. Garden of Medicinal Plants, University of Washington, Seattle.
GREAT BRITAIN	Royal Horticultural Society, Surrey.
AUSTRALIA	Botanic Gardens, Christchurch, N. Z.
PORTUGAL	Botanical Garden, University of Coimbra.
HOLLAND	Technical High School, Delft.
DENMARK	Jardin Botanique, de Copenhagen.
SWEDEN	Botanical Garden, Lund. Universitetets Botaniska Tradgard, Uppsala.
NORWAY	Botanical Gardens, Oslo.
JAPAN	Botanic Gardens of the Imperial University, Formosa.

GARDEN SPECIMENS

Dr. M. G. Dudley, University of Manitoba, Winnipeg—A collection of pitcher plants (*Sarracenia*).

Department of Education

New Zealand Council for Educational Research—Complete set of publications.

Department of Forestry

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

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

Mr. Charles MacFayden, Vancouver—Several lots and samples of forest tree seeds.

U. S. Forest Service, Washington, D. C.—Several score of bulletins and miscellaneous publications.

Dominion Forest Service, Ottawa, Canada—Statistical reports, bulletins.

Department of Geology and Geography

1. Mrs. Edward Howard, Apt. 7, 1485 W. 13th Ave., Vancouver—A collection of South Sea shells, New Zealand celts, Emeu eggs, etc.
2. Mr. Ray Gaul—A very fine collection of tertiary insects from Driftwood Creek, near Smithers, B. C.
3. Mr. Alan M. Stevenson—Indian pestle from North Vancouver.
4. Mr. R. M. Thompson, collected by C. W. Parker—Cambrian trilobites from Field.
5. Mr. A. R. Smith—A collection of tertiary leaves from Dawsons type locality in diatomaceous beds on the C.N.R., 13 miles west of Prince George, B. C. Also specimens from Baker Creek, near Quesnel.
6. Mr. W. F. Byers—All from Northern Rhodesia:
Skull of leopard.
Hunting spear, Mwinilunga District.
Bow and four arrows, Maninga River.
Raw iron, smelted by natives, Valla Valla tribe.
Chalcocite, crystalline.
Malachite.
Chalcocite with bornite and chalcopyrite from N'Changa Mines.
Native copper in shale from N'Kana.
7. Mr. Stanley Weston—Indian knife of slate, ploughed up on the University of British Columbia farm, 1940.
8. Mr. H. C. Tite, 4336 Albert St., Vancouver—Boulder of aucella from Burnaby.
9. Mr. Ray Gaul, Manson Creek, B. C.—Beaver skull and two jaws.
10. Mr. Don MacKinnon, Box 602, Springs, Transvaal, East Daggafontein Mines, Ltd.—Native hatchet, wooden paddle. One skull of each of the following: Hartbeeste, waterbuck, bushbuck, reedbuck, male zebra, black zebra, female zebra, hyaena, roan antelope, puku of Chambesi River District, setatunga, impala, female eland.

During the past year the University has received gifts of minerals and ores, as follows:

- H. W. Clark—Suite of gold ore.
 W. J. Lynott—Suites of mercury and antimony ore.
 R. M. Thompson—Suites of antimony and lead ore.
 C. B. Newmarch—Suites of cobalt and chromium ore.
 F. M. Groves—Suite of pergamite minerals.
 J. Stevenson, Department of Mines, Victoria—Sample of scheelite.

Phil Davis—Stibnite samples, Northern Saskatchewan.

D. A. Bellinger—Suites of ore (Copper Mountain) and specimens of scheelite (Island Mountain).

Valuable suites of ores from the following companies:

Consolidated Mining & Smelting Co. Ltd.

Britannia Mining and Smelting Co. Ltd.

Cariboo Gold Quartz Mining Co. Ltd.

Island Mountain Mining Co. Ltd.

Bralorne Mines Ltd.

Pioneer Mines Ltd.

Highland Bell Mining Co. Ltd.

Department of Horticulture

Mrs. J. Fyfe-Smith, 6263 Carnarvon St., Vancouver—Approximately 60 issues of the English publication known as "My Garden"; a number of copies of the new "Silva and Flora" (England); several miscellaneous issues of the Journal of the Royal Horticultural Society (England).

Mr. M. B. Davis, Dominion Horticulturist, Dominion Department of Agriculture, Division of Horticulture, Ottawa, Ont.—Six trees of ornamental crab apples (new hybrid varieties).

Dominion Experimental Station, Summerland, B. C.—Twenty nursery fruit trees (new hybrid varieties); shipments of fruit specimens of plums, pears, grapes, apples, for systematic study.

Dominion Experimental Station, Saanichton, B. C.—Two boxes of pear fruit specimens for systematic study.

Mr. W. H. Robertson, Provincial Horticulturist, Victoria, B. C., and District Horticulturists and Field Men—Fourteen boxes of fruit variety specimens for systematic study.

Mr. Alwyne Buckley, Esperanza Lily Gardens, Langley Prairie, B. C.—Fifty bulbs *lilium auratum*.

Department of Mechanical and Electrical Engineering

Packard Electric Co. and Mr. L. B. Stacey, manager of Vancouver Branch—One 3 k.v.a. 2300/230 volt Packard Electric Transformer with part of the winding and core sectioned to show construction details in design courses.

Department of Mining and Metallurgy

Mrs. W. B. Bishop, Vancouver—Books (200 volumes) from the library of the late W. B. Bishop, Instructor in Metallurgy.

Department of Physics

Victor X-Ray Corporation of Canada Ltd.—Coolidge Transformer, Rectifier Tube and Auxiliary Equipment.

Department of Zoology

Dr. Nathan Banks, United States National Museum—The identification of B. C. Neuroptera.

Mr. Frank Beebe, Cowichan Lake—A series of ten original water colour paintings of native birds and small mammals.

Dr. Joseph Bequaert, Harvard School of Tropical Medicine, Boston—The identification of pupiparous parasites.

Dr. W. J. Brown, Division of Entomology, Ottawa—The identification of B. C. Coleoptera.

Mr. E. R. Buckell, Dominion Entomological Laboratory, Kamloops—A card index catalogue comprising some 4,000 references of the first twenty-seven volumes of the Journal of Economic Entomology.

- Mr. W. Downes, Victoria—Further considerable collections of named Homoptera and Hemiptera.
- Dr. H. E. Ewing, United States National Museum—The identification of many mites parasitic on birds and mammals.
- Dr. R. E. Foerster, Nanaimo—One hundred and thirty-three Science Reports of the Tohoku Imperial University, Sendai, Japan.
- Mr. James Grant, Lumby—Pupiparous parasites of birds and mammals.
- Mr. Jack Gregson, Eric Hearle Laboratory, Kamloops—Series of microscope slides of seed and nymph ticks illustrative of B. C. species.
- Mr. J. Harris, Vancouver—One coast deer.
- Mr. George Holland, Eric Hearle Laboratory, Kamloops—A set of 85 fully labelled microscope slides of 46 species of fleas, representative of typical B. C. genera.
- Mr. J. Davidson, Jr.—A series of microscope slides of Carcinoma.
- Mr. Hamilton Lalng, Comox—Ectoparasites of B. C. birds.
- Mr. Hugh Leech, Dominion Entomological Laboratory, Vernon—Further collections of named Coleoptera, including one paratype; the identification of specimens; a further considerable collection of valuable entomological bulletins and separates.
- Mr. P. W. Martin, Victoria—One mule deer, one coyote.
- Dr. Donald Murray, University of Minnesota—The identification and labelling of B. C. sphecoid wasps.
- Mr. Kenneth Racey, Vancouver—Ectoparasites of B. C. birds and mammals; one bob cat, four birds, one small mammal, three reptiles.
- Mr. F. M. Shillaker, Cheyacut—Six small mammals, skulls of nine fur-bearing mammals.
- Mr. Reginald Tupper, Vancouver—Mounted head of giant wapiti and two mounted moose heads from the estate of the late Sir Charles Tupper.
- Dr. R. L. Usinger, University of California, Davis—Rare California Hemiptera; the identification of B. C. Hemiptera.
- Dr. Stuart Walley, Division of Entomology, Ottawa—The identification of B. C. parasitic Hymenoptera.
- Mr. Harry Wearne, Quick—Two antlered heads of mule deer; skulls of mink, coyote and wolf.
- Professor M. Y. Williams, Vancouver—Ectoparasites of Alberta and B. C. birds; two wolf skulls, one wolverine skull, one lesser snow goose in flesh.
- Mr. Mills Winram, Vancouver—Nest of three-toed woodpecker.
- Mr. W. A. Young, Revelstoke—Ectoparasites of rodents; rodent specimens.

Department of University Extension

- Belgian Government—Set of seventeen slides on Belgium.
- American Can Company—Four-reel sound film, "Jerry Pulls the Strings." On loan.
- Canadian General Electric Company—Five one-reel sound films, "Excursions in Science." On loan.
- National Parks Bureau, Ottawa—Twenty-two reels silent film. On loan.
- Provincial Board of Health, Division of Venereal Disease Control—One reel sound film, "With These Weapons." On loan.
- Government Motion Picture Bureau, Ottawa—Forty-four reels sound film, eighteen reels silent film, one reel silent natural colour film. On loan.
- National Film Society of Canada, Ottawa—Thirty reels sound film, ten reels silent film. On loan.
- Mr. Jack Diether, Vancouver—Recordings and musical score as additions to the Carnegie music set.

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 34, and for "Registration and Attendance, see page 36.

Courses of Study

For the Session of 1941-42 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, 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 economic life 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 700 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) International Relations.

- (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 therefore gives to each new student at the time of his entrance examination a tuberculin skin test and provides for an X-ray of the chest to those showing a skin reaction to tuberculosis. 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 are 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. 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 conducted on a voluntary basis without University credit.

The Physical Education programme contributes to the mental and physical health of the student body. Participation is encouraged in physical activities which will be useful as a health measure and in providing social opportunities in adult life. The activities are limited by the accommodations at the gymnasium. They include for men: Badminton, basketball, boxing, cross-country running, golf, tumbling, volleyball, wrestling, track and field, football and rugby. The women's activities are: Archery, badminton, basketball, dancing, gymnastics, group games, light apparatus and volleyball.

A course in recreational leadership is given for those who are interested in play leadership in schools, playgrounds, social centres, and leisure time organizations.

The geographic location of the University precludes the possibility of any extensive intercollegiate 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 1941-42 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 34.)

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

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

The last days for Registration are: for First and Second Year students, Wednesday, September 17th; for other Undergraduate students of the regular Winter Session, Friday, September 19th; for Graduate students, and for students in Extra-Sessional Classes and Directed Reading Courses, Wednesday, October 15th.

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

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, September 29th 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.

FEEES

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 6th:	
Sessional Fee	\$ 75.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 12th.....	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 6th:	
Sessional Fee	\$ 75.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 12th.....	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 6th:	
Sessional Fee	\$ 75.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 12th.....	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 6th:	
Sessional Fee	\$100.00
Alma Mater Fee	13.00
Caution Money	5.00
	118.00
<i>Second Term</i> —Payable on or before January 12th.....	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 6th:	
Sessional Fee	\$75.00
Alma Mater Fee	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 12th.....	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 6th.

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 6th:	
Sessional Fee	\$75.00
Alma Mater Fee	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 12th.....	75.00
	\$173.00

OCCUPATIONAL COURSE—

<i>Registration</i> —Payable before registration	\$ 5.00
<i>First Term</i> —Payable on or before October 6th:	
Sessional Fee	\$30.00
Alma Mater Fee	13.00
Caution Money	5.00
	48.00
<i>Second Term</i> —Payable on or before January 12th	30.00
	<u>83.00</u>

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 6th, along with—	
Alma Mater Fee	13.00
Caution Money	5.00
<i>Second half</i> payable on or before January 12th.	

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 12th.	

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 12th	62.50
	<u>135.00</u>

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 6th 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.

Registration—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 1941-42

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 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 1941-42 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) 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 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 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 Vancouver Lodge, Vancouver, B. C., two scholarships of the value of \$125 each were awarded in the session 1940-41. 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, Scholarships and Bursaries. 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*

For research in mineralography The Britannia Mining and Smelting Company, Limited, offers a scholarship of \$250, open to graduates 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 1940-41. 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 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

*See Paragraph 1, page 43.

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 1941-42 on recommendation of the Head of the Department of Economics, Political Science and Sociology, essays to be submitted by April 10th, 1942.

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

The David Bolocan Memorial Prize

A prize of \$25 given by Mr. and Mrs. J. L. Bolocan will be awarded to the student in the Fourth Year of the Faculty of Arts and Science who is regarded by the Department of Philosophy and Psychology as the outstanding student in that subject in the graduating year. The award will be made on the recommendation of the Head of the Department of Philosophy and Psychology.

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 Walter Moberly, will be awarded for the best engineering thesis submitted by any Fifth Year student in the Faculty of Applied Science.

*See Paragraph 1, page 43.

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, 1942.

BURSARIES

The Captain LeRoy Memorial Bursary*

This bursary of the annual value of \$150 was given by the Universities Service Club in memory of their comrades who fell

*See Paragraph 1, page 43.

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.

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.

*See Paragraph 1, page 43.

The American Woman's Club Bursary*

A bursary of \$100, given by the American Woman's Club of Vancouver, will be available for 1941-42 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 course leading to the Diploma in Social Work. 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 Diploma in Social Work. 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 1941-42 to assist a woman undergraduate who has completed at least one year in Arts and Science with high standing in English, and who could not otherwise continue her course. The award will be made on the recommendation of the Dean of Women, to whom applications should be sent not later than September 1st on forms available in the Registrar's Office.

*See Paragraph 1, page 43.

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

The Faculty Women's Club Bursary*

A bursary of the value of \$100, given by the Faculty Women's Club of Vancouver, will be awarded to a Third Year woman student, such student to have scholastic ability and real need of financial assistance. The award will be made on the recommendation of the Joint Faculty Committee on Prizes, Scholarships and Bursaries. Applications, on forms available in the Registrar's Office, must be received by the Registrar not later than September 15th.

The Alumni Association Bursary*

A bursary of the value of \$50, given by the Alumni Association of the University of British Columbia, will be awarded to a First Year student on the basis of scholarship and need. The award will be made on the recommendation of the Joint Faculty Committee on Prizes, Scholarships and Bursaries. Applications, on forms available in the Registrar's Office, must be received by the Registrar not later than September 15th.

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

*See Paragraph 1, page 43.

from the Pattullo Bridge at New Westminster on which he was engaged as Assistant Engineer, will be awarded to a student or students registered in the Third, Fourth or Fifth Year of the Faculty of Applied Science, requiring financial assistance to enable him or them to continue studies at the University. In making the award, consideration will be given to the academic record of the applicant and to his participation in undergraduate affairs.

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

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

The Phil Wilson Bursary in Forestry*

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

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

The David Thom Bursaries

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

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

Special Bursaries Fund*

For the Session 1941-42 a Special Bursaries Fund has been made available by the Board of Governors to enable students to attend

*See Paragraph 1, page 43.

the University who would not otherwise be able to do so. To be eligible for an award from this fund a student must have attained at least Second Class standing in the examinations last written, and must give evidence of need.

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

LOANS

General Loan Fund

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

The Wheatley Memorial Loan Fund

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

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

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, Scholarships and Bursaries.

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, Scholarships and Bursaries. 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, Scholarships and Bursaries, in consultation with the Dean of Women. Applications for assistance under this fund should be made to the Bursar.

The T. Sato Loan Fund

This fund has been established by Tsutae Sato, Esq., for students of Second Class standing, or better, in the Third or Fourth Years in the Faculties of Arts and Science and Agriculture, or in the Fourth and Fifth Years of the Faculty of Applied Science, or for students in the Fifth Year of a Double Course. For such loans the regulations in Paragraph 13 of the general regulations for Scholarships, Bursaries and Loans are applicable. The fund is distributed on the recommendation of the Joint Faculty Committee on Prizes, Scholarships and Bursaries.

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.

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.

*See Paragraph 1, page 43.

2. His fondness for and success in manly outdoor sports such as cricket, football and the like.
3. His qualities of manhood, truth, courage, devotion to duty, sympathy for and protection of the weak, kindness, unselfishness and fellowship, and
4. His exhibition during school days of moral force of character and of instincts to lead and to take an interest in his school-mates, for those latter attributes will be likely in after life to guide him to esteem the performance of public duties as his highest aim."

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, from the Secretary of the Committee of Selection, or from the General Secretary for Canada, D. R. Michener, Esq., 372 Bay Street, Toronto, Ontario.

As the regulations are subject to change, prospective candidates are advised to obtain full information from Arthur J. F. Johnson, Esq., 522 Marine Building, Vancouver, B. C., Secretary of the Selection Committee for British Columbia.

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.

*See Paragraph 1, page 43.

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 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. Not available in 1941-42.

*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	Botany 7a.....	Ap 235	Biology 2 b, Lab.....	-----	
	Botany 6 e.....	Ap 238	Chemistry 18.....	-----	Biology 3.....	Ap 237	
	Economics 6.....	A 205	Commerce 4.....	A 204	Botany 6 e.....	Ap 238	
	Education 9.....	Ag 100	English 1, Sec. 3.....	A 100, 103, 106, 205, 206, 208	Economics 6.....	A 205	
	English 1, Sec. 1.....	A 101, A 103, 106, 203, 206, 208	English 21 a.....	A 108	Education 9.....	Ag 100	
	-----	-----	French 2, Sec. 2.....	A 101, 104, 105	English 1, Sec. 1.....	A 101, A 103, 106, 203, 206, 208	
	English 13.....	A 100	German 1(a), Sec. 1.....	A 203	English 13.....	A 100	
	French 2, Sec. 1.....	A 104, 105, 108	German 3 c.....	A 201	French 2, Sec. 1.....	A104,105 108	
	Geology 4.....	Ap 102	Latin 2 a.....	A 207	Geology 4.....	Ap 102	
	Geology 23.....	Ap 106	Latin 6.....	A 102	Greek 9.....	A 207	
	Greek 9.....	A 207	Physics A.....	S 200	Latin 1, Sec. 1.....	A 102	
	Latin 1, Sec. 1.....	A 102	Social Work 12.....	Ap 237	Mathematics 10.....	A 204	
	Mathematics 10.....	A 204	Zoology 2.....	Ap 101	Physics 1, Sec. 1.....	S 200	
	Physics 1, Sec. 1.....	S 200	Zoology 3.....	Ap 101	Psychology A.....	Ap 100	
	Psychology A.....	Ap 100	-----	-----	-----	-----	
	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	
Economics 11.....		A 201	Economics 4.....	Ap 204	Economics 1, Sec. 1.....	S 400	
Education 12.....		A 204	English 10.....	A 207	Economics 11.....	A 201	
English 9.....		A 100	French 4 a.....	A 104	Education 12.....	A 204	
French 3 b.....		A 104	Geology 2 a & b.....	Ap 102	English 9.....	A 100	
French 4 b.....		A 105	German 1(a), Sec. 2.....	A 203	French 3 b.....	A 104	
Geography 3.....		Ap 102	German 1(b).....	A 208	French 4 b.....	A 105	
Geology 1 a & c.....		Ap 100	Government 1.....	A 108	Geography 3.....	Ap 102	
German 3 a.....		A 208	History 3.....	A 204	Geology 1 a & c.....	Ap 100	
History 17.....		A 203	History 25.....	A 206	Geology 7.....	Ap 106	
Mathematics 1, Sec. 1.....		A 106, 205, 206 Ag 100	Latin 2 b.....	A 102	German 3 a.....	A 208	
-----		-----	Mathematics 1, Sec. 2.....	A 100, 105, 106, 205	History 17.....	A 203	
Mathematics 13.....		A 102	Mathematics 12.....	A 101	Mathematics 1, Sec. 1.....	A 106, 205, 206 Ag 100	
Mathematics 16.....		A 101	Philosophy 2.....	-----	Mathematics 13.....	A 102	
Philosophy 9.....		A 103	Social Work 4 & 8.....	A 201	Mathematics 16.....	A 101	
Physics 1, Sec. 2.....		S 200	Sociology 1.....	A 103	Philosophy 9.....	A 103	
Physics 4.....	S 210	-----	-----	Physics 1, Sec. 2.....	S 200		
Sociology 2.....	A 207	-----	-----	Physics 4.....	S 210		
-----	-----	-----	-----	Sociology 2.....	A 207		

CONSULT DEPARTMENT HEADS FOR

--- 1941 - 1942

AND SCIENCE

iculture; Ap, Applied Science; S, Science.

Mornings

Thursday	Room	Friday	Room	Saturday	Room	
Botany 7 a.....	Ap 235	Biology 2 a & b, Labs.....	.....	Chemistry 5 Lab., Sec. b.....	.....
Chemistry 18.....		Economics 6.....	A 205	Commerce 4.....	A 204	
Commerce 4.....	A 204	Education 9.....	Ag 100	Education 14.....	Ag 100	
English 1, Sec. 3.....	A 100, 103, 106, 205, 206, 208	English 1, Sec. 1.....	A 101, A103, 106, 203, 206, 208	English 1, Sec. 3.....	A 100, 103, 106, 205, 206, 208	
English 21 a.....	A 108	English 13.....	A 100	French 2, Sec. 2.....	A 101, 104, 105	
French 2, Sec. 2.....	A 101, 104, 105	French 2, Sec. 1.....	A 104, 105, 108	German 1(a), Sec. 1.....	A 203	
German 1(a), Sec. 1.....	A 203	Geology 4.....	Ap 102	German 3 c.....	A 201	
German 3 c.....	A 201	Greek 9.....	A 207	Latin 2 a.....	A 207	
Latin 2 a.....	A 207	Latin 1, Sec. 1.....	A 102	Latin 6.....	A 102	
Latin 6.....	A 102	Mathematics 10.....	A 204	Physics A.....	S 200	
Physics A.....	S 200	Physics 1, Sec. 1.....	S 200			
Social Work 2.....	Ap 237	Psychology A.....	Ap 100			
Zoology 2.....	Ap 101	Zoology 11.....	Ap 101			
Zoology 3.....	Ap 101					
						8.30
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 3 a.....	Ap 101	Chemistry 2.....	S 300	Economics 4.....	Ap 204	
Botany 6 c.....	Ap 101	Commerce 6.....	A 103	Education 14.....	Ag 100	
Chemistry 9.....	S 413	Economics 1, Sec. 1.....	S 400	English 10.....	A 207	
Economics 4.....	Ap 204	Economics 11.....	A 201	French 4 a.....	A 104	
English 10.....	A 207	Education 12.....	A 204	German 1(a), Sec. 2.....	A 203,	
French 4 a.....	A 104	English 9.....	A 100	German 1(b).....	A 208	
Geology 2 a & b.....	Ap 102	French 3 b.....	A 104	Government 1.....	A 103	
German 1(a), Sec. 2.....	A 203	French 4 b.....	A 105	History 3.....	A 204	
German 1 b.....	A 208	Geography 3.....	Ap 102	History 25.....	A 206	
Government 1.....	A 103	Geology 7.....	Ap 106	Latin 2 b.....	A 102	
History 3.....	A 204	German 3 a.....	A 203	Mathematics 1, Sec. 2.....	A 100, 105, 106, 205	
History 25.....	A 206	History 17.....	A 203	Philosophy 2.....	.....
Latin 2 b.....	A 102	Mathematics 1, Sec. 1.....	A 106, 205, 206, Ag 100	Sociology 1.....	A 103	
Mathematics 1, Sec. 2.....	A 100, 105, 106, 205	Mathematics 13.....	A 102			
Mathematics 12.....	A 101	Philosophy 9.....	A 103			
Philosophy 2.....	.....	Physics 1, Sec. 2.....	S 200			
Social Work 4 & 8.....	A 201	Physics 4.....	S 210			
Sociology 1.....	A 103	Social Work 13.....	A 101			
		Sociology 2.....	A 207			
						9.30

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.....	.....
	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 418	English 19.....	A 206	Chemistry 1, Sec. 1.....	S 300	
	Economics 1, Sec. 2.....	S 400	French 1, Sec. 2.....	A 108	Chemistry 7.....	S 418	
	Economics 3.....	A 201	.....	A 104, 105	Economics 1, Sec. 2.....	S 400
	Economics 12.....	Ap 204	French 3 a.....	A106,208	Economics 3.....	A 201	
	English 14.....	A 106	Geology 6.....	Ap 102	Economics 13.....	Ap 204	
	French 1, Sec. 1.....	A104,105, 108	Government 2.....	A 201	English 14.....	A 108	
	French 3 c.....	A 206	History 12.....	A 108	French 1, Sec. 1.....	A 104, 105, 108	
	Geology 8.....	Ap 102	History 13.....	A 207	French 3 c.....	A 206	
	German, Beg., Secs. 1 & 2.....	A205,207	Latin 1, Sec. 2.....	A 102	Geology 8.....	Ap 102	
	Government 5.....	A 208	Mathematics 2 a, Sec. 2.....	A 204	German, Beg., Secs. 1 & 2.....	A205,207	
	History 4.....	A 103	Philosophy 4.....	A 205	Government 5.....	A 208	
	History 11.....	A 203	Social Work 1.....	A 101	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 4.....	A 102	.....	.....	Physics 5.....	S 210
	Zoology 1.....	Ap 202	.....	.....	Psychology 4.....	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	Bacteriology 5.....	Biology 4.....	Ap 101
		Economics 7 (Com. 9).....	A 106	Botany 1 b.....	Ap 101	Economics 7 (Com. 9).....	A 106
English 1, Sec. 2.....		A 206	Economics 2.....	A 100	English 1, Sec. 2.....	A 206	
German, Beg., Sec. 3.....		A 205	Economics 9.....	A 201	German, Beg., Sec. 3.....	A 205	
German 2, Sec. 1.....		A 105	German, Beg., Secs. 2, 4, 5.....	A203,205, 207	German 2, Sec. 1.....	A 105	
German 3 a.....		A 201	Latin Beg.....	A 102	German 3 a.....	A 201	
Greek 14.....		A 102	Mathematics 1, Sec. 3.....	A 204	Greek 14.....	A 102	
History 10.....		A 208	Mathematics 15 a.....	A 208	History 10.....	A 208	
History 20.....		A 203	Psychology 3.....	A 206	History 20.....	A 203	
Mathematics 3.....		A 204	Social Work 3.....	A 104	Mathematics 3.....	A 204	
Nursing B27.....		S 210	.....	.....	Philosophy 10.....	A 108
Philosophy 10.....		A 108	.....	.....	Physics 2.....	S 200
Physics 2.....		S 200	.....	.....	Psychology 1.....	A 100
Psychology 1.....		A 100	.....	.....	Psychology 20.....	A 207
Psychology 20.....		A 207	.....	.....	.....	.....
Social Work 11.....		A 101	.....	.....	.....	.....

CONSULT DEPARTMENT HEADS FOR

TIME TABLE

Afternoons

	Monday	Room	Tuesday	Room	Wednesday	Room
1.30	Botany 3 a Lab.....	-----	Bacteriology 1 Lab., Sec. 2.....	-----	Bacteriology 9, Lab.....	-----
	Botany 4 Lab.....	-----	Biology 1 Lab., Sec. 1	-----	Botany 3 a Lab.....	-----
	Botany 5 a & c Lab.....	-----	Botany 6 c Lab.....	-----	Botany 4 Lab.....	-----
	Chemistry 1, Sec. 2.....	S 300	Botany 6 e Lab.....	-----	Botany 5 c Lab.....	-----
	Chemistry 5.....	-----	Chemistry 4 a Lab., Sec. a.....	-----	Botany 6 b Lab.....	-----
	Chemistry 7 Lab.....	-----	Chemistry 9 Lab.....	-----	Chemistry 1, Sec. 2.....	S 300
	Economics 12 Lab., Sec. A.....	-----	Commerce 1.....	A 103	Economics 12 Lab., Sec. B.....	-----
	Education 14.....	A 103	Economics 13 Lab.....	-----	Education 14.....	A 103
	English 2.....	A 100, Ap 100	French 3 c.....	A 105	English 2.....	A 100, Ap 100
	French 1, Sec. 3.....	A 104, 105, 204	Geology 1 b & d Lab. Sec. 1.....	Ap 120	French 1, Sec. 3.....	A 104, 105, 204
	German, Beg., Sec. 4.....	A 205	Geology 7 Lab.....	Ap 106	Geology 7 Lab.....	-----
	Latin 4.....	A 207	Latin 8, Sec. b.....	A 201	German, Beg., Sec. 4.....	A 205
	Mathematics 11.....	A 203	Mathematics 1, Sec. 1.....	A 106, 205, 206, Ag 100	Latin 4.....	A 207
	Philosophy 8.....	A 201	Physics 4 Lab., Sec. 1	-----	Mathematics 11.....	A 203
	Zoology 5.....	-----	Psychology 2.....	A 164	Philosophy 8.....	A 201
	Zoology 6.....	-----	Zoology 2 Lab.....	-----	Physics 5 Lab.....	-----
			Zoology 3 Lab.....	-----	Zoology 5 Lab.....	-----
			Zoology 4 Lab.....	-----	Zoology 6 Lab.....	-----
			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.....	-----	English 17.....	A 206
Education 10.....		A 106	Education 10.....	A 204	French 2, Sec. 3.....	A104,105,
English 16.....		A 106	English 1, Sec. 3.....	A 100, 103, 106, 205, 206, 208	Geology 7 Lab.....	Ap 106
English 17.....		A 206	Geology 1 b & d Lab. Sec. 1.....	Ap 120	Geography 1.....	Ap 102
French 2, Sec. 3.....		A 104, A 105	Geology 7 Lab.....	Ap 106	German, Beg., Sec. 5.....	A 205
Geography 1.....		Ap 102	Mathematics 4.....	A 101	German 2, Sec. 2.....	A 203
German, Beg., Sec. 5.....		A 205	Physics 4 Lab., Sec. 1	-----	History 1.....	A 100
German 2, Sec. 2.....		A 203	Psychology 2 Lab.....	-----	History 14.....	A 101
History 1.....		A 100	Zoology 2 Lab.....	-----	Philosophy 1.....	S 200
History 14.....		A 101	Zoology 3 Lab.....	-----	Physics 5 Lab.....	-----
Philosophy 1.....		S 200	Zoology 4 Lab.....	-----	Zoology 5 Lab.....	-----
Zoology 1 Lab, Sec. 3		-----	Zoology 7 Lab.....	-----	Zoology 6 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.....	.....		
Bacteriology 10.....	.....	Botany 6 d Lab.....	.....		
Biology 1 Lab., Sec. 3.....	.....	Chemistry 1, Sec. 2.....	S 300			
Botany 6 c & e Lab.....	.....	Chemistry 3 Lab., Sec. a.....	.....		
Chemistry 3 Lab., Sec. b.....	.....	Chemistry 4a Lab., Sec. b.....	.....		
Commerce 1 Lab.....	.....	Chemistry 5 Lab., Sec. b.....	.....		
Economics 18 Lab.....	.....	Education 14.....	A 108			
French 3 c.....	A 105	English 2.....	A 100, Ap 100			1.30
Geology 1 b & d Lab., Sec. 2.....	Ap 120	French 1, Sec. 3.....	A 104, 105, 204			
Geology 9.....	Ap 112	Geology 2 Lab.....	.....		
Latin 8, Sec. a.....	A 201	German, Beg., Sec. 4.....	A 205			
Mathematics 1, Secs. 2 & 3.....	A100, 105 106, 204 205	Latin 4.....	A 207			
Physics 4 Lab., Sec. 2.....	.....	Philosophy 8.....	A 201			
Psychology 2.....	A 104	Zoology 11 Lab.....	.....		
Zoology 1 Lab., Sec. 1.....	.....				
Zoology 2 Lab.....	.....				
Bacteriology 1 Lab., Sec. 2.....	.....	Biology 1 Lab., Sec. 5.....	.....		
Bacteriology 10.....	.....	Biology 3 Lab.....	.....		
Biology 1 Lab., Sec. 3.....	.....	Botany 6 d Lab.....	.....		
Botany 6 c & e Lab.....	.....	Chemistry 3 Lab., Sec. a.....	.....		
Chemistry 3 Lab., Sec. b.....	.....	Chemistry 4 a Lab., Sec. b.....	.....		
Chemistry 5 Lab., Sec. a.....	.....	Chemistry 5 Lab., Sec. b.....	.....		
Commerce 1 Lab.....	.....	Education 10.....	A 204			
Economics 18 Lab.....	.....	English 16.....	A 106			
English 1, Secs. 1 & 2.....	A100, 101, A108, 106, 203, 206, 208	English 17.....	A 206			2.30
Geology 1 b & d, Lab., Sec. 2.....	Ap 120	French 2, Sec. 3.....	A 104 A 105			
Geology 9.....	Ap 112	Geography 1.....	Ap 102			
Mathematics 4.....	A 101	Geology 2 Lab.....	.....		
Physics 4 Lab., Sec. 2.....	.....	Geology 8.....	Ap 120			
Zoology 1 Lab., Sec. 1.....	.....	German Beg., Sec. 5.....	A 205			
Zoology 2 Lab.....	.....	German 2, Sec. 2.....	A 208			
		History 1.....	A 100			
		History 14.....	A 101			
		Philosophy 1.....	S 200			
		Zoology 11 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..... Nursing B5..... Psychology 6..... Zoology 5 Lab..... Zoology 6 Lab..... Zoology 1 Lab., Sec. 3.....	Ap 120 A 208 Ap 102 S 400 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..... Physics 5 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..... 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 Lab..... 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. 2		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 Psychology 6 Zoology 11 Lab.				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. 2		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 Zoology 11 Lab.				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

1941-42

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., and in Arts and Science and Agriculture leading to the degrees of B.A. and B.S.A. 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, or Sociology 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, Sociology 1, Zoology 1	9

NOTES

Bacteriology 1, Botany 1 (a), Zoology 1, Geology 1 and 2, Geography 1, Economics 1, Commerce 5 (Economics 10), History 4, Philosophy 1, Psychology 1, and Sociology 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).

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

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

Botany 1 (b) and Civil Engineering 2 are required of students

*For credit that can be given for Senior Matriculation standing, complete or partial, see page 35.

†See Regulation "2".

‡See Regulations "4" and "5".

**These courses are offered only by Victoria College.

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.

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. Students who offer either French IV or Latin IV of Senior Matriculation under Group 1 of the Optional Courses of University Entrance may fulfil the language requirements for the First and Second Years by taking French 2 or Latin 2 respectively in either the First or the Second Year. If the Second Year language is taken in the First Year, a Third Year course in this language may be taken in the Second Year.

4. 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.

5. 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.

6. 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 3, 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 6, 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.

SINGLE HONOURS COURSES

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 Biology and 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, 10, 11, 12; courses in Botany; Biology 2 and 3; 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.

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.

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.

Political Science

Prerequisite: A reading knowledge of French or German.

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. (Political Science) and B.S.F., see the section *Double Courses* at the end of the Calendar.

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, 10.

Sociology

Prerequisite: A reading knowledge of French or German.

Course: Sociology 2, 3, and 4; Economics 8 or 12; any six additional units selected from Third and Fourth Year courses offered in the Department; a graduating essay which will count three 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.

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, 10.

(i) Any Two of

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

Economics

Prerequisite: A reading knowledge of French or German.

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

Course: Twelve units, including Economics 4, 9, 12, 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.

Political Science

Prerequisite: A reading knowledge of French or German.

Course: Twelve units, including at least six in Government.

Psychology

Prerequisites: Psychology 1, Philosophy 1.

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

Sociology

Prerequisite: A reading knowledge of French or German.

Course: Twelve units, including Sociology 2, 3, and 4, and Economics 8 or 12.

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.

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.

Second Year

The following courses comprising 15 units:

English 2.

Mathematics 2 or 3, or an additional course in the language taken in the First Year. Students who contemplate taking advanced work in Statistics should take Mathematics 2 or 3.

Economics 1.

Commerce 5.

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 12, 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 English *or* 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).

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. Students who select the language option will be required to take in the Fourth Year an additional course in the language selected.

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.

Electives for Third and Fourth Years:

Commerce 11.

Commerce 2.

Commerce 3.

Commerce 13.

Economics 13.

Economics 11.

Economics 5.

Government 1.

Government 4.

Government 5.

Mathematics 2, 3.

Additional course in Latin, French, German, or Greek, provided that the language was taken in the Second and Third Years.

Psychology 1, 7.

Agricultural Economics 1.

Mining (3 units).

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 *Instructions 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 95-101.

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.

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

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.

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. The Academic Certificate will be regarded as satisfying these prerequisites.

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.

Geology

Prerequisites:

Minor: Geology 1 and 2, and three or four units from the following: Geology 4, 5, 6, 7, 8, 10, and 11, and Geography 4.

Major: Geology 1, 2, 4, 7, 8, 9, and 10, and one of Geology 6 and 11, Geography 4, and Economics 10.

M.A. Course:

Minor: Six or more units from the following, not already taken as prerequisites: Geology 4, 5, 6, 7, 8, 9, 10, 11, 20, 21, 23, 24, 25, and 26, Geography 4, and Agronomy 15.

Major: Three units from Geology 20, 21, 23, 24, 25, and 26, and three units from courses not already taken; a thesis of at least three units value, which must be related to the specialization represented by the graduate course selected.

History

Prerequisites:

Minor: Three courses (nine units) to be chosen from History 10 to 20 inclusive, and 25.

Major: Four courses (twelve units) to be chosen from History 10 to 20 inclusive, and 25.

M.A. Course:

Minor: Two courses (six units) to be chosen from History 10 to 20 inclusive, and 25, or the equivalent in reading courses.

Major: Two related courses (six units) to be chosen from History 10 to 20 inclusive, and 25, 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.

Political Science*Prerequisites:*

- Minor:** A minimum of fifteen units in the Department (or an equivalent), including Government 1; or Honours in Political Science in combination with some other subject.
- Major:** Honours in 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.

Psychology*Prerequisites:*

- Minor:** Six units chosen from Psychology 2, 3, 4, 5, 6, 7, 8, 9, 10.
- Major:** Philosophy 1 and 8, and nine units chosen from Psychology 2, 3, 4, 5, 6, 7, 8, 9, 10. 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.

Sociology

(Minor only)

Prerequisites:

- Minor:** A minimum of six units of work regularly offered in Sociology.

M.A. Course:

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

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

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 141-143.

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

Third and Fourth Years:

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

2. The passing mark is 50 per cent. in each subject. 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 taking at least fifteen units of work 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 supplemental will be granted in a subject which a candidate has taken during the year, provided he has written the final examination and has obtained a mark of not less than 30 per cent. A candidate, however, will not be granted in any one year supplementals in more than six units.

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 failure or 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 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 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;

Bigger, *Handbook of Bacteriology*, latest edition, Williams and Wilkins.

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, 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: 11.30-12.30, Tuesday and Thursday.

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 12, 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.

Four hours a week. Second Term. 1½ units.

Lectures: 1.30-3.30, Thursday.

Laboratory: 2.30-4.30, 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 Biology and 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. Students interested in plant breeding may elect Agronomy 50 (b) as an equivalent of this course.

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 1941-42.)

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; Trelease, *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. Field trips. First Term. 2 units.

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory: 3.30-5.30, Monday.

(b) A seminar and problem course in more advanced Forest Ecology.

Prerequisite: Botany 7 (a).

Five hours a week. First Term. 2 units.

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. *General Survey of 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.

Reference: Deming, *Fundamental Chemistry*, Wiley.

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, crystal-

lization, 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. Summer reading: Read, *Industrial Chemistry*, Wiley.

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

Two lectures a week.

2 units.

7. *Physical Chemistry*.—This course is a continuation of Chemistry 4 and treats in more detail the kinetic theory of gases, properties of liquids and solids, elementary thermodynamics and thermochemistry, properties of solutions, theoretical electrochemistry, chemical equilibrium, kinetics of reactions, radioactivity.

Text-books: Getman, *Outlines of Theoretical Chemistry*, Wiley; Noyes and Sherrill, *Chemical Principles*, Macmillan. References for laboratory: Sherrill, *Laboratory Experiments on Physico-Chemical Principles*, Macmillan; Findlay, *Practical Physical Chemistry*, Longmans.

Prerequisites: Chemistry 2, 3, and 4; Mathematics 10, which may be taken concurrently.

Two lectures and one laboratory period a week.

3 units.

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: 1.30-5, Monday.

8. *Electrochemistry*.—(a) Solutions are studied from the standpoint of the osmotic and dissociation theories. The laws of electrolysis, electroplating, electromotive force, and primary and secondary cells are considered in detail.

Text-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; Partington, *A Short History of Chemistry*, Macmillan.

Two hours a week. Second Term. 1 unit.

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.

17. *Chemical Thermodynamics*.—Study of first, second, and third laws; derivation of fundamental equations and their application to the gas laws, chemical equilibrium, theory of solutions, electro-chemistry, and capillarity.

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

Prerequisite: Chemistry 7.

One lecture a week. 1 unit.

(Given in 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 1942-43 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 a week.

1 unit.

(Given in 1942-43 and alternate years.)

Department of Classics

Professor: Lemuel Robertson. (Session 1940-41.)

Professor: O. J. Todd. (Session 1941-42.)

Associate Professor: Louis A. MacKay.

Instructor: Patrick C. F. Guthrie.

Lecturer: Jean M. Auld.

Lecturer: Geoffrey B. Riddehough.

Greek

Greek 1 is open to students who have presented Greek for University Entrance or have taken the beginners' course in the University; Greek 2 is open to those who have passed in Greek 1 or in Senior Matriculation Greek.

Of the courses numbered 3, 5, 6, and 7 only two are normally available in any one year.

Beginners' Greek.—The elements of Attic Greek.

Text-book: White, *First Greek Book*, chap. I-XLVIII, Ginn.

Four hours a week, to be arranged. 3 units.

1. *Introduction to Greek Prose Authors.*—After completing the beginners' book, the course will present the first book of Xenophon's eye-witness account of the march made by the "Ten Thousand" Greeks into Asia Minor. There will be practice in composition, and reading in the history of Greece.

Text-books: White, *First Greek Book*, chap. XLIX-LXXX, 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.

Text: Xenophon, *The First Four Books of Xenophon's Anabasis*, Goodwin and White, Ginn.

Four hours a week, to be arranged. 3 units.

2. *Greek Literature of the Classical Period.*—Plato's account of Socrates' defence at his trial will be followed by an introduction to Greek tragedy in a play of Aeschylus. There will be practice in composition, and a brief survey of Greek literary history.

Text-books: North and Hillard, *Greek Prose Composition* (sections 17-44), Rivingtons; Norwood, *The Writers of Greece*, Oxford.

Texts: Plato, *Apology*, Adam, Cambridge Elementary Classics; Aeschylus, *Prometheus Vincitus*, Sikes and Willson, Macmillan.

Four hours a week, to be arranged. 3 units.

3. *Greek Drama.*—Lectures on the development of Greek tragedy and comedy and on scenic antiquities; the reading of representative plays of Sophocles, Euripides, and Aristophanes, and of Aristotle's discussion of tragedy in his *Ars Poetica*.

Texts: Sophocles, *Antigone*, Jebb and Shuckburgh, Cambridge;

Euripides, *Heracles*, Byrde, Oxford; Aristophanes, *Aves*, Hall and Geldart, Oxford; Aristotle, *Ars Poetica*, Bywater, Oxford.

Three hours a week. 3 units.

5. *Epic and Lyric Poetry*.—Selections from Homer's *Iliad* and from the Greek lyric anthology.

Texts: Homer, *Iliad*, Monro, 2 vols., Oxford; *Greek Elegiac, Iambic, and Lyric Poets*, Harvard.

Three hours a week. 3 units.

6. *Greek Historians*.—Lectures on the rise of Greek historical writing; the reading of selections from Herodotus and Thucydides.

Texts: *Herodoti Historiae*, Hude, Oxford; Thucydides, *History, Book VII*, Marchant, Macmillan.

Three hours a week. 3 units.

7. *Introduction to Greek Philosophy*.—A survey of the beginnings of Greek philosophic inquiry; the reading of selections from two of the major works of Plato and Aristotle.

Texts: Plato, *Respublica*, Burnet, Oxford; Aristotle, *Ethica Nicomachea*, Bywater, Oxford.

Three hours a week. 3 units.

8. *Composition*.—Obligatory for Honours students; to be taken in both Third and Fourth Years.

One hour a week. 1 unit.

9. *Greek History to 14 A.D.*—The course will include in the First Term a study of the background and rise of Greek civilization, with special attention to the social and political life in the fifth century city states; in the Second Term, a study of the following century and a survey of Hellenistic civilization, with special emphasis on the contribution of the Hellenistic Age to Graeco-Roman culture.

A knowledge of Greek is not prerequisite for this course.

Text-books: Laistner, *Greek History*, Heath; Cary, *A History of the Greek World from 323 to 146 B.C.*, Methuen.

Three hours a week. 3 units.

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

(Given in 1941-42 and alternate years.)

14. *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. Aristotle, *Politica*, Immisch, Teubner.

Latin

Latin 1 is open to students who have presented Latin for University Entrance or have taken the beginners' course in the University; Latin 2 is open to those who have passed in Latin 1 or in Senior Matriculation Latin.

Beginners' Latin.—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.

Text-book: Collar and Daniell, *First Year Latin*, revised by Jenkins, Ginn.

Text: *A Book of Latin Poetry*, Neville, Jolliffe, Dale and Breslove, Macmillan.

Four hours a week.

3 units.

11.30-12.30, Tuesday, Thursday, and Saturday, and a fourth hour to be arranged.

1. *Prose and Poetry of the Golden Age*.—The course opens with the historian Livy's account of operations in Eastern Sicily during the Second Punic War; in the Second Term will be read some of

the lyric poetry of Catullus. There will be practice in composition, and reading in the history of Greece.

Text-books: Marchant and Watson, *Latin Prose Composition*, Bell; Robertson and Robertson, *The Story of Greece and Rome*, chap. I-XXXII, Dent.

Texts: Livy, *Book XXV*, Monro, Oxford; Catullus, *Selections*, Macmillan, Oxford.

Three hours a week.

3 units.

Section 1: 8.30-9.30, Monday, Wednesday, and Friday;

Section 2: 10.30-11.30, Tuesday, Thursday, and Saturday.

2. *Prose and Poetry of the Golden Age (Second Course)*.—Reading in some of the public addresses of Cicero and in the developed epic as represented by Vergil; brief history of Rome.

Text-book: Robertson and Robertson, *The Story of Greece and Rome*, chap. XXXIII-LIV, Dent.

Texts: Cicero, *Catilinarian Orations*, Upcott, Oxford; Vergil, *Aeneid VI*, Page, Macmillan.

Three hours a week.

3 units.

Section 1: 8.30-9.30, Tuesday, Thursday, and Saturday;

Section 2: 9.30-10.30, Tuesday, Thursday, and Saturday.

3. *Roman Comedy*.—A study of typical plays of Plautus and Terence, illustrative of the Greek influence on the Roman stage; brief history of Latin literature.

Text-book: Duff, *The Writers of Rome*, Oxford.

Texts: Plautus, *Menaechmi*, Knight, Cambridge; Terence, *Phormio*, Bond and Walpole, Macmillan.

Three hours a week.

3 units.

1.30-2.30, Monday, Wednesday, and Friday.

(Given in 1942-43 and alternate years.)

NOTE. In Latin 3, 4, 5, and 6 additional reading will be arranged for Honours students. All students are advised to provide themselves with Allen and Greenough, *New Latin Grammar*, Ginn.

4. *Prose and Poetry of the Silver Age*.—The second great period of Latin literature will be studied in the works of the historian Tacitus and the satirist Juvenal. Brief history of Latin literature.

Text-book: Duff, *The Writers of Rome*, Oxford.

Texts: Tacitus, *Selections*, Marsh and Leon, Prentice-Hall; Juvenal, *Satires*, Duff, Cambridge.

Three hours a week.

3 units.

1.30-2.30, Monday, Wednesday, and Friday.

(Given in 1941-42 and alternate years.)

5. *Latin Letter Writing*.—A study of three different styles of letters—personal correspondence, essays in verse, and philosophical discussions—by three masters in three successive periods.

Texts: Cicero, *Selected Letters*, Prichard and Bernard, Oxford; Horace, *Epistles*, Wilkins, Macmillan; Seneca, *Select Letters*, Summers, Macmillan.

Three hours a week. 3 units.

8.30-9.30, Tuesday, Thursday, and Saturday.

(Given in 1942-43 and alternate years.)

6. *General View of Latin Poetry*.—This course offers a survey of Latin poetry from the earliest native verse, through the period of Greek influence, into the late Imperial and early Christian literature.

Three hours a week. 3 units.

8.30-9.30, Tuesday, Thursday, and Saturday.

(Given in 1941-42 and alternate years.)

7. *Roman History*.—A survey of the growth of Rome and the development of its political institutions. Essays on selected topics will be assigned.

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 1942-43 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: 1.30-2.30, 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.

PRIMARILY FOR GRADUATE STUDENTS

21. Cicero, *Select Letters*, 2 vols., How, Oxford.

Three hours a week. 3 units.

22. 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. <i>Roman Comedy</i> .	3 units.
24. Vergil, <i>Aeneid</i> .	3 units.

Department of Commerce

Professor: Ellis H. Morrow.

Associate Professor: A. W. Currie.

Lecturer in Accountancy: Frederick Field.

Lecturer in Commercial Law: Reginald H. Tupper.

The courses in this department, with the exception of Commerce 5 and 9, are open only to candidates for the degree of B.Com. Owing to the nature of work involved in subjects of a commercial character, these courses are not available as reading courses.

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. Owing to the continuity of the work in accounting, students who are more than two weeks late in registering will not be permitted to register in Commerce 1 without the permission of the instructor.

Commerce 1 is a prerequisite to all other courses in Commerce, but may be taken concurrently with Commerce 6.

Text-book: To be assigned.

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

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

Laboratory: 1.30-2.30 Thursday.

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 1941-42.)

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 of a commercial character 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.

Text-book: Klimm, Starkey and Hall, *Introductory Economic Geography*, 2nd edition, Harcourt, Brace.

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: Masson and Stratton, *Problems in Corporation Finance*, McGraw-Hill.

Assigned readings.

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.

Reference: Lansburgh and Spriegel, *Introduction to Industrial Management*, McGraw-Hill.

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

(Given in 1942-43 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.

Associate Professor: G. F. Drummond.

Associate Professor of Economics and Sociology: 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 Elizabeth Grubb, Diploma, London School of Economics, Supervisor of Field Work.

Part-time Lecturers

Miss Marjorie Bradford, B.Sc. (Alberta).
 M. Chater, B.Sc. (Y.M.C.A. College).
 Miss Isobel Harvey, M.A. (Brit. Col.).
 Miss Elizabeth King, M.A. (Acadia).
 Miss Mary McPhe dran, 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-book: Logan and Inman, *A Social Approach to Economics*, 1939, University of Toronto.

References: Bladen, *An Introduction to Political Economy*, University of Toronto; Garver and Hansen, *Principles of Economics*, 1937, Ginn; *Canada Year Book*, 1940, Dominion Bureau of Statistics.

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, Economics 10, and Sociology 1, but may be taken concurrently with 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.

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.

References: Willis and Beekhart, *Foreign Banking Systems*, Holt; Hayek, *Prices and Production*, Cape; Haberler, *Prosperity and Depression*, Columbia; 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*.—The development of the science of government finance; the growth of the sphere of government and increase in the tax burden; the Canadian and Empire tax systems; personal, property, and business taxes; income and inheritance taxes; financing relief and other public undertakings; 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 1941-42.)

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, which is identical with Commerce 9, is open only to Fourth Year students.)

Text-book: Masson and Stratton, *Problems in Corporation Finance*, McGraw-Hill.

Assigned readings.

Three hours a week. Mr. Currie. 3 units.
Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

9. *History of Economic Thought*.—The development of economic theory, with special reference to the Mercantilists, the Physiocrats, and Adam Smith; the distinguishing characteristics and the modern counterparts of the Classical, Historical, Socialist, and Marxian economic doctrines; the immediate background and present emphases of the science.

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 the 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.)

Text-book: Klimm, Starkey and Hall, *Introductory Economic Geography*, 2nd edition, Harcourt, Brace.

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-book: Jackman, *Economic Principles 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 main problems of agriculture, and some special topics, such as production in relation to population growth, farm tenancy, rural credits, prices of farm products, and the share of agriculture in the national income.

References and assigned readings from Taylor, Carver, Nourse, Gray, Black, 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 contribution

of Farmer Movements to our knowledge of marketing, co-operative marketing, and the evolution of marketing legislation.

References and assigned readings from Patton, McIntosh, Hibbard, Black, Boyle, Macklin, Benton, and others.

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

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

FOR GRADUATE STUDENTS

50. *Agricultural Economics*.—The principles of economics as applied to the individual farm and to agriculture as an industry. Lectures, discussions, and assigned readings.

Prerequisite: *Agricultural Economics 1*.

Mr. Clement. 3 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 readings.

Prerequisite: *Agricultural Economics 2*.

Mr. Clement. 3 units.

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 1941-42.)

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 1941-42.)

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: Ogburn and Nimkoff, *Sociology*, 1940, McGraw-Hill.

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

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

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*, 1940, Farrar and Rinehart; Goldenweiser, *Anthropology*, 1937, Crofts.

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

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

(Given 1941-42 and alternate years.)

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.

(Not given 1941-42.)

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.

(Not given 1941-42.)

5. *Social Statistics*.—The collection, analysis, and presentation of data pertaining particularly to the social services; the nature and meaning of samples, averages, dispersion, trends; correlation and cost of living indices; social survey procedures.

Text-book: Croxton and Cowden, *Applied General Statistics*, Prentice-Hall.

Readings to be assigned.

Three hours a week. 3 units.

Lectures: 1.30-2.30, Monday.

Laboratory: 3.30-5.30, Friday.

(Not given in 1941-42.)

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, 1941. 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, 1941. 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. Mr. Chater. 1 unit.
Lectures: 11.30-12.30, Thursday.

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: 10.30-11.30, Friday.

11. *Administration*.—Elements of administrative organization in social agencies; functions and interrelations of boards of directors, executives, and staff; principles involved in formulation and administration of finance policy, budgeting, and accounting; office management; principles of executive efficiency.

Two hours a week. Second Term. Miss Bradford. 1 unit.
Lectures: 11.30-12.30, Monday and 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, Tuesday.

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 hour a week. Mr. Creighton. 1 unit.
Lectures: 9.30-10.30, Friday.

Nursing B 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 a week. Mr. Crease and special lecturers. 1 unit.
Lectures: 3.30-4.30, Monday.

Nursing B. 27. *The Family*.—A study of the rise, structure, and functioning of the family, with special emphasis on the dynamic elements of this basic institution.

Two hours a week, First Term. Mr. Topping. 1 unit.
Lectures: 11.30-12.30, Monday and Friday.

Department of Education

Professor: G. M. Weir. (On leave of absence.)

Associate Professor: M. A. Cameron.

Associate Professor: D. H. Russell.

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

Lecturers in Methods:

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

Special Lecturers: N. F. Black, Miss S. M. Boyles, Miss M. B. Carruthers, Miss J. E. Casselman, Mrs. I. B. Green, T. R. Hall, Miss M. McManus, M. Van Vliet, 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*.—The first part of this course deals with some of the broader principles of method and the main types of teaching and learning activities. The second part of the course attempts to develop a philosophy of education around such topics as the individual and society, curriculum theories, and the role of education in a democracy.

Text-books: Garrison, *Technique and Administration of Teaching*, American Book Co.; Dewey, *Democracy and Education*, Macmillan.

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

10. *Educational Psychology*.—The applications of psychology to education; a consideration of the origin, motivation, development, and modification of human behaviour; native equipment; intelligence; individual differences; learning; the transfer of training; the mental hygiene of the school child; and the psychology of elementary and secondary school subjects.

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

Prerequisite: Psychology 1.

Lectures: 2.30-3.30, Monday, Tuesday, and Friday.

12. *School Administration and Law*.—The organization of the school system; aims and characteristics of the elementary, junior high, and senior high schools; fundamentals of school administration; control; the co-curriculum; accrediting; correspondence courses; 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*.

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

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, Health and Physical Education, Librarianship, Guidance.

(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.

NOTE. Supplementals will not be granted in the practice teaching. Students who fail in practice teaching will be required to repeat this part of the Second Term of the Teacher Training Course.

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.*
24. *Statistics and Methods of Research.*

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.
 Assistant Professor: M. L. Bollert.
 Assistant Professor: H. C. Lewis.
 Assistant Professor: Dorothy Blakey.
 Assistant Professor: Edmund Morrison.
 Assistant Professor: F. E. L. Priestley.
 Assistant Professor: Dorothy Mawdsley.
 Lecturer: John H. Creighton.
 Assistant: R. P. D. Poisson.

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-books: Kierzek, *The Macmillan Handbook of English*, Macmillan; Biaggini, *The Reading and Writing of English*, Harcourt, Brace.

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.

Text-book: 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 1941-42, 9 (a) will be given as follows:

i. A detailed study of the text of *Romeo and Juliet*, *Twelfth Night*, *Hamlet*, *King Lear*, *The Winter's Tale*.

ii. Lectures on Shakspeare's development, on his use of sources, and on his relation to the stage and the dramatic practice of his time.

Students will provide themselves with annotated editions of the five plays named above, and with *The Facts About Shakspeare*, by Neilson and Thorndike, Macmillan. They are advised to get *The Complete Works of Shakspeare*, ed. Kittredge, Ginn, or the *Cam-*

bridge 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. (b) (Given in 1942-43 and alternate years.)

10. *The Drama to 1642*.—The course begins with a study of the Theban plays of Sophocles and of Aristotle's theory of tragedy. The main subject of the course is Elizabethan drama: (1) its beginnings in the Miracle and Morality Plays and in the Interludes; (2) its development in Shakspeare's predecessors—Lyly, Peele, Greene, Kyd, and Marlowe; (3) its culmination in Shakspeare; and (4) its decline in Jonson, Beaumont and Fletcher, Middleton, Webster, Massinger, Shirley, and Ford.

Texts: Campbell, *Sophocles in English Verse*, World's Classics, Oxford; *Everyman and Other Interludes*, Dent; *Elizabethan Dramatists, Other Than Shakespeare*, ed. Oliphant, Prentice-Hall; *Shakespeare*, Shakespeare Head Press, or the *Cambridge Shakespeare*, ed. Neilson, Houghton Mifflin.

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

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

13. *The English Novel from Richardson to the Present Time*.—The development of English fiction will be traced from Richardson, Fielding, Smollett, and Sterne through Goldsmith, Mrs. Radcliffe, Jane Austen, Scott, C. Brontë, Dickens, Thackeray, and George Eliot to Trollope, Meredith, Stevenson, Hardy, and a few representative novelists now living.

A fair knowledge of the works of Jane Austen, Scott, Dickens, Thackeray, and George Eliot is a prerequisite for those taking this course.

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

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

14. *Eighteenth Century Literature*.—This course aims to give a view, as comprehensive as possible, of the main currents of English thought and literature during the period 1660-1800. It is concerned mainly with the work of such men as Dryden, Pope, Swift, Addison, Steele, Johnson, Goldsmith, Burke, and Burns.

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

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

16. *Romantic Poetry, 1780-1830*.—Studies in the beginnings and progress of Romanticism, based chiefly on the work of Wordsworth, Coleridge, Byron, Keats, Shelley, Scott.

Text-book: Bernbaum, *Guide Through the Romantic Movement*, 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. Mr. Priestley. 3 units.
Lectures: 2.30-3.30, Monday, Wednesday, and Friday.

18. *Victorian Prose Literature*.—Literary, social, religious, and scientific currents of thought as represented by the work of Mill, Ruskin, Carlyle, Newman, Arnold, Darwin, Huxley, and Butler. The following texts in whole or part will be dealt with in lectures and class discussion: Mill, *Utilitarianism and Liberty*, Everyman; Ruskin, *Unto This Last*, Everyman; Carlyle, *Sartor Resartus* (selections), *Heroes and Hero Worship* (selections), *Past and Present*, Everyman; Newman, *Apologia Pro Vita Sua*, Everyman; *Idea of a University* (selections), ed. Yardley, Cambridge; Arnold, *Representative Essays*, ed. Brown, Macmillan, *Literature and Dogma* (selections), Burt's Home Library; Darwin, *Origin of Species*, Chapter IV, Everyman, or *World's Classics*, Oxford; Huxley, *Readings from Huxley*, ed. Rinaker, 1934, Harcourt, Brace; Butler, *Erewhon*, Everyman.

Three hours a week. Mr. MacDonald. 3 units.
Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

(Not given in 1941-42.)

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 and 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 1942-43 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 1941-42 will be the literature of the 1590's.

Two hours a week. Mr. Sedgewick. 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 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.

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.

NOTE. Students who take either 2 (a) or 2 (b) separately will be required to pass in both the lecture and the laboratory divisions. Those who take both 2 (a) and 2 (b) may be required to pass in each.

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; Berry, *Paleontology*, McGraw-Hill.

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 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 manner of occurrence, genesis, structure, and distribution of the principal metallic and non-metallic mineral deposits, with type illustrations; special stress is placed upon Canadian deposits.

Text-book: Ries, *Economic Geology*, 7th edition, 1937, Wiley.

Prerequisites: Geology 2, 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: U. S. Geological Survey Bulletin 914, *Microscopic Determination of the Ore Minerals*.

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. The cost to each student may approach \$10.

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

Prerequisites: Geology 2 and 4.

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 of various national surveys.

Prerequisite: Geology 5.

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

COURSES FOR GRADUATE STUDENTS

20. *Sedimentation*.

Text-book: Twenhofel, *Principles of Sedimentation*, McGraw-Hill.

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 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 914, *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 and two hours laboratory a week. Mr. Swanson.

3 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.

Prerequisites: Geology 7 and 8.

Two hours seminar and two 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 1942-43 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, Philosophy 4, 9, Psychology 3, 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 advisable.

French, at least, will be required for Honours work, and the study of German is 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: Bennis, *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.

2. *The History of Canada*.—Geographical factors; exploration and early settlements; the French Régime; economic, 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; Sage, *Canada from Sea to Sea*, University of Toronto.

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 1942-43 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*, University of Toronto; England, *The Colonization of Western Canada*, King; Morton, *A History of the Canadian West to 1870-71*, Nelson; Sage, *Canada from Sea to Sea*, University of Toronto.

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, 20, and 25 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; 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 1941-42, and alternate years, 11 (b) will be given, which deals with the establishment of British authority in India, the Crown Colonies, Protectorates and Mandates, and with the principles and problems of colonial administration.

Bibliographies for voluntary summer reading will be supplied on application to the instructor in charge.

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

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

12. *History of the United States of America.*—This course begins with a sketch of the American colonies at the outbreak of the Revolution and traces the history of the United States from the commencement of the War of Independence to the outbreak of the Second World War.

Text-book: Faulkner, *American Political and Social History*, Crofts.

Essays will be assigned throughout the session.

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

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

13. *The Age of the Renaissance and Reformation.*—A study of the cultural development of Europe from the 14th to the 17th century, including a consideration of the transition from the Mediaeval to the modern world; humanism; Renaissance art; overseas exploration and expansion; the rise of national states; the Reformation; the scientific revolution and intellectual developments.

Text-book: Lucas, *The Renaissance and the Reformation*, Harpers.

Readings and reports will be assigned.

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

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

14. *Europe from Westphalia to Waterloo*.—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.

(Not given in 1941-42.)

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.

(Not given in 1941-42.)

17. *Social and Economic History of Europe, 1800-1940*.—A study of social and economic change in Europe in the 19th and 20th centuries.

Text-books: Birnie, *An Economic History of Modern Europe*, Methuen; Clapham, *Economic Development of France and Germany 1815-1914*, Cambridge; Day, *Introduction to World Economic History Since the Great War*, Macmillan.

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 1941-42.)

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: Williamson, *The Evolution of England*, Oxford; Fay, *Life and Labour in the Nineteenth Century*, Oxford; Ensor, *England, 1870-1914*, Oxford; Stephenson and Marcham, *Sources of English Constitutional History*, Harpers; 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.

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-books: Barnes, *A History of Historical Writing*, Oklahoma University; Shotwell, *An Introduction to the History of History*, Columbia; Gooch, *History and Historians in the 19th Century*, Longmans.

Three hours a week. Miss Thrupp.

3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

Greek 9. *Greek History to 14 A.D.* (See under Classics, page 125.)

Latin 7. *Roman History*. (See under Classics, page 128.)

Department of Mathematics

Professor: Daniel Buchanan.

Professor: F. S. Nowlan.

Professor: Ralph Hull.

Professor: L. Richardson.

Associate Professor: Walter H. Gage.

Instructor: May L. Barclay.

Lecturer: S. A. Jennings.

GENERAL COURSES

1. *Introductory Mathematics*.—An elementary course in algebra, including proportion, variation, logarithms, progressions, theory of quadratic equations, permutations, combinations, annuities, binomial theorem; analytical geometry, including the study of the straight line and the circle, with an introductory study of the parabola, ellipse, and hyperbola; elementary trigonometry.

Text-books: Brink, *Algebra, A College Course*, Appleton-Century; Nowlan, *Analytic Geometry*, McGraw-Hill; Brink, *Plane Trigonometry with Tables*, Appleton-Century.

Four hours a week. 3 units.

Lectures:

Section 1, 9.30-10.30, Monday, Wednesday, Friday; 1.30-2.30, Tuesday;

Section 2, 9.30-10.30, Tuesday, Thursday, Saturday; 1.30-2.30, Thursday;

Section 3, 11.30-12.30, Tuesday, Thursday, Saturday; 1.30-2.30, Thursday.

2. (a) *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-books: Nowlan, *Analytic Geometry*, McGraw-Hill; 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, Mr. Hull. 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. Jennings. 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*, latest edition, 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. Jennings. 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 1942-43 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: To be selected.

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: Smail, *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 1942-43 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.

Text-book: Woods, *Advanced Calculus*, Ginn.

Reference: Burington and Torrance, *Higher Mathematics*, McGraw-Hill.

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 1942-43 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.

COURSES FOR GRADUATE STUDENTS

20. *Tensor Analysis*.—Text-book: McConnell, *Applications of the Absolute Differential Calculus*, Blackie.

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, *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; Bruchési, *Histoire du Canada pour tous*, Vol. I, Lévesque.

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, *Le Père Goriot*, Nelson; *Anatole France*, Nelson. Independent reading to include Balzac, *La Peau de Chagrin*, *Le Curé de Tours*, *Le Colonel Chabert*, Nelson; A. de Chateaubriant, *Monsieur des Lourdinès*, 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 University 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) *French Practice*.—Phonetics; 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).

Text-books: Klinghardt and Fourmestaux, *French Intonation Exercises*; Nicholson, *A Practical Introduction to French Phonetics*, Macmillan.

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.

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 Practice*.—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 XVIIth Century*.—Texts: *Le Mystère d'Adam*, Manchester University Press; Rabelais, *Gargantua* xiv, xv, xxi, xxiii, xxiv, *Pantagruel* viii, Jouaust; Montaigne, *Selected Essays*, Manchester University Press; Ronsard, *Poésies choisies*, Garnier. 3 units.

5. (c) *The History of French Criticism*.—French literary criticism and theory, from the Pléiade to the present day.

Text-book: Vial-Denise, *Idées et doctrines littéraires*, three vols., Delagrave. 3 units.

5. (d) *Contemporary French Literature*.—The poetic movement from Péguy to the Surréalistes.

Texts: *Anthologie de la nouvelle poésie française*, Kra. *Lectures expliquées* from Valéry, *Variété* i, 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; Bruns, *Book of German Lyrics*, Heath.

Prerequisite: University Entrance or Beginners' German.

Three hours a week. 3 units.

Lectures:

Section 1, 8.30-9.30, Tuesday, Thursday, and Saturday;

Section 2, 9.30-10.30, Tuesday, Thursday, and Saturday.

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.

Three hours a week. 3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

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 1 (b) or the equivalent.

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.

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: John Allan Irving.

Associate Professor: Thomas Greenshields Henderson.

Assistant Professor: Joseph E. Morsh.

Assistant Professor of Psychology and Education: F. 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. Henderson. 3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

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. 3 units.

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

(Given in 1942-43 and alternate years.)

4. *History of Modern Philosophy*.—The Renaissance; the rise of modern science, and its transformation of traditional beliefs; continental rationalism (Descartes, Spinoza, Leibniz); English empiricism (Bacon, Locke, Berkeley, Hume); the Age of Reason in France; the encyclopedists; French materialism; Rousseau.

Text-books: Burt, *The English Philosophers from Bacon to Mill*, The Modern Library, Random House; Rand, *Modern Classical Philosophers*, Houghton Mifflin.

Three hours a week. Mr. Henderson. 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 1942-43 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: Mead, *Mind, Self and Society*, University of Chicago.

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 1942-43 and alternate years.)

7. *Philosophy of Education.*—A course of lectures and discussions dealing with educational movements since the beginning of the 19th century, and with the theories of life and of mind which are implicit in these movements.

Text-books: Spencer, *Education*, Everyman; Dewey, *Democracy and Education*, Macmillan.

References: Demiaskevich, *An Introduction to the Philosophy of Education*; Jacks, *The Education of the Whole Man*; Martin, *The Meaning of a Liberal Education*; Lodge, *The Philosophy of Education*; Whitehead, *The Aims of Education and Other Essays*; Hutchins, *The Higher Learning in America*.

Psychology 1 or Philosophy 1 is recommended as preparatory to this course.

Three hours a week.

3 units.

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

(Not given in 1941-42.)

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. Mr. Henderson. 3 units.

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

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 1941-42 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. Mr. Henderson. 3 units.

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

(Given in 1941-42 and alternate years.)

Psychology

Psychology 1 is a prerequisite for all courses in Psychology numbered 2-10, which are open only to Third and Fourth Year students.

A. *Introduction to Psychology*.—The background of behaviour; psychology and people; psychological problems; individual differences; observing, learning, and thinking. This is an introductory

course intended primarily for First Year students. Psychology A will not be accepted as a preparation for advanced courses but is open to students of the upper years who propose to take no further work in psychology. Open to First Year students.

Text-book: Pressey, Janney, and Kuhlen, *Life: A Psychological Survey*, Harpers.

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: 11.30-12.30, Tuesday, Thursday, and Saturday.

(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: Dorcus 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 1942-43 and alternate years.)

6. *Psychological Measurement and Statistics*.

(a) *Psychological Measurement*.—History and principles of mental measurement; intelligence tests; interest inventories and attitude scales.

(b) *Statistics*.—Measures of central tendency and variability; correlation; the normal curve; comparable scores; sampling and reliability. The use of statistics in the preparation and interpretation of tests will be emphasized.

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.

(Not given in 1941-42.)

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 1941-42.)

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 1942-43 and alternate years.)

20. *Psychology Seminar: Conditioning, Learning, and Remembering*.—This course is offered primarily for Honours and Graduate students. It is open to a limited number of Fourth Year students by permission of the instructor. Reports and discussions will be based on assigned readings.

References: Bartlett, *Remembering*, Cambridge; Book, *Economy and Technique of Learning*, Heath; Davis, *Psychology of Learning*, McGraw-Hill; Ebbinghaus, *Memory*, Columbia; Guthrie, *The Psychology of Learning*, Harpers; Hilgard and Marquis, *Conditioning and Learning*, Appleton-Century; Holt, *Animal Drive and the Learning Process*, Holt; Meumann, *The Psychology of Learning*, Appleton-Century; Pavlov, *Conditioned Reflexes*, Oxford; Thorndike, *Human Learning*, Appleton-Century; Tolman, *Purposive Behavior in Animals and Men*, Appleton-Century; Troland, *The Fundamentals of Human Motivation*, Van Nostrand; Young, *Motivation of Behavior*, Wiley.

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

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

Department of Physics

Professor: Gordon Merritt Shrum.

Professor: A. E. Hennings.

Assistant Professor: A. M. Crooker. (On leave of absence.)

Assistant Professor: Harold D. Smith.

Assistant Professor: Kenneth C. Mann.

Assistant Professor: George Michael Volkoff.

Lecturer: Joseph M. Keller.

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: White, *Classical and Modern Physics*, Van Nostrand.

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: 1.30-4.30, Wednesday.

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.

If credit has not been obtained in Mathematics 10 and 12 they should be taken concurrently with this course.

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-book: To be announced.

Reference: Hull, *An Elementary Survey of Modern Physics*, Macmillan.

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

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: Noakes, *A Text-book of Light*, Macmillan.

References: Gleichen, *Theory of Modern Optical Instruments*, H.M. Stationery Office; Hardy and Perrin, *The Principles of 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: To be announced.

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) *Mechanics of Flight and Ballistics*.—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. *Advanced Analytical Dynamics*.—A lecture course on the generalized methods of Lagrange, Hamilton, and Jacobi.

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.

Department of Zoology

Professor: W. A. Clemens.

Associate Professor: G. J. Spencer.

Assistant Professor: I. McT. Cowan.

NOTE. Biology 1 is prerequisite to all courses in Zoology.

1. *General Zoology*.—A course on the structure, classification, life histories, and biology of animals.

This course is prerequisite to other courses in Zoology.

Text-book: Hegner, *College Zoology*, 4th edition, 1936, Macmillan.

References: Buchsbaum, *Animals Without Backbones*, University of Chicago; Hegner, *Invertebrate Zoology*, Macmillan; Newman, *Vertebrate Zoology*, Macmillan.

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

3 units.

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: Section 1, 1.30-3.30 Thursday;

Section 2, 3.30-5.30 Thursday;

Section 3, 2.30-4.30 Monday.

2. *Comparative Anatomy of Vertebrates*.—The phylogeny and comparative anatomy of the vertebrates and protochordates. The dissection of representative forms.

Text-book: Neal and Rand, *Chordate Anatomy*, Blakiston.

Laboratory Manual: Little and Kempton, *A Laboratory Manual for Comparative Anatomy*, 1940, Macmillan.

References: Parker and Haswell, *A Text-book of Zoology*, Vol. 2, Macmillan; Goodrich, *Studies on the Structure and Development of Vertebrates*, Macmillan.

Two lectures and eight hours laboratory a week. Second Term.
Mr. Cowan. 3 units.

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory: 1.30-5.30, Tuesday; 1.30-3.30, Thursday; and two hours to be arranged.

3. *Invertebrate Zoology*.—A detailed course on the anatomy, taxonomy, and life histories of the invertebrates, with special reference to marine forms.

References: Parker and Haswell, *A Text-book of Zoology*, Vol. 1, 6th edition, Macmillan; Hyman, *The Invertebrates*, McGraw-Hill; Borradaile and others, *The Invertebrata*, Cambridge; Pratt, *Manual of the Common Invertebrate Animals*, Blakiston; Ward and Whipple, *Freshwater Biology*, Wiley.

Two lectures and four hours laboratory a week. First Term. Mr. Clemens. 2 units.

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory: 1.30-5.30, Tuesday.

4. *Introduction to Entomology*.—Morphology, classification, life histories, and interrelation of insects; determination of common forms. A collection of insects representative of all common orders is required.

This course is prerequisite to other courses in Entomology.

Text-book: Folsom and Wardle, *Entomology With Special Reference to Its Ecological Aspects*, 4th edition, Blakiston; or Wardle, *General Entomology*, Blakiston.

References: Comstock, *An Introduction to Entomology*, 9th edition, Comstock; Essig, *Insects of Western North America*, Macmillan; Imms, *A General Text-book of Entomology*, 4th edition, Dutton.

Two lectures and four hours laboratory a week. First Term. Mr. Spencer. 2 units.

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: 1.30-5.30, Tuesday.

5. *Histology*.—Normal histology of representative human tissues with references to and illustrations from domestic and common wild animals. Methods in histology, fixing, embedding, sectioning, and staining with standard stains; the golgi method. Each student will prepare a series of about 50 slides during the term.

Text-books: Pre-medical students are advised to purchase the text-book adopted by the medical school they expect to attend; with

other students the selection of a text-book is optional. The following are recommended: Maximow and Bloom, *Text-book of Histology*, 2nd edition, Saunders; Elwyn and Strong, *Bailey's Text-book of Histology*, 8th edition, latest reprint, Wood; Bremer, *A Text-book of Histology*, Blakiston; Schäfer, *Essentials of Histology*, Lea and Febiger; Jordan, *A Text-book of Histology*, Appleton-Century.

Ten hours a week. Second Term. Mr. Spencer. 3 units.

Lectures: 1.30-2.30, Monday; 10.30-11.30, Friday.

Laboratory: 2.30-5.30, Monday; 1.30-3.30, Wednesday; and three hours to be arranged.

6. *Vertebrate Embryology*.—A general survey of the principles of embryological development of vertebrates as exemplified by the amphibians, birds, and mammals. The preparation and study of chick or pig embryos.

Text-book: Kellicott, *Outlines of Chordate Development*, Holt.

Laboratory Manual: Adamstone and Shumway, *A Laboratory Manual of Vertebrate Embryology*, Wiley.

Two lectures and eight hours laboratory a week. First Term. Mr. Cowan. 3 units.

Lectures: 1.30-2.30, Monday; 10.30-11.30, Friday.

Laboratory: 2.30-5.30, Monday; 1.30-3.30, Wednesday; and three hours to be arranged.

7. *Economic Entomology*.—A study of the relation of insects to man, his crops, and domestic animals; bionomics and control of economic forms; natural control.

Text-books: Wardle and Buckle, *The Principles of Insect Control*, Manchester University Press; Metcalf and Flint, *Destructive and Useful Insects*, 2nd edition, McGraw-Hill.

Reference: Wardle, *The Problems of Applied Entomology*, Manchester University Press.

Two lectures and four hours laboratory a week. Second Term. Mr. Spencer. 2 units.

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: 1.30-5.30, Tuesday.

8. *Private Reading and Seminar*.—A course on the history, principles, and theories of biology.

References: Locy, *Biology and Its Makers*, Holt; Nordenskiöld, *The History of Biology*, Knopf; Darwin, *Origin of Species*; etc.

Assigned reading and one hour of seminar with preparation of papers.

Time to be arranged. Mr. Clemens. 2 units.

9. *Practical Entomology*.—Habitat studies of local representatives of all insect orders; collecting, preserving, mounting, dissecting, and sectioning equipment and technique; clearing methods;

meteorological instruments and records; rearing methods and equipment; the keeping and writing up of records; literature; the elements of insect photography. Students will rear certain insects under natural and controlled conditions, keeping full records.

References: Peterson, *Manual of Entomological Equipment and Methods*, Parts I and II, Edwards; Kingsbury and Johannsen, *Histological Technique*, Wiley; *The Meteorological Observer's Handbook*, 1939 edition, H.M. Stationery Office; *Culture Methods for Invertebrate Animals*, Comstock; Shelford, *Laboratory and Field Ecology*, Williams and Wilkins.

Six hours a week by appointment. First Term. Mr. Spencer.

2 units.

10. *Forest Entomology*.—Insects in their relation to forests, timber, and the health of camp personnel, especially in British Columbia.

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

References: Doane, Van Dyke, Chamberlain and Burke, *Forest Insects*, McGraw-Hill; Graham, *Principles of Forest Entomology*, 2nd edition, McGraw-Hill.

One lecture and two hours laboratory a week by arrangement. First Term. Mr. Spencer.

1 unit.

11. *Biology of the Vertebrates*.—The mammals, birds, reptiles, amphibians, and fishes, chiefly of British Columbia; identification of species, observational methods in study of behaviour and habitat relations; systematics, distribution, and speciation; methods of preservation for museum study. Field work will be emphasized.

Text-books: Allen, *Birds and Their Attributes*, Marshall Jones; Hamilton, *American Mammals*, McGraw-Hill.

One lecture and four hours laboratory a week throughout the year. Mr. Cowan.

3 units.

Lectures: 8.30-9.30, Friday.

Laboratory: 1.30-5.30, Friday.

Students intending to take this course should see Mr. Cowan in the spring prior to the intended registration.

12. *Classification and Bionomics of Fishes*.—A course dealing with (a) the classification, identification, life histories, and ecology of fishes, with particular reference to the species of British Columbian waters; (b) problems of the commercial and sport fisheries; (c) methods of investigation.

References: Jordan and Evermann, *Fishes of North and Middle America*, 4 vols., U.S. Nat. Museum; Jordan, *Fishes*, Holt; Norman, *A History of Fishes*, Benn.

Two lectures and two laboratory periods a week, times to be arranged. Second Term. Mr. Clemens. 2 units.

Students majoring in Zoology may take the courses Biology 2 and 3 in fulfilment of credit requirements upon the approval of the Head of the Department of Zoology. Students are referred to pages 80 and 82 concerning Pass and Honours courses in the Third and Fourth Years.

COURSES FOR GRADUATE STUDENTS

Advanced courses correlated with the work for the major thesis may be arranged, and the following special courses are offered.

20. *Biological Methods and Procedures*.—A course to acquaint the student with the methods of dealing with research material, use of literature, rules of nomenclature, designation of types, and preparation of manuscripts and illustrative material.

One hour throughout the year. Mr. Clemens, Mr. Spencer, and Mr. Cowan. 1 unit.

Required of all graduate students.

21. *Limnology and Oceanography*.—A course dealing with the physical and chemical conditions in streams, lakes, and seas; methods of investigation; life histories and ecology of aquatic organisms.

References: Welch, *Limnology*, McGraw-Hill; Needham, *Life of Inland Waters*, Comstock; Harvey, *Biological Chemistry and Physics of Sea Water*, Macmillan; Russell and Yonge, *The Seas*, Warne.

Two lectures and one laboratory period a week throughout the year; times to be arranged. Mr. Clemens. 3 units.

22. *Advanced Entomology*.—A course leading to a better understanding of insect structure and functions. Insect morphology and wing venation; internal anatomy and histology; taxonomy; the physiology of insects.

References: Imms, *Recent Advances in Entomology*, latest edition, Blakiston; Snodgrass, *Principles of Insect Morphology*, McGraw-Hill; MacGillivray, *External Insect Anatomy*, Scarab; Comstock, *The Wings of Insects*, Comstock; Ferris, *The Principles of Systematic Entomology*, Stanford; Wigglesworth, *The Principles of Insect Physiology*, Dutton; Uvarov, *Insect Nutrition and Metabolism*, Trans. Ent. Soc. of London.

Lectures and laboratory, four hours a week, both terms, by appointment. Mr. Spencer. 3 units.

23. *Advanced Vertebrate Zoology*.—Lectures and seminar on advanced problems in distribution, morphology, variation, and behaviour of birds and mammals.

Prerequisite: Zoology 11.

Hours to be arranged. First Term. Mr. Cowan. 2 units.

1941-42

THE
FACULTY
OF
APPLIED SCIENCE

(ENGINEERING: NURSING AND HEALTH)

1941-42

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 two 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 34-36.

As for Arts, complete University Entrance 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 210.

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 201.)

Master of Applied Science (M.A.Sc.). (See page 219.)

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 193. 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 195) 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 that 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. See regulations 4 and 5, page 221.

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 210; 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 291. 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, 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.....	246	2	.....	.....	.....
{ Solid Geometry.....	246	.....	.....	2	.....
✓ Math. 3 Algebra.....	246	2	.....	2	.....
✓ Math. 4 Calculus.....	247	2	.....	2	.....
✓ M.E. 1 Drawing 1.....	247	.....	3	.....	3
✓ Physics 4a Mechanics.....	259	3	3	.....	.....
✓ Physics 4b Heat.....	259	.....	.....	3	3
*Chem. 2a Qual. Analysis.....	225	1	3	1	3
✓ C.E. 2 Surveying.....	228	Field	Work	.....	.....
✓ C.E. 4 Graphics.....	229	.....	2	.....	2
✓ C.E. 30 Engineering Problems.....	235	.....	4	.....	4
✓ C.E. 32 General Engineering.....	236	1	.....	1	.....
✓ English 3 Composition.....	236	2	.....	2	.....
†Bot. 1b General Forest Botany.....	223	2	2	2	2

NOTE. The sum of \$3.00 as caution money must be deposited before Field Work in C.E. 2.

*Not required for Forestry students.

†For Forestry students only.

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 per week.	Lectures per week.	Laboratory Hours per Week.
✓ Essay.....	195	.....	.....	.....	.....
✓ Math. 6 Calculus.....	247	3	.....	3	.....
✓ Math. 7 Geometry.....	247	2	.....	2	.....
✓ *Chem. 2b Quan. Analysis.....	226	1	3	1	3
✓ Physics 5 Electricity.....	260	2	3	2	3
✓ C.E. 1 Descriptive Geometry.....	228	.....	3	.....	3
✓ C.E. 5 Mapping.....	229	.....	3	.....	3
✓ C.E. 6 Surveying.....	229	2	.....	2	.....
†C.E. 7 Surveying.....	229	Field	Work	.....	.....
✓ C.E. 31 Mechanics and Engineering Problems.....	235	2	3	2	3
✓ Geology 1 General.....	241	2	2	2	2
‡M.E. 2 Mechanical Drawing.....	248	Summer Term			
‡M.E. 30 Machine Shop Practice.....	251				
✓ English 4 Technical Writing.....	236	1	.....	1	.....
§F.E. 1(c) General Forestry.....	237	3	.....	3	.....

NOTE:—The sum of \$3.00 caution money must be deposited before Survey School opens.

*Not required for Forestry students.

†Students entering Civil, Forest, Geological, Metallurgical, and Mining Engineering are required to take Civil Engineering 7 (see page 229) 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 248 and 251) immediately after the spring examinations.

§For Forestry students only.

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 in to 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.....	195	.....	.....	.....	.....
Math. 8 Applied Calculus and Differential Equations.....	247	3	.....	3	.....
Geol. 2(a) Mineralogy.....	242	2	2	.....	.....
Chem. 3 Organic.....	226	2	3	2	3
Chem. 4 Theoretical.....	226	2	3	2	3
Chem. 5 Adv. Analysis.....	226	1	6	1	6
Chemistry 6 "Introduction to Chemi- cal Engineering".....	227	2	.....	2	.....
Physics 10 Light.....	260	1	.....	1	.....
C.E. 10 Strength of Materials.....	230	3	3	2	3
Summer Reading.....	228	.....	.....	.....	.....

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.....	195				
E.E. 1 General.....	251	2	2	2	2
Chem. 7 Physical.....	227	2	3	2	3
Chem. 8 Electro.....	227	2	3	2	3
Chem. 9 Adv. Organic.....	227	2	3	2	3
Chem. 16(a) Chemical Engineering.....	228	3		3	
Chem. 16(b) Chemical Engineering Laboratory and Chemical En- gineering Problems.....	228		6		6
Thesis. Options—research or designing of chemical engineering equipment.....			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, and 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.....	195	.....	.....	.....	.....
C.E. 8 Foundations.....	230	2	3	2	.....
C.E. 9 Elementary Design.....	230	2	3	2	3
C.E. 10(a) & (b) Strength of Materials.....	230	3	3	2	3
C.E. 11 Railways.....	231	2	.....	2	.....
C.E. 12(a) & (b) Hydraulics.....	231	2	3	2	3
C.E. 13 Mapping.....	231	.....	3	.....	.....
C.E. 14 Surveying.....	232	2	.....	2	.....
C.E. 15 Drawing.....	232	.....	.....	.....	3
C.E. 16 Surveying.....	232	.....	Field	Work	.....
C.E. 28 Seminar.....	235	1	.....	1	.....
*M.E. 6 Applied Thermodynamics.....	249	2	3	2	3
*E.E. 1 Electrical Engineering.....	251	2	2	2	2
†F.E. 16 Forest Economics.....	240	3	.....	3	.....

*Forest Eng. students must take either M.E. 6 or E.E. 1.

†For Forest Eng. students only.

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.....	195	.....	.....	.....	.....
C.E. 17 Structural Design.....	232	2	3	2	6
C.E. 18(a) Engineering Economics.....	232	2	.....	.....	.....
C.E. 18(b) Engineering Economics.....	232	.....	.....	2	.....
C.E. 19 Law—Contracts.....	233	1	.....	1	.....
C.E. 22 Municipal Engineering.....	233	2	2	2	2
C.E. 23 Highway Engineering.....	233	2	.....	2	.....
C.E. 24 Reinforced Concrete Design.....	234	2	3	.....	3
C.E. 25 Theory of Structures.....	234	2	6	.....	.....
C.E. 26 Trips.....	234	Required Saturday A.M.			
C.E. 27 Thesis.....	234	.....	3	.....	6
C.E. 28 Seminar.....	235	1	.....	1	.....
C.E. 29 Water Power Development.....	235	.....	.....	2	2

For courses for graduate students, see page 236.

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.....	195	.....	.....	.....	.....
E.E. 2 Principles of D.C. Machines.....	252	2	3	2	3
E.E. 3 Principles of Alternating Currents.....	252	2		2	
E.E. 5 Electric and Magnetic Measurements and Instruments.....	252	2	.....	2	.....
Math. 8 Applied Calculus and Differential Equations.....	247	3	.....	3	.....
M.E. 4 Dynamics of Machines.....	248	2	.....	2	.....
M.E. 7 Applied Thermodynamics.....	249	3	3	3	3
C.E. 10 Strength of Materials.....	230	3	3	2	3
C.E. 12(a) and (b) Hydraulics.....	231	2	3	2	3
*M.E. 31(a) Machine Shop Practice.....	251	.....	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.....	195	.....	.....	.....	.....
E.E. 7 Electrical Machine Design.....	253	1	3	1	3
E.E. 8 Principles of Illuminating Engineering.....	253	2	.....	.....	.....
E.E. 9 Electric Power Transmission and Distribution.....	253	2	.....	2	.....
E.E. 10 Electrical Problems Course.....	253	.....	2	.....	2
E.E. 11 Electrical Communication.....	253	2	4	2	4
E.E. 12 Principles of A.C. Machines.....	254	3	4	3	4
E.E. 13 Transient Phenomena.....	254	1	.....	1	.....
M.E. 8 Steam Turbines.....	249	.....	.....	2	.....
M.E. 14 Mechanical Design.....	250	2	.....	.....	.....
M.E. 15 Prime Movers.....	250	2	.....	2	.....
*C.E. 18(a) Engineering Economics.....	232	2	.....	.....	.....
C.E. 18(b) Engineering Economics.....	232	.....	.....	2	.....

*Optional. For courses for graduate students, see page 254.

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 292, 293), 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, for whom 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 240. 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, Biology and 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 194), 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 195), except that Forestry 1 (General Forestry) is taken instead of Chemistry 2 (b).

FOURTH YEAR

The same as Fourth Year Civil Engineering (see page 199), 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.....	195	.....	.....	.....	.....
F.E. 2(a) Log Scaling.....	237	1	2	.....	.....
*F.E. 2 (c) Forest Mensuration.....	238	3	2	.....	.....
F.E. 6 Forest Management.....	238	4	3	.....	.....
F.E. 7 History.....	238	2	.....	.....	.....
†F.E. 11 Milling, Products & Marketing.....	239	4	4	.....	.....
§Bot. 7(a) Ecology.....	224	2	2	.....	.....
Zool. 10 Forest Entomology.....	263	1	2	.....	.....
F.E. 14 Seminar.....	239	1	.....	1	.....
F.E. 15 Thesis.....	239	.....	3	.....	3
F.E. 2(b) Cruising and Stumpage Appraisal.....	237	.....	.....	1	2
F.E. 5 Wood Technology.....	238	.....	.....	3	3
*†F.E. 8 Silviculture and Protection.....	238	.....	.....	4	4
*†F.E. 10 Logging Engineering.....	239	.....	.....	4	4
F.E. 13 Lumber Grading.....	239	.....	.....	1	2
Bot. 6(b) Forest Pathology.....	224	.....	.....	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.

§Students who have completed the Honours course in Biology (Forestry option) for the B.A. degree will take Botany 7(b) instead of Botany 7(a). (See page 225.)

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 190.

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.....	195	.....	.....	.....	.....
Geol. 2 Mineralogy.....	242	2	2	2	2
Geol. 4 Structural.....	243	3	.....	3	.....
Geol. 5 Regional and History of the Science.....	243	1	.....	1	.....
*Geol. 10 Field Geology.....	244	.....	.....	.....	.....
Min. 1 Metal Mining.....	255	3	.....	3	.....
Met. 1(a) Physical Metallurgy.....	256	2	.....	.....	.....
Met. 1(b) Reduction Metallurgy.....	256	.....	.....	2	.....
Met. 5 Fire Assaying.....	257	1	7	.....	.....
Met. 6 Wet Assaying.....	257	.....	.....	.....	3
Ore Dressing 1 General.....	258	2	.....	2	.....
Ore Dressing 2 Lab.....	258	.....	.....	.....	4
†Biology 1.....	222	2	2	2	2
C.E. 13 Mapping.....	231	.....	.....	.....	3

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

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

FIFTH YEAR

Subject	For Details See page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Geol. 6 Palaeontology.....	243	2	2	2	2
Geol. 7 Petrography.....	244	2	4	2	4
Geol. 8 Economic Geology.....	244	4	.....	4	.....
Geol. 9 Mineralography.....	244	.....	2 or 4	.....	2 or 4
Geol. 11 Advanced Regional.....	245	3	.....	3	.....
Chem. 4(b) Theoretical Chemistry.....	226	2	.....	2	.....
C.E. 18 Engr. Economics (a).....	232	2	.....	.....	.....
C.E. 18 Engr. Economics (b).....	232	.....	.....	2	.....
Min. 2 Coal and Placer.....	255	2	.....	2	.....
Min. 3 Metal Mining.....	255	2	.....	2	.....
Min. 5 Surveying.....	255	1	.....	.....	.....
Met. 2 Reduction Metallurgy.....	256	2	.....	2	.....
Thesis.....	.....	.....	4	.....	5

MASTER OF APPLIED SCIENCE OPTIONS

Economic Geology.—Required subjects: Geology 26, and three units from Geology 20, 24, and 25.

Electives: Six units selected from the departments of Chemistry, Physics, Metallurgy, and Ore-Dressing.

Mineralography.—Required subjects: Geology 24, and three units from the following: Geology 23, 25, 26.

Electives: Six units in the departments of Metallurgy, Ore-Dressing, Physics, and Chemistry.

Mineralogy.—Required subjects: Geology 23, and three units from Geology 20, 24, 25, 26.

Electives: Six units in the departments of Physics, Chemistry, Metallurgy, or Ore-Dressing.

Palaeontology.—Required subjects: Geology 21, and three units from Geology 20, Biology 3, Zoology 1, 2, and 3.

Electives: Six units in Geology (not already taken), Biology, Botany, Zoology, or Bacteriology.

Petrology.—Required subjects: Geology 25, and three units selected from Geology 23, 24, and 26.

Electives: Six units in Physics, Chemistry, or Metallurgy.

Stratigraphy.—Required subjects: Geology 20, and three units selected from Geology 21, 25, and Agronomy 15.

Electives: Six units in Geology (not already taken), Biology, Zoology, Agronomy 15, Bacteriology, Physics, or Chemistry.

A thesis of the minimum value of three units is required in each option.

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.....	230	3	3	2	3
C.E. 12 Hydraulics.....	231	2	3	2	3
M.E. 3 Kinematics of Machines.....	248	3	2	.....	.....
M.E. 4 Dynamics of Machines.....	248	2	.....	2	.....
M.E. 5 Machine Design.....	248	.....	.....	3	2
M.E. 7 Applied Thermodynamics.....	249	3	3	3	3
Met. 1(a) Physical Metallurgy.....	256	2	.....	.....	.....
Met. 1(c) Metallography.....	256	.....	.....	.....	3
E.E. 2 and 3 Principles of DC Machines and Alternating Currents	252	4	3	4	3
Math 8 Applied Calculus and Differential Equations.....	247	3	.....	3	.....
M.E. 31(a) Machine Shop Practice.....	251	.....	2	.....	2
Essay.....	195	.....	.....	.....	.....

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.....	249	.....	.....	2	.....
M.E. 9 Internal Combustion Eng.....	249	1	4	.....	4
M.E. 10 Refrigeration.....	249	1	.....	.....	.....
*M.E. 11 Heating, Ventilating and Air Conditioning.....	249	2	.....	.....	.....
M.E. 12 Power Plant Design.....	250	1	3	1	3
M.E. 15 Prime Movers.....	250	2	.....	2	.....
M.E. 16 Machine Design.....	250	2	4	2	4
M.E. 17 Applied Mechanics.....	250	1	.....	1	.....
*M.E. 18 Aeronautics.....	251	.....	.....	2	.....
M.E. 19 Problems in Mech. and Elec. Eng.....	251	.....	2	.....	2
E.E. 14 Alternating Current Machinery	254	2	4	2	4
C.E. 18 (a) and (b) Engineering Economics.....	232	2	.....	2	.....
Essay.....	195	.....	.....	.....	.....
M.E. 31(b) Machine Shop Practice.....	251	.....	2	.....	2

*Alternative subjects.

VII.-VIII. Metallurgical and Mining Engineering

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, metallurgical analysis, and metallography.

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.

Courses and laboratory facilities are available for Masters' courses in ore dressing and metallurgy.

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.

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.....	195	.....	.....	.....	.....
C.E. 10 Str. of Materials.....	230	3	3	2	3
C.E. 12 Hydraulics.....	231	2	3	2	3
M.E. 6 Applied Thermodynamics.....	249	2	3	2	3
Geol. 2 Mineralogy.....	242	2	2	2	2
E.E. 1 General.....	251	2	2	2	2
Min. 1 Metal Mining.....	255	3	.....	3	.....
Met. 1(a) Physical Metallurgy.....	256	2	.....	.....	.....
Met. 1(b) Reduction Metallurgy.....	256	.....	.....	2	.....
Met. 1(c) Metallography.....	256	.....	.....	.....	3
Met. 5 Fire Assaying.....	257	1	7	.....	.....
Met. 6 Wet Assaying.....	257	.....	.....	.....	3
Ore Dressing 1 General.....	258	2	.....	2	.....
Ore Dressing 2 Lab.....	258	.....	.....	.....	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.....	195	.....	.....	.....	.....
Geol. 9 Mineralography.....	244	.....	2	.....	2
C.E. 18 Engr. Economics.....	232	2	.....	2	.....
Chem. 4(b) Theoretical.....	226	2	.....	2	.....
Chem. 8 Electrochemistry Laboratory.....	227	.....	3	.....	3
Ore Dressing 3 Laboratory.....	258	.....	6	.....	6
Min. 3 Metal Mining.....	255	2	.....	2	.....
Met. 2 Reduction Metallurgy.....	256	2	.....	2	.....
Met. 3(a) Physical Metallurgy.....	257	2	.....	.....	.....
Met. 3(b) Calculations.....	257	.....	.....	2	.....
Met. 4 Laboratory.....	257	.....	9	.....	9
Met. 7 Strategic Minerals Production.....	257	1	.....	1	.....
Met. 8 Process Laboratory.....	258	.....	3	.....	3

VIII. Mining 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.....	195	.....	.....	.....	.....
C.E. 10 Str. of Materials.....	230	3	3	2	3
C.E. 12 Hydraulics.....	231	2	3	2	3
C.E. 18 Mapping.....	231	.....	.....	.....	3
M.E. 6 Applied Thermodynamics.....	249	2	3	2	3
Geol. 2 Mineralogy.....	242	2	2	2	2
E.E. 1 General.....	251	2	2	2	2
Min. 1 Metal Mining.....	255	3	.....	3	.....
Met. 1(a) Physical Metallurgy.....	256	2	.....	.....	.....
Met. 1(b) Reduction Metallurgy.....	256	.....	.....	2	.....
Met. 5 Fire Assaying.....	257	1	7	.....	.....
Met. 6 Wet Assaying.....	257	.....	.....	.....	3
Ore Dressing 1.....	258	2	.....	2	.....
Ore Dressing 2 Lab.....	258	.....	.....	.....	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.....	195	.....	.....	.....	.....
Geol. 3 Petrology.....	243	2	.....	2	.....
Geol. 4 Structural.....	243	3	.....	3	.....
Geol. 8 Economics.....	244	4	.....	4	.....
C.E. 9 Element. Design.....	230	2	3	2	3
C.E. 18 Engr. Economics.....	232	2	.....	2	.....
Met. 2 Reduction Metallurgy.....	256	2	.....	2	.....
Ore Dressing 3 Laboratory.....	258	.....	6	.....	6
Min. 2 Coal and Placer.....	255	2	.....	2	.....
Min. 3 Metal Mining.....	255	2	.....	2	.....
Min. 4 Machinery.....	255	2	.....	2	.....
Min. 5 Surveying.....	255	1	.....	.....	.....
Min. 7 Methods.....	256	.....	.....	1	.....

MASTER OF APPLIED SCIENCE OPTIONS IN MINING AND METALLURGY

1. *Ore Dressing.*—*Required course:* Ore Dressing 101, and Thesis.
Electives: Suitable courses to be selected, as approved by the Department.
2. *Metallurgy.*—*Required course:* Metallurgy 102, and Thesis.
Electives: Suitable courses to be selected in relation to the specific option undertaken, as approved by the Department.

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 Courses*, page 291.)

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 215-217.)

Nursing C—Teaching and Supervision in Schools of Nursing. (Details pages 216-217.)

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 190.)

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 210 and 211, 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).....	143	2	.....	2	.....
English 1 (b).....	144	2	.....	2	.....
Choice of					
Latin 1.....	126				
or French 1.....	165	3	.....	3	.....
or German (Beginners').....	168				
Mathematics 1.....	160	4	.....	4	.....
Chemistry 1.....	225	3	3	3	3
Biology 1.....	222	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 194.)

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.....	144	3	.....	3	.....
Zoology 1.....	263	2	2	2	2
Physics A or Physics 1.....	259	3	2	3	2
Psychology 1.....	173	4	.....	4	.....
Bacteriology in relation to Health and Disease.....	261	1	4	1	4
Nursing A (4) Elementary Biochemistry.....	260	.....	.....	1	1
Nursing A (1) History of Nursing.....	260	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 authori-

ties 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 Uni-

versity 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 196.)

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 220.)

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.
Nursing 1 Preventive Medicine.....	261	45	
Nursing 9 Sanitation.....	261	9	
Nursing 12 Vital Statistics.....	261	18	
Nursing 5 Mental Hygiene.....	261	18	
Nursing 7(a) Infant Welfare.....	261	9	
Nursing 7(b) Child Hygiene.....	261	12	
Nursing 11 Public Health Organization	261	4	
Nursing 13(a) Principles of Public Health Nursing.....	261	36	
Nursing 13(b) Practice of Public Health Nursing.....	261	18	
Nursing 16 Methods in Health Teaching.....	262	36	
Nursing 17 Contemporary Nursing Problems.....	262	18	
Nursing 31 Principles and Methods of Teaching.....	262	18	
Nursing 21 Social Case Work.....	262	20	
Nursing 27 Sociology.....	262	18	
Nursing 35 Seminar.....	262	18	
Field Work.....	.....	8-12 weeks	To run alter- nately 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.
Nursing 1 Preventive Medicine.....	261	45	
Nursing 9 Mental Hygiene.....	261	18	
Nursing 17 Contemporary Nursing Problems.....	262	18	
Nursing 18(a) Teaching in Schools of Nursing.....	262	36	
Nursing 18(b) Practice Teaching in Nursing.....	262	20	
Nursing 19 Principles of Supervision in Schools of Nursing.....	262	36	
Nursing 31 Principles and Methods of Teaching.....	262	18	
Nursing 21 Social Case Work.....	262	20	
Nursing 27 Sociology.....	262	18	
Electives from Nursing B, from Education, or from related Science Courses—to make up three units			
Nursing 35 Seminar.....	262	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

*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.

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 Winona D. Armitage, Manager.

The Family Welfare Bureau of Greater Vancouver.—Miss Mary McPhedran, Director.

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

The Provincial Department of Health and Health Units at Abbotsford, Chilliwack, Duncan, Nanaimo, Saanich, and other centres.—Dr. G. F. Amyot, Provincial Health Officer; Miss Heather Kilpatrick, Director of Public Health Nursing.

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 educational requirement of University Entrance.

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. Candidates accepted for admission to the course are urged to obtain instruction in driving a motor car, and to secure their driver's licence before the opening of the session. The ability to drive a car is often an important factor in the assignments made to students when on field work; and later, the ability to drive well is often a deciding factor in securing an appointment.

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).

At the present time it is important that all nurses should be qualified to participate in plans for civilian protection or defence. All candidates for Nursing B and Nursing C are therefore urged to take, if possible before the opening of the session, the courses of instruction in first aid and in air raid precautions which are given by the St. John Ambulance Association.

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. Prerequisites: Candidates must have at least Second Class average standing in the fourth and fifth year undergraduate subjects of the course in which they wish to specialize. In case this standing has not been obtained, or in case certain subjects have been omitted, the deficiency must be made up by repeating or taking the course or courses concerned.

4. 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.

5. One subject of specialization shall be selected, to which the required thesis must be definitely related. (Two typewritten copies of each thesis shall be submitted. See special circular entitled *Instructions for the Preparation of Masters' Theses.*)

The latest date for receiving Masters' theses in the Second 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 a Final Year. About three quarters of the time should be devoted to the subject of specialization including the thesis, and one quarter to other subjects. Special

encouragement will be given to the solution of problems related to British Columbia industries.

The choice of courses taken and their relation to the subject of specialization, the amount of work in each, or of tutorial work, must be 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.

6. Examinations shall be written, or oral, or both, and standing equivalent to at least 75 per cent. in the courses of specialization and 65 per cent. in other subjects shall be required.

7. 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 193). 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; Mechanical Engineering 1, 2, 6, 7 (Lab.), 8, 9, and 10 (Lab.), 30; Geology 1 (b) and 1 (d).

9. Any student repeating his year will not be admitted with any supplementals outstanding.

*Special permission of the Faculty is granted only under exceptional circumstances, such as illness, or as outlined on page 193.

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.

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 Biology and Botany

Professor: A. H. Hutchinson.
Associate Professor: Frank Dickson.
Associate Professor: John Davidson.
Assistant Professor: John Allardyce.
Instructor: E. Miriam R. Ashton.

Biology

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

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

The course is prerequisite to all other courses in Biology.

Two lectures and one period of two hours laboratory a 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 a 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*, 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.

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

Three lectures a 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 a 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; plants 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.

Two lectures and two hours laboratory a 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 and 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 a 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 a 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.

References: 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 a week during one term. Field trips and laboratory work during the session amounting to forty hours, one period a week.

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

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory: 3.30-5.30, Monday. 2 units.

7. (b) *Advanced Forest Ecology*.—A seminar and problem course.

Prerequisite: Botany 7 (a).

Time to be arranged. Five hours a week. First term. 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.

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

Prerequisite: Chemistry 1.

One lecture and one period of three hours laboratory a week.

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

Text-book: Willard and Furman, *Quantitative Analysis*, Van Nostrands; or Pierce and Haenisch, *Quantitative Analysis*, Wiley.

Prerequisite: Chemistry 1.

One lecture and one period of three hours laboratory a 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 a 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; Sherrill, *Laboratory Experiments on Physical-Chemical Principles*, Macmillan.

Prerequisites: Chemistry 2 (except for students majoring in Physics). Honours students majoring in Chemistry should take Mathematics 10 concurrently.

Two lectures and three hours laboratory a 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 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 two periods of three hours laboratory a 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 a 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 Physico-Chemical Principles*, Macmillan; Findlay, *Practical Physical Chemistry*, Longmans.

Prerequisites: Chemistry 2, 3 and 4.

Two lectures and three hours laboratory a 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; Thompson, *Theoretical and Applied Electrochemistry*, Macmillan.

Prerequisite: Chemistry 4.

Two lectures and three hours laboratory a 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 Chemistry 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 a week.

17. *Chemical Thermodynamics*.—As in Arts. (See page 122.)
(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 123.)
(Given in 1942-43.)

Summer reading. *Industrial Chemistry*.—Read's *Industrial Chemistry*, Wiley.

Department of Civil Engineering

Professor: John Norison Finlayson.
Associate Professor: A. H. Finlay.
Associate Professor: A. Lighthall.
Associate Professor: J. F. Muir.
Assistant Professor: E. S. Pretious.
Assistant Professor: Archie Peebles.
Assistant Professor: A. Hrennikoff.
Honorary Lecturer: J. B. Alexander.

1. *Descriptive Geometry*.—Geometrical drawing, orthographic, isometric and axometric projections.

Text-book: Armstrong, *Descriptive Geometry*, 2nd edition, Wiley.
One three-hour period a week. Mr. Pretious.

2. *Field Work 1*.—Elementary surveying; practical problems involving the use of the chain, stadia, 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 a day for twenty days, or equivalent.

Mr. Pretious.

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 a week. Mr. Peebles.

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 three-hour period a week. 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-book: Davis, *Elementary Plane Surveying*, McGraw-Hill.

References: Allen, *Curves and Earthwork*, McGraw-Hill; Breed and Hosmer, *Elementary Surveying*, Vol. I., Wiley.

Two lectures a week. Mr. Lighthall.

7. *Field Work 2*.—(a) Route 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. Lighthall, Mr. Finlay, Mr. Muir, Mr. Peebles.

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 a week. First Term. Mr. Hrennikoff.

(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 a week. Second Term. Mr. Hrennikoff.

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; *Steel Construction*, American Institute of Steel Construction.

Prerequisite: First Term of Civil 10.

Two lectures and one three-hour period a week. 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;

Selected Standards for Students of Engineering, American Society for Testing Materials; *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*, Longmans; *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 a week. First Term.

Two lectures and one three-hour period a week. Second Term.

Mr. Lighthall, Mr. Alexander, Mr. Hrennikoff.

NOTE. Part of the laboratory testing is performed in the Forest Products Laboratory.

11. *Transportation 1. Railways*.—The development of railway transportation; co-ordination of transportation systems; railway location, grades, curvature, and distance, and their effects upon operating costs; economics, traffic and revenue; maintenance of way and structures.

References: Williams, *Design of Railway Location*, 2nd edition, Wiley; Raymond, *Elements of Railroad Engineering*, 5th edition, Wiley; Tratman, *Railway Track and Track Work*, McGraw-Hill.

Prerequisite: Civil 6 and 7.

Two lectures a week. Mr. Peebles.

12. *Hydraulic Engineering 1*.—(a) Fundamental principles and their application. Problems on gauges, pressure on surfaces; translation and rotation of liquids; Bernouilli's theorem, flow through orifices, short tubes, nozzles, weirs, pipes, and open channels, and the dynamic action of jets.

(b) Laboratory period includes experimental work on gauges, pipes, weirs, orifices, and short tubes, and logarithmic plotting.

Text-book: Russell, *Hydraulics*, 4th edition, Holt.

Reference: Freeman, *Hydraulics Laboratory Practice*, A.S.M.E.

Prerequisite: Physics 6.

Two lectures and one three-hour period per week.

Mr. Pretious.

13. *Mapping 2*.—Mapping from notes obtained in Civil 7; mining, forestry or geological maps.

Prerequisite: Civil 7.

One three-hour period a week. 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: Bouchard, *Surveying*, International Text Book Co.

References: *Manual of Surveys of Dominion Lands; Instructions for B. C. Land Surveyors*; Davis Foote and Raynor, *Surveying*, McGraw-Hill.

Prerequisite: Civil 6.

Two lectures a week. Mr. Lighthall.

15. *Drawing*.—Map projections, perspective drawings, photographic maps.

One three-hour period a week. Second Term. 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; *Steel Construction*, American Institute of Steel Construction.

References: Kuntz, *Design of Steel Bridges*, McGraw-Hill.

Prerequisites: Civil 8, 9 and 10.

Two lectures and one three-hour period a week. First Term.

Two lectures and two three-hour periods a week. Second Term. Mr. Hrennikoff.

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 a week. First Term. Mr. Muir.

(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 a week. Second Term. Mr. Muir.

19. *Engineering Law*.—The engineer's status; fees, salary; the engineer 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.

References: Anger, *Digest of Canadian Mercantile Law of Canada*; Laidlaw and Young, *Engineering Law*, Univ. of Toronto.

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.

Reference: 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.—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 a 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*, 2nd edition, International Textbook Co.

Reference: Hogentogler, *Engineering Properties of Soil*, McGraw-Hill.

Two lectures a 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., Wiley; *Handbook of Reinforced Concrete Building Design*, American Concrete Institute.

Prerequisite: C.E. 10.

Two lectures and one three-hour period a week First Term, and one three-hour period a 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*.

Reference: Johnson, Bryan, and Turneure, *Modern Framed Structures*, Vols. 1-3, Wiley.

Prerequisite: Civil 10.

Two lectures and two three-hour periods a 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; preparation of written outlines 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 a 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, Wiley; Creager and Justin, *Hydro-electric Engineering*, 1st edition, Wiley.

Two lectures and one two-hour period a week. Second Term. Mr. Muir.

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 a week.

Mr. Finlay, Mr. Muir, Mr. Peebles.

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 a 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 a 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 a 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 a 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: J. E. Liersch.
 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. (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 223.)

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*, 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.

Three lectures a week. Third Year.

3 units.

This course is the same as Botany 1 (c). (page 223.)

2. *Mensuration*.—(a) Log scaling and measurement of felled timber products.

References: Chapman and Demeritt, *Elements of Forest Mensuration*, 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 a week. First Term, Fifth Year.

1 unit.

(b) Timber cruising and stumpage appraisal.

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 a week. Second Term, Fifth Year.

1 unit.

(c) Preparation of volume and yield tables; measurement of growth of trees and forests; statistical analysis.

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

Three lectures and one period of two hours laboratory or field work a week. First 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: Brown and Panshin, *Commercial Timbers of the United States*, McGraw-Hill.

References: Record, *Identification of the Timbers of Temperate North America*, Wiley; 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 a week, Second 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 a week. First 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 a week. First Term, Fifth Year. 1 unit.

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

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

References: Westveld, *Applied Silviculture in the United States*, Wiley; Hawley, *Forest Protection*, Wiley; various government publications.

Four lectures and one period of four hours laboratory a week. Second 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.

References: Brown, *Logging Principles and Practices*, Wiley; Bryant, *Logging*, 2nd edition, Wiley; 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 a week. Second Term, Fifth Year. 3 units.

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.

References: Brown, *American Lumber Industry*, Wiley; *The Manufacture of Pulp and Paper*, Vols. III to V, McGraw-Hill; Knight and Wulpi, *Veneers and Plywood*, Ronald Press.

Four lectures a week and one period of four hours laboratory a week. First 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 a week. Second 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 Forestry 8, 10, and 11; preparation of written outlines; training in technical writing and public speaking.

One hour a 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 a 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.

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

Three lectures a 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 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, volcanos, igneous intrusions, metamorphism, mountains, plateaus, and ore-deposits.

Two lectures a week. First Term. Mr. Williams, Mr. Gunning, Mr. Swanson.

(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 a 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 a week. Second Term. Mr. Williams, Mr. Davis, and assistants.

Prerequisite: University Entrance Chemistry or Physics, or Chemistry 1, or Physics A or 1, taken either before or concurrently.

Text-book: Longwell, Knopf, Flint, Schuchert, Dunbar, *Outlines of Geology*, 1937, Wiley.

Students will be required to make passing marks in the lecture and laboratory 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 economies.

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, 4th edition, Wiley.

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

Prerequisites: Geology 1, Chemistry 1 and Physics 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 consist of a more complete survey of crystallography, and of physical and chemical mineralogy, with a critical study of about 70 of the less common minerals, special emphasis being laid on their crystallography, origin, association, alteration and economic significance.

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

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

Prerequisites: Geology 2 (a), Chemistry 1, and Physics 1 must precede or accompany this course.

Two lectures and two hours laboratory a week. Second Term. Mr. Warren.

Students will be required to make passing marks in the lecture and laboratory divisions of both 2 (a) and 2 (b).

Students taking 2 (a) and 2 (b) may be required to pass in both parts.

3. *Petrology*.—An elementary course on the common rocks and the 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 a 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.

Text-book: Nevin, *Structural Geology*, 2nd edition, Wiley.

Prerequisite: Geology 1.

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.

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

Prerequisites: Geology 1 and 2.

One lecture a 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.

References: Grabau and Shimer, *North American Index Fossils*; Zittel-Eastman, *Text-book of Palaeontology*, Macmillan; Berry, *Palaeontology*, McGraw-Hill.

Prerequisite: Geology 1.

Two lectures and two hours laboratory a 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, both 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 a week. Mr. Swanson.

8. *Economic Geology*.—A study of the manner of occurrence, genesis, structure, and distribution of the principal metallic and non-metallic mineral deposits with type illustrations; emphasis is placed upon Canadian deposits.

Text-book: Ries, *Economic Geology*, 7th edition, 1937, Wiley.

Prerequisite: Geology 2. Geology 4, and Geology 3 or 7 must precede or accompany this course.

Four lectures a 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: U. S. Geological Survey Bulletin 914, *Microscopic Determination of the Ore Minerals*.

Prerequisite: Geology 8 must precede or accompany this course.

Two to four hours a week by arrangement. Mr. Warren.

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. The cost to each student may approach \$10.00.

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

Prerequisites: Geology 2 and Geology 4.

A two weeks' 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.

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.

Prerequisite: Geology 5.

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

COURSES FOR GRADUATE STUDENTS

(To be arranged by consultation with the Instructors and Head of Department.)

20. *Sedimentation*.

Text-book: Twenhofel, *Principles of Sedimentation*, McGraw-Hill.

Prerequisites: Geology 1, 2, and 11.

One lecture or seminar and 6 hours of reading or laboratory a week. Mr. Williams.

21. *Problems in Palaeontology*.

Prerequisite: Geology 6.

One seminar and 6 hours laboratory a 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*, 16th edition, revised, Wiley.

Prerequisites: Geology 2, 7, and 8.

One lecture or seminar and four or six hours laboratory work a 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.

Text-book: U. S. Geological Survey Bulletin 914, *Microscopic Determination of the Ore Minerals*.

Prerequisites: Geology 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; Bowen, *Evolution of Igneous Rocks*, Princeton University Press.

Two lectures and two hours laboratory a 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 8, and Geology 7 or Geology 3.

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

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

Two hours seminar a week and two 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.

Instructor: May L. Barclay.

Lecturer: S. A. Jennings.

2. *Trigonometry and Solid Geometry*.—Review of elementary trigonometry, inverse functions, hyperbolic functions, complex numbers, De Moivre's theorem, elimination; a study of the three-faced corner, various polyhedra and solid figures; introduction to vector analysis.

Two lectures a 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 frac-

tions, graphical algebra, elementary theory of equations, convergence of series, determinants.

Two lectures a week.

Text-book: Brink, *Algebra, A College Course*, Appleton-Century.

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*, 1938, Wiley.

Two lectures a week.

6. *Calculus*.—Differential and integral calculus with various applications.

Text-book: Smith, Salkover and Justice, *Calculus*, 1938, Wiley.

Three lectures a week.

7. *Geometry*.—Plane analytic geometry; introduction to solid analytic geometry; graphs, curve-fitting, and elementary statistics in engineering practice; introduction to spherical trigonometry.

Text-book: To be selected.

Two lectures a week.

8. *Applied Calculus and Differential Equations*.—More advanced calculus, including harmonic analysis, interpolation, Fourier series; probability; ordinary differential equations and partial differential equations, met in physics and engineering.

Text-book: Sokolnikoff, *Higher Mathematics for Engineers and Physicists*, McGraw-Hill.

Reference: Reddick and Miller, *Advanced Mathematics for Engineers*, Wiley.

Three hours a week.

10. *Analysis*.—A course dealing with selected topics in analysis, designed for Graduate students in Engineering.

Two hours a week.

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: W. O. Richmond.

Assistant Professor of Mechanical Engineering: H. M. McIlroy.

Instructor in Mechanical Engineering: D. W. Thomson.

Mechanical Engineering

1. *Mechanical Drawing*.—Free hand lettering; geometric figures; orthographic projection; dimensioning; thread conventions; techni-

cal sketching; detail and assembly drawings of machine parts; tracing and blueprinting.

Text-book: French and Svensen, *Mechanical Drawing*, McGraw-Hill.

One three-hour period a week.

Mr. McIlroy, Mr. Archibald, and Mr. Thomson.

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: French and Svensen, *Mechanical Drawing*, McGraw-Hill.

Reference: Schuman, *Technical Drafting*, Harper.

Mr. McIlroy, Mr. Vernon, Mr. Richmond, Mr. Thomson.

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.

Text-book: Steeds, *Mechanism and the Kinematics of Machines*, Longmans.

Three lectures and one two-hour drawing office period a week. First Term. Mr. Vernon and Mr. Thomson.

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.

Two lectures a 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; Marks, *Mechanical Engineers' Handbook*, McGraw-Hill.

Three lectures and one two-hour drawing office period a week. Second Term. Mr. Richmond.

6. *Applied Thermodynamics*.—A practical course for students not specializing in Mechanical and Electrical Engineering. Fuels and combustion; steam boilers; steam engines and turbines; combustion engines; air compression; refrigeration.

Text-book: Allen and Bursley, *Heat Engines*, McGraw-Hill.

Two lectures and one three-hour laboratory period a week.

Mr. McIlroy, Mr. Thomson.

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 a week.

Mr. Richmond, Mr. Vernon, Mr. Thomson.

8. *Steam Turbines*.—A more advanced course in the thermodynamic theory, design, and performance of steam turbines, both marine and stationary.

References: Goudie, *Steam Turbines*, Longmans; Stodola, *Steam and Gas Turbines*, McGraw-Hill; Moyer, *Steam Turbines*, Wiley.

Two lectures a 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.

References: Wimperis, *Internal Combustion Engines*, Constable; Bird, *Oil Engines*.

One lecture a 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.

Text-book: Macintire, *Refrigeration Engineering*, Wiley.

References: Ewing, *Mechanical Production of Cold*, Cambridge; Moyer and Fittz, *Refrigeration*, McGraw-Hill.

One lecture a 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 a week. Mr. Vernon.

11. *Heating, Ventilating and Air Conditioning*.—Calculation of building heat losses; design of the various steam, hot-water, and warm-air heating systems; factors affecting human comfort; measurement of air flow.

Text-book: Severns, *Heating, Ventilating and Air Conditioning Fundamentals*, Wiley.

References: *A.S.H.V.E. Guide*; Harding and Willard, *Mechanical Equipment of Buildings* (Vols. I and II), Wiley; Konzo, *Winter Air Conditioning*, N.W.A.H. & A.C. Assn., Columbus, Ohio.

Two lectures a week. First Term. Mr. Thomson.

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.

References: Gebhardt, *Steam Power Plant Engineering*, Wiley; Gaffert, *Steam Power Stations*, McGraw-Hill.

One hour lecture and one three-hour laboratory period a week. Mr. Mellroy.

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 Engineering students.

Two lectures a week. First Term. Mr. Richmond.

15. *Prime Movers*.—Theory and design of all types of hydro-electric machinery from the mechanical standpoint.

Reference: Gibson, *Hydro-Electric Engineering*, Vol. I, Blackie. Two lectures a 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 a 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.

References: Timoshenko, *Strength of Materials*, Van Nostrand; Timoshenko and Lessels, *Applied Elasticity*, Westinghouse; Low, *Applied Mechanics*, Longmans.

One lecture a 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 a 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 a 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, and 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.

One two-hour period a week.

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.

References: 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 a week and one two-hour period a 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 a week.

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*, Wiley.

References: Morecroft and Hehre, *Electrical Circuits and Machinery*, Vol. II, Wiley; *Junior Laboratory Manual*.

For Fourth Year Electrical and Mechanical students only.

Prerequisite: Physics 5.

Two lectures a week. 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 a week.

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: Golding, *Electrical Measurements and Measuring Instruments*, Pitman.

Reference book: Drysdale and Jolly, *Electrical Measuring Instruments*, E. Benn, Ltd., London.

For Fourth Year Electrical Engineering students only.

Prerequisite: Physics 5.

Two lectures a 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*, Wiley.

Reference: Still, *Elements of Electrical Design*, McGraw-Hill.

One lecture and one three-hour laboratory period a 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 a 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*, Wiley.

Reference books: Sanderson, *Electric System Handbook*, McGraw-Hill; Lovell, *Generating Stations*, McGraw-Hill.

Two lectures a week. Mr. MacLeod.

10. *Electrical Problem Course*.—Problems on A.C. machinery.

Two hours a week. 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.

References: Glasgow, *Principles of Radio Engineering*, McGraw-Hill; Albert, *Electrical Communication*, Wiley.

Two lectures and one laboratory period of three hours a 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; Vickers, *The Induction Motor*, Pitman; *Senior Laboratory Manual*.

Reference: Morecroft and Hehre, *Electrical Circuits and Machinery*, Vol. II, Wiley.

Three lectures a 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: Coulthard, *Transients in Electric Circuits*, Pitman.

Reference: Steinmetz, *Transient Phenomena*, McGraw-Hill.

One lecture a week. Mr. Coulthard.

14. *Alternating Current Machinery.*—The theory and characteristics of alternating current machines. For Mechanical Engineering students.

Text-books: Puchstein and Lloyd, *Alternating Current Machines*, Wiley; *Senior Laboratory Manual*.

Two lectures and one laboratory period of four hours a week.
Mr. Morgan.

GRADUATE COURSE

101. *Principles and Practice of Electrical Communication.*—A comprehensive study of the theory and practice of electrical communication systems with special reference to radio and telephone line theory.

References: Guillemin, *Communication Networks*, Vols. I and II, Wiley; Everitt, *Communication Engineering*, McGraw-Hill; Terman, *Radio Engineering*, McGraw-Hill; McIlwain and Brainard, *High Frequency Alternating Currents*, Wiley; Olsen and Massa, *Applied Acoustics*, Blakiston; current journals.

Two lectures and two laboratory periods a 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.

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 a 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 a 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 a 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 and 6; Civil Engineering 3 and 10.

Two lectures a 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 a 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 a week. Second Term. Mr. Turnbull.

Metallurgy

1. (a) *Physical Metallurgy*.—Introductory. Structure and physical properties of metals; alloys; equilibrium diagrams; principles of heat treatment of steel and non-ferrous alloys.

Text-book: Heyer, *Engineering Physical Metallurgy*, Van Nostrand.

Two lectures a week. First Term. Mr. Forward.

1. (b) *Reduction Metallurgy*.—Principles underlying metallurgical production methods; sampling; fuels; refractories; hydro-, pyro-, and electro-metallurgical operations.

Text-book: Newton, *An Introduction to Metallurgy*, Wiley.

References: Hofman, *General Metallurgy*, McGraw-Hill; Liddell, *Handbook of Non-Ferrous Metallurgy*, McGraw-Hill; Fulton, *Principles of Metallurgy*, McGraw-Hill.

Prerequisites: Physics 1, Chemistry 1.

Two lectures a week. Second Term. Mr. Forward.

1. (c) *Metallography*.—Pyrometry; preparation of specimens and observation of micro-structures; heat treatment of carbon steels and non-ferrous alloys; simple physical tests.

Text-book: Heyer, *Engineering Physical Metallurgy*, Van Nostrand.

Three hours laboratory a week. Second Term. Mr. Forward.

2. *Reduction Metallurgy*.—Principles of roasting, leaching, smelting, and refining, in particular reference to the metallurgy of gold, silver, copper, lead, zinc, and iron.

References: Stoughton, *Metallurgy of Iron and Steel*, 4th edition, McGraw-Hill; Liddell, *Handbook of Non-ferrous Metallurgy*, McGraw-Hill.

Prerequisite: Metallurgy 1 (b).

Two lectures a week. Mr. Forward.

3. (a) *Physical Metallurgy*.—Continuation of Metallurgy 1 (a). Heat treatment; effect of alloy additions; special alloys.

Text-book: To be announced.

Prerequisite: Metallurgy 1 (a).

Two lectures a week. First Term. Mr. Forward.

3. (b) *Calculations*.—Problems course. Includes combustion, roasting, smelting, leaching, and refining.

Reference: Richards, *Metallurgical Calculations*, McGraw-Hill.

Prerequisite: Metallurgy 1 (b).

Two lectures a week. Second Term. Mr. Forward.

4. *Metallurgical Analysis*.—Laboratory analysis of ores and of metallurgical products. During the second term time will be devoted to experimental and analytic work in conjunction with some specific problem in reduction metallurgy or physical metallurgy.

References: Scott, *Chemical Methods for the Analysis of Metallurgical Products*, 2nd edition, Van Nostrand; Low-Weinig-Schoder, *Technical Methods of Ore Analysis*, Wiley.

Prerequisites: Metallurgy 1 (a), 1 (b), 1 (c), 5, 6.

Nine hours laboratory a week. Mr. Forward.

5. *Fire Assaying*.—Quantitative determination of gold, silver, and other metals by fire methods, with underlying principles.

Text-book: Bugbee, *Textbook of Fire Assaying*, 3rd edition, Wiley.

Prerequisite: Chemistry 1.

One lecture and seven hours laboratory a week. First Term. Mr. Forward.

6. *Wet Assaying*.—Introductory. Metallurgical analysis of ores and concentrates. Principal attention is paid to the technical determination of lead, zinc, and copper.

Prerequisite: Chemistry 2.

Three hours laboratory a week. Second Term. 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.

References: Spurr and Wormser, *Marketing of Metals and Minerals*; Roush, *Strategic Mineral Supplies*; *Mineral Economics*, American Institute of Mining and Metallurgy; Liddell, *Handbook of Non-ferrous Metallurgy*; Mantell, *Industrial Electrochemistry*, McGraw-Hill; current technical and statistical literature.

One lecture a 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 a 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.

References: Taggart, *A Manual of Flotation Processes*, Wiley; Gaudin, *Flotation*, McGraw-Hill; Truscott, *Text-book of Ore Dressing*; Richards and Locke, *Text-book of Ore Dressing*; Taggart, *Handbook of Ore Dressing*, Wiley; Gaudin, *Principles of Mineral Dressing*, McGraw-Hill.

Two lectures a week. 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.

Four hours laboratory a week. Second Term. Mr. Gillies.

3. *Ore Dressing Laboratory*.—Advanced laboratory work, chiefly on selected problems and on more complex ores.

Prerequisites: Ore Dressing 1 and 2.

Six hours a week. Mr. Gillies.

GRADUATE COURSES

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 a week. Mr. Gillies.

102. *Metallurgy*.—Advanced studies in the field of reduction metallurgy or of physical metallurgy. The major portion of the work will consist of laboratory research on a specific problem, in the field chosen.

Prerequisites: Metallurgy 3 (a), 3 (b), and 4.

Twenty-one hours a week. Mr. Forward.

Department of Physics

Professor: G. M. Shrum.

Professor: A. E. Hennings.

Assistant Professor: A. M. Crooker. (On leave of absence.)

Assistant Professor: Harold D. Smith.

Assistant Professor: Kenneth C. Mann.

Assistant Professor: George Michael Volkoff.

Lecturer: J. M. Keller.

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 175.

1. *Elementary Physics*.—See Physics 1, Arts and Science, page 176.

4. (a) *Mechanics*.—An elementary treatment of statics, 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*, 1940, McGraw-Hill.

Prerequisite: Physics 1.

Three lectures and one three-hour laboratory period a week.

4. (b) *Heat*.—This course is begun when Physics 4 (a) is finished. It is assumed that the student is already familiar with the elementary principles of heat.

Text-book: Edser, *Heat for Advanced Students*, 1936, Macmillan.

Three lectures and one three-hour laboratory period a 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: To be announced.

Two lectures and one three-hour laboratory period a 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 a week.

12. *Introduction to Atomic Structure*.—See Physics 12, as in Arts and Science, page 179.

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.

Lecturer: L. E. Ranta.

Part-time Lecturers:

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 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. Miss Gray.

4. *Elementary Biochemistry, as Applied to Physiology*.

One lecture and one laboratory period a week. Second Year. Second Term. Mr. 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 a week. Second Year. Dr. Ranta, Mr. Mathias.

Nursing B and C

1. *Preventive Medicine*.—A study of the public health aspects of preventable disease; preparation and utilization of biological products.

Three hours a week. Dr. Dolman, Dr. Ranta, and Dr. Williams.

9. *Sanitation*.—A study of community sanitation and of relevant legislative measures; field visits.

One hour a week. First Term. Dr. Ranta.

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 a 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 a week. 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 a 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 a 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*, 1936, Macmillan. Two hours a week. Miss Kerr.

13. (b) *Practice of Public Health Nursing*.—A study of the duties and techniques in the special branches of public health nursing; field visits.

Two hours a week. 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 a week. Miss Kerr.

17. *Contemporary Nursing Problems*.—Consideration of recent developments in the nursing field.

One lecture a week. 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 a week. Miss Gray.

18. (b) *Practice Teaching in Nursing*.—This course is supplementary to the above.

Two hours a 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 a week. Miss Gray.

31. *Principles and Methods of Teaching*.

Two hours a week. First Term. Mr. Russell.

21. *Social Case Work*.—An introductory course dealing with some of the more common forms of social maladjustment, and its 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-relation of nursing and allied welfare agencies will be discussed.

Two hours a week. Second Term. Miss Collins, 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 a week. First Term. Mr. 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 a week. Second Term.

Department of Zoology

Professor: W. A. Clemens.

Associate Professor: G. J. Spencer.

Assistant Professor: I. McT. Cowan.

NOTE. Biology 1 is prerequisite to all courses in Zoology.

1. *General Zoology*.—A course on the structure, classification, life histories, and biology of animals.

This course is a prerequisite to other courses in Zoology.

Text-book: Hegner, *College Zoology*, 4th ed., 1936, Macmillan.

References: Buchsbaum, *Animals Without Backbones*, Chicago; Hegner, *Invertebrate Zoology*, Macmillan; Newman, *Vertebrate Zoology*, Macmillan.

Two lectures and two hours laboratory a week throughout the year. Mr. Clemens. 3 units.

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: Section 1, Thursday, 1.30-3.30;

Section 2, Thursday, 3.30-5.30;

Section 3, Monday, 2.30-4.30.

10. *Forest Entomology*.—Insects in their relation to forests, timber, and the health of camp personnel, especially in British Columbia.

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

References: Doane, Van Dyke, Chamberlain, and Burke, *Forest Insects*, McGraw-Hill; Graham, *Principles of Forest Entomology*, 2nd ed., McGraw-Hill.

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

Mr. Spencer.

1 unit.

1941-42

THE
FACULTY
OF
AGRICULTURE

1941-42

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 to the University, registration, etc., see pages 34-38.

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 University Entrance or its equivalent before entering upon these courses (see *University Entrance 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

All extension courses are under the direction of the Director of the Department of University Extension.

Graduate Work

For regulations, see pages 271-272.

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 First 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: Agricultural Economics, Agronomy, Animal Husbandry, Dairying, Horticulture, and Poultry Husbandry.

FIRST YEAR

Agriculture 1, Biology 1, Chemistry 1, English 1, Mathematics 1.

To assist students who contemplate proceeding to the Normal School after taking one year of the course in Agriculture, a first year course in the language taken on Junior Matriculation may be substituted for either Chemistry 1 or Biology 1; but any such student who later registers for a second year in the Faculty of Agriculture must complete the regular course of studies for the first year.

SECOND YEAR

English 2 or English 3 and 4 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 2	Bacteriology 1	Beg. German
Animal Husbandry 15	Biology 2a and 2b	Commerce 1
Dairying 3	Botany 1a	Economics 1
Horticulture 13	Chemistry 2	History 1
Poultry Husbandry 12	Geology 1	Matr. Language 1
	Mathematics 2 or 3	Matr. Language 2
	Physics 1 or 2	Psychology 1
	Zoology 1	

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 Second 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 Second 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 main problems of Agriculture, and some special topics, such as production in relation to population growth, farm tenancy, rural credits, prices of farm products, and the share of Agriculture in the national income.

References and assigned readings from Taylor, Carver, Nourse, Gray, Black, 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 contributions of Farmer Movements to our knowledge of marketing, co-operative marketing and the evolution of marketing legislation.

References and assigned readings from Patton, McIntosh, Hibbard, Black, Boyle, Macklin, Benton, 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.)

Prerequisite: Agricultural Economics 1.

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. (Open to Graduates only.)

Prerequisite: Agricultural Economics 2.

Mr. Clement.

3 to 5 units.

Department of Agronomy

Professor: G. G. Moe.

Professor: D. G. Laird.

Instructor: V. C. Brink.

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

2. *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. 3 units.

3. *Weeds*.—A study of the common noxious 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.

4. *Range Ecology*.—A study of the vegetation of range lands and arable pastures. Ecological relationships of grasses and forbs. Experimental methods and maintenance problems.

Two lectures and one laboratory per week. First Term. 1½ units.

5. *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. 1½ units.

6. *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. 3 units.

11. *Soils*.—An introductory course. Origin, mode of formation, physical structure, and general character of soils of British Columbia. Different systems of cultivation, rotation and manuring, as practised in Canada and elsewhere, and the influence of these factors on the maintenance or exhaustion of soil fertility.

Two lectures and one laboratory per week. 3 units.

12. *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. 3 units.

13. *Drainage and Irrigation*.—Principles underlying drainage and irrigation practices. Field work and drainage problems.

Prerequisite: Agronomy 11.

Two lectures and one laboratory per week. First Term. 1½ units.

14. *Soil Conservation*.—Land use, erosion, and inter-relationships of forest, range, and arable lands.

Prerequisite: Agronomy 11.

Two lectures and one laboratory per week. Second Term.
1½ units.

15. *Soils (Advanced)*.—Interaction of physical, chemical, and biological forces of the soil. Soil morphology, classification and mapping.

Prerequisite: Agronomy 11.

Three lectures per week. 3 units.

21. *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. 1½ units.

22. *Crop Production Problems*.—Preparation of reports and submission of recommendations based on a detailed study of crops, cropping systems, soils and soil management practices on individual farms.

Lectures, seminar periods, and research. 3 units.

23. *Seminar*.—Discussion of literature relative to student problems.

1 unit.

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. *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.

52. *Soil Analysis*.—Soil analysis based on the work given in Agronomy 15, including a detailed study of a representative soil.

Prerequisites: Agronomy 11 and Agronomy 15.

One lecture and two laboratories per week. 3 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 Volkoff.

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.

3. *Fundamentals of Dairying*.—An introductory course. Principles underlying the hygienic aspect of milk production, the manufacture, handling, testing and grading of dairy products.

Reference: Eckles, Combs and Macy, *Milk and Milk Products*, McGraw-Hill Book Co., Inc., latest edition.

Two lectures and one laboratory per week. 3 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.

Prerequisite: Dairying 4.

One lecture and two laboratories per week. Second Term.

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.

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 tree-fruit and small-fruit growing, in plant propagation, and in nursery and greenhouse management; supplemented by orchard, garden, laboratory, 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 and by-products; canning of fruits and vegetables, preparation of fruit juices, vinegar making, preservation by freezing, dehydration, etc.; and the growing and marketing of such horticultural crops as nuts, citrous fruits, figs, dates, bananas, pine-apples, 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.

51. *Research in Plant Nutrition.*—Directed study on some special problem in Plant Nutrition or Applied Plant Physiology.

3 to 5 units.

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 affect these, are emphasized.

(Open to Graduates only.)

Two lectures and four hours laboratory per week. 4 units.

Department of Poultry Husbandry

Professor: E. A. Lloyd.

Instructor: J. Biely.

General 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. 1½ units.

12. (b) *Fundamentals of Poultry Husbandry.*—Breeds, breeding, judging, selection, culling, incubation, brooding, egg grading, marketing, general management.

References: *American Standard of Perfection, 1938-1940*; Rice and Botsford, *Practical Poultry Management*, John Wiley & Sons, fourth edition, 1940.

Two lectures and one laboratory per week. Second Term.

1½ units.

13. (a) *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. 1½ units.

13. (b) *Advanced Marketing*.—Organization in marketing. Domestic and export trade.

Two lectures and one laboratory. Second Term. 1½ units.

14. (a) *Breeding and Judging*.—The breeds of poultry, their history, origin and economic qualities. Judging and selection for egg and meat production.

Reference: Rice, Hall and Marble, *Judging Poultry for Production*, J. Wiley & Sons.

Two lectures and one laboratory per week. First Term. 1½ units.

14. (b) *Advanced Breeding*.—Theories of inheritance. Study of progeny tests.

Reference: Jull, *Poultry Breeding*, J. Wiley & Sons, second edition.

Two lectures and one laboratory per week. Second Term. 1½ 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.

Reference: Lippincott and Card, *Poultry Production*, Lea & Febiger, sixth edition.

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.

References: Morley A. Jull, *Poultry Husbandry*, McGraw-Hill Book Co. Inc.; Lippincott & Card, *Poultry Production*, Lea and Febiger, sixth edition.

One lecture and two laboratory periods, or one laboratory of four hours' duration per week. Second Term, Third or Fourth Year. 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.

Laboratory work to be arranged. 1½ units.

(Open to Graduates only.)

20. *Seminar*.—Poultry literature. 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 Biology and 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 118-123.)

Department of Civil Engineering

Professor: J. N. Finlayson.

(For details of courses see pages 228-236.)

Department of Classics

Professor: Lemuel Robertson.

(For details of courses see pages 124-129.)

Department of Commerce

Professor: Ellis H. Morrow.

(For details of courses see pages 129-131.)

Department of Economics, Political Science, and Sociology

Professor: Henry F. Angus.

(For details of courses see pages 131-141.)

Department of English

Professor: G. G. Sedgewick.

(For details of courses see pages 143-147.)

Department of Geology and Geography

Professor: M. Y. Williams.

(For details of courses see pages 147-154.)

Department of History

Professor: W. N. Sage.

(For details of courses see pages 154-160.)

Department of Mathematics

Professor: Daniel Buchanan.

(For details of courses see pages 160-164.)

Department of Modern Languages

Professor: D. O. Evans.

(For details of courses see pages 164-169.)

Department of Philosophy and Psychology

Professor: J. A. Irving.

(For details of courses see pages 169-175.)

Department of Physics

Professor: G. M. Shrum.

(For details of courses see pages 175-181.)

Department of Zoology

Professor: W. A. Clemens.

(For details of courses see pages 181-185.)

DOUBLE COURSES

1941-42

1941-42

DOUBLE COURSES FOR THE DEGREES OF B.A. and B.A.Sc.

I. Arts and Science, and Nursing

FIRST, SECOND AND THIRD YEARS

The students register in the Faculty of Arts and Science for three years' work as follows:

English 1, Mathematics 1, Language 1, Chemistry 1, in the First Year. English 2, Language 2, Bacteriology 1, in the Second Year.

Biology 1, Physics A or 1, Zoology 1, Psychology A or 1, in the First, Second or Third Years.

Bacteriology 2, Biochemistry, History of Nursing, in the Third Year.

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.

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 190.) Students are recommended to take Mathematics 2 (b) (*Calculus*).

2. Chemistry 2 (except for Forestry), 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 203).

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 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 203).

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 are open in the Second, Third, and Fourth Years of the B.Com. course to students who are looking 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.

Students proceeding to the combined degrees of B.Com. and B.S.F. will take the course outlined below. Upon completion of the Fourth Year the student will be granted the degree of B.Com., and upon completion of the Fifth Year, the degree of B.S.F.

FIRST YEAR	SECOND YEAR
English 1	English 2
Language 1	Mathematics 2 or 3
Mathematics 1	Economics 1
Economics 2	Commerce 1
Elective, preferably Commerce 5 or Biology 1	Botany 1 (<i>b</i>)
	Civil Engineering 2
THIRD YEAR	FOURTH YEAR
Economics 4	Economics 6
Economics 12	Commerce 4
Commerce 6	Commerce 9
Forestry 1 (<i>c</i>)	Forestry 16
Civil Engineering 5	*Elective
*Elective	(Major report in Commerce)
FIFTH YEAR	

The Fifth Year Forestry course in Applied Science for the B.S.F. degree. See page 203.

*Electives must be chosen from the options for the Commerce Course in consultation with the Head of the Department.

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.

1941-42

LIST OF STUDENTS IN ATTENDANCE

SESSION 1940-41

FACULTY OF ARTS AND SCIENCE

FIRST YEAR

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Abernethy, Margaret J.	Parksville	Challis, Leslie A.	Greenwood
Abrams, Betty M.	New Westminster	Chan Kent, Joseph	Vancouver
Adcock, Zelle	Honolulu	Checov, Louie	Vancouver
Allen, Peter	Vancouver	Chong, Peter	Lytton
Anderson, J. Douglas	Vancouver	Christen, Rosina P.	New Westminster
Anderson, Sylvia L.	Vancouver	Christie, Sydney J.	Vancouver
Andrews, Alfred C.	Vancouver	Christie, T. Douglas	Vancouver
Archdekin, Roy H.	Vancouver	Chutter, George P.	Vancouver
Arnell, A. Leon	Vancouver	Clark, Bette G.	Vancouver
Atkins, Eleanor	Steveston	Clark, G. Noreen	Aldergrove
Augustine, Betty-Valerie	New Westminster	Clark, John A.	Vancouver
Avis, Stanley F.	Vancouver	Clark, Johnson B.	Vancouver
Bakony, Lionel I.	Vancouver	Clarke, William G.	Naramata
Ballantyne, W. George	Vancouver	Coffey, P. Marion	Vancouver
Ballard, Isabel W.	Vancouver	Coles, John M.	Kaslo
Banford, Norman M.	New Westminster	Collins, Peter J.	Vancouver
Barer, Ralph D.	Vancouver	Colquhoun, Jean McI.	Caulfield
Barry, Frank W.	Ocean Falls	Colvin, Richard H.	Vancouver
Barry, Fred	Trail	Conkey, Elizabeth E.	Vancouver
Bartholomew, Harold D.	Vernon	Conn, Barbara	New Westminster
Bartling, Hedwig D. H.	Vilna, Alta.	Conway, Lorraine C.	Vancouver
Batten, William R.	Vancouver	Cooke, Hugh A.	Vancouver
Beavo, William A.	Revelstoke	Cooke, Norman E.	Vancouver
Bersea, Keith A.	Vancouver	Cooper, John B. G.	Vancouver
Bertram, Gordon W.	Vancouver	Crocker, Charles B.	Vancouver
Bibbs, Richard M.	Vancouver	Croft, Margaret C.	Vancouver
Binnie, Robert F.	Vancouver	Cronkhite, J. Morrison	Aldergrove
Bishop, Phyllis D.	Vancouver	Crosby, Robert T.	Vancouver
Bligh, Hildred N.	Vancouver	Crowder, D. Isabel	Vancouver
Bloch, Inez E.	Vancouver	Crowell, Charlotte L.	Vancouver
Boale, Bernice R.	Vancouver	Cruise, George T.	Vancouver
Bodnar, Michael W.	Vancouver	Cruit, Richard N.	Vancouver
Bowstead, Mary E.	Edmonton, Alta.	Culver, Dennis F.	Vancouver
Boyd, Nora E.	Vancouver	Cunningham, Jack R.	Vancouver
Boyd, Ruth M.	Vancouver	Currie, Robert H.	Vancouver
Boyes, Margaret M.	Vancouver	Curtin, Francis J.	Vancouver
Brandon, George F.	Vancouver	Dawe, William S.	Vancouver
Bratt, Herbert A.	Nanaimo	Dean, Alan W.	Vancouver
Bremner, J. Alan	Vancouver	DeBou, Gwendolyn M.	Vancouver
Bromley, Gordon F.	Vancouver	Dellert, Albert	Kimberley
Bruce, Mona L. C.	Vancouver	de Macedo, John B.	Vancouver
Bryant, James L.	Ocean Falls	Dennis, Leslie L.	Vancouver
Budd, Joan	Vancouver	Dennis, P. James A.	Vancouver
Buerge, Reuben O.	Nakusp	Dennison, A. Spencer	Victoria
Bunnell, Frank R.	Vancouver	de Pencier, E. Audrey	Vancouver
Bunting, I. Joan G.	Fort Fraser	Devitt, Eleanor E.	Port Kells
Burgess, Beryl M.	Vancouver	Dirassar, Leon G.	Vancouver
Burke, Harold H.	Vancouver	Dockrill, Joseph F.	Telkwa
Butchart, M. Doreen	Langley Prairie	Dorgan, M. Marcia	New Westminster
Calder, Frank, Greenville, Naas River		Drake, Edward A.	Vancouver
Campbell, Jean A. K.	Vancouver	Drennan, G. Alexander	Vancouver
Campbell, Mary E.	Calgary, Alta.	Drew, J. Sydney	Lachute, P.Q.
Campbell, N. Eva-Jean	Vancouver	Dudgeon, E. Winnona	Vancouver
Carey, Amy C.	Vancouver	DuMoulin, Phyllis A.	Vancouver
Carmichael, Andrew J.	Vancouver	Dunell, Basil A.	New Westminster
Carrothers, A. Brian B.	Vancouver	Eckman, James S.	Vancouver
Carter, S. MacMordie	Vancouver	Edwards, A. Douglas	Haney
		Ellingham, Joan C.	Vancouver
		Ellis, Harry McF.	New Westminster

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

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Elvin, Dick W.	Vancouver	Hammitt, Virginia A.	Vancouver
Emanuele, Jack	Vancouver	Handling, Mary J.	North Vancouver
Errico, Ernest	Vancouver	Harada, Teruo	Cumberland
Estey, Byron T.	Vancouver	Harvey, Harry J.	Vancouver
Everton, Margaret E.	Vancouver	Hasegawa, James H.	New Westminster
Everton, Vernon A.	Vancouver	Hatte, Ross	Vancouver
Eyre, Alan M. L.	Vancouver	Hayden, Elizabeth	Vancouver
Fairbank, David P.	Harrop	Hazlewood, Mary-Gordon	Vancouver
Fairgrieve, William C.	Vancouver	Hebb, Dorothy M.	Vancouver
Fairnie, Louise LaR.	Vancouver	Heisler, Earle L.	Vancouver
Farina, Charlie O.	Vancouver	Hert, William L.	Vancouver
Farr, David M.	Vancouver	Hetherington, John D.	Vancouver
Fell, J. Michael G.	Vancouver	Hewittson, June M.	Vancouver
Fergusson, Otway C.	Vancouver	Higgins, James A.	New Westminster
Ferry, Jack A.	Vancouver	Hikida, Hideaki R.	New Westminster
Fieid, Ralph I.	Vancouver	Hill, Arthur E.	Melfort, Sask.
Finlay, Mary B.	Vancouver	Hill, Robert W.	Vancouver
Fisher, Harold D.	Kamloops	Hodge, Muriel	Vancouver
Fitzsimmons, Hugh T.	Vancouver	Hodges, William G.	Vancouver
Flader, Samuel	Vancouver	Holbrook, Elsie G.	Vancouver
Fleming, Bryce H.	Vancouver	Holdom, Frances E. L.	Crescent
Fleming, Norma W.	Vancouver	Hopkins, John A.	Prince Rupert
Foley, Fred R.	Vancouver	Hormann, Elly A. J. E.	Vernon
Foot, Edward J.	East Kelowna	Horne, Pauline F.	Union Bay
Forster, John H.	Vancouver	House, Margery S.	New Westminster
Foster, J. Elizabeth	Vancouver	Housser, David	Vancouver
Foster, Mary L.	Nanaimo	Howard, Edward I.	Vancouver
Francis, Donald W.	New Denver	Hughes, Edward N.	Vancouver
Francis, Frank M.	Vancouver	Hunter, Dorrie M.	Yakima, Wash.
Francis, Joseph	Vancouver	Hutchinson, Elizabeth P.	Vancouver
Freeman, Ruth I.	Portland, Ore.	Hutchinson, William T.	Vancouver
Frizell, R. Noel	Port Alice	Ivey, Donald G.	Vancouver
Frost, Marion L. G.	Vancouver	Jackson, L. Edward	Vancouver
Galbraith, John B.	Vancouver	James, Ralph E.	Vancouver
Gallagher, Jack L.	Vancouver	Jardine, John E.	Vancouver
Galt, William T.	Vancouver	Jarvi, Helga	Vancouver
Gansner, Nina M.	Vancouver	Jenkins, Albert E.	Vancouver
Gardiner, Jack L.	Vancouver	Jenkins, Margaret R.	Vancouver
Gardner, Melvin T.	Vancouver	Jessop, Harvey C.	Vancouver
Garner, Joseph J.	Vancouver	Jinks, Gordon MacM.	Vancouver
Garrett, F. Marjorie	Vancouver	Johnson, Arthur C.	Vancouver
Gibson, Donald A.	Moukden, Manchuria	Johnson, Norman T.	Calgary, Alta.
Gillies, Barbara B.	Vancouver	Johnston, Doreen E.	Invermere
Gillies, Dorothy I.	Calgary, Alta.	Johnstone, Alan D.	Vancouver
Gillis, Glenna H.	Vancouver	Jones, Hugh C.	Vancouver
Gitterman, Charles O.	Vancouver	Joyce, Ronald N.	Port Alberni
Giuriato, Lino	Vancouver	Kaario, Edsel A.	Sointula
Goddard, Phyllis B.	North Vancouver	Kadota, Charles H.	Englewood
Gogain, Marion F.	Lochdale P.O.	Kagetsu, Akiko	Vancouver
Golding, John W.	Vancouver	Kawaguchi, Jack S.	Vancouver
Gomery, Donna L.	Vancouver	Kendall, Richard A.	Gibson's Landing
Goodman, Abraham	Vancouver	Kennedy, John W.	Vancouver
Goodman, Charles R.	Vancouver	Kenyon, Kenneth A.	Penticton
Goodwin, Norman L.	Vancouver	Kermode, Harry D.	Vancouver
Gorman, Ray T.	Vancouver	Kerr, Robert G.	Vancouver
Gosnell, Bertram C.	Enderby	Kidd, Mary H.	Vancouver
Gould, R. Allan	Vancouver	Kilet, Cynthia M.	Vancouver
Gow, Frank J.	Vancouver	Knowles, Robert A.	Vancouver
Grant, Doreen M.	Vancouver	Kobayashi, Yutaka	Steveston
Grant, Gordon B.	Vancouver	Koenigsberg, Irving N.	Vancouver
Grant, William D.	Ioco	Kostman, Philip	Vancouver
Gregory, Edward S.	Vancouver	Lake, June M.	Vancouver
Griffin, F. Paul	North Vancouver	Lam, Mathias	Vancouver
Grinnell, James B.	Vancouver	Lambe, Austin C.	Vancouver
Guichon, Lloyd J.	Quilchena	Lane, Ruth A.	Vancouver
Gustavson, Arnold E.	Vancouver	Large, D. Lorraine	Vancouver
Halpin, Roger	Vancouver	Latreuille, Bruce E.	Vancouver

†Partial.

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

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Lawson, David A.	Vancouver	McCarvill, Cyril J.	Vancouver
Lazzarin, Fioretta	Quesnel	McDermid, D. Jeanne	Vancouver
Lean, Alf H.	North Vancouver	McDermid, Edna M.	Parksville
Lee, Douglas H. T.	Vancouver	McDiarmid, Lorna K.	Vancouver
Lees, Doris M.	Vancouver	McDiarmid, Muriel A. I.	Kamloops
Leigh-Spencer, Gerald L.	Calgary, Alta.	McDonald, Colin F.	South Slocan
Lighthouse, Oliver L.	Vancouver	MacDonald, J. Malcolm	Nanaimo
Lightstone, Jack	Vancouver	Macdonald, Mary J.	Vancouver
Lim, Man Y.	Vancouver	McDonald, Russell G.	Aldergrove
Lind, Fred O.	Vancouver	McFadden, M. Eileen	Vancouver
Lindsay, J. Eleanor	Kimberley	Macfarlane, M. Ernest R.	Vancouver
Lindsay, Mary E.	Kimberley	McGhee, Donald W.	Port Alice
Lindsay, Roderick	Vancouver	MacGillivray, Jack O.	Vancouver
Little, Alice E.	Terrace	McGregor, F. Christopher	Vancouver
Littler, Ada E.	Natal	McGuinness, David	Invermere
Livingstone, Grant B.	Vancouver	MacIntosh, L. Jean	Vancouver
Lloyd, George A.	Vancouver	McIntosh, Mary B.	Vancouver
Locke, Elizabeth M.	Vancouver	McKechnie, Hazel L.	Dewdney
Locke, Orville G.	Phelpston, Ont.	MacKenzie, Alex	Vancouver
Long, Joshua	Vancouver	MacKenzie, D. Munro	Vancouver
Long, Katherine R.	Vancouver	MacKenzie, Eileen E.	Sidney
Louie, John	Vancouver	McKenzie, Ruth C. New Westminster	
Louie, Quan	Vancouver	McKeown, Robert J. E.	Vancouver
Lowther, Roy A.	Britannia Beach	McKie, Audrey E.	Vancouver
Lyons, Ormond E.	Powell River	McKillop, Moira W.	Vancouver
Lytle, Dennis D.	Vancouver	McKinlay, William D.	Vancouver
Marhull, Allen	Vancouver	McKinnon, George L. C.	Cranbrook
Marling, Kathleen	Vancouver	MacLachlan, Marguerite R.	Vancouver
Marsden, Adele	Vancouver	McLean, Alastair	Vancouver
Marshall, Doris P.	Nanaimo	MacLean, Eian D.	New Westminster
Marshall, M. E. Kay	Vancouver	MacLean, Jean C.	North Vancouver
Martin, Margaret B.	Vancouver	MacLean, J. Harris	Vancouver
Martin, Sally V.	Burnaby Lake	McLean, Robert E.	Vancouver
Masuda, George	Vancouver	McLennan, John A.	Vancouver
Mathews, Frank S.	Murrayville	McLeod, Sydney D.	Cadomin, Alta.
Menzies, Dora K.	Vancouver	McMillan, Mary A.	Port Alberni
Mercer, E. Florence	Vancouver	McMurchy, Lorne S.	Calgary, Alta.
Messenger, Dorothy M.	West Vancouver	MacPherson, Allan D.	Revelstoke
Mikkelson, Melvyn A.	Golden	Macpherson, Peter McA.	Vancouver
Mill, John B.	New Westminster	MacRae, Jeffery W.	Port Alice
Millar, Douglas A. J.	Oliver	Nagata, Shinko M.	Vancouver
Miller, Albert J.	Vancouver	Nairne, Mildred M.	Vancouver
†Miller, Robert F.	Chefoo, China	Nairne, Ronald S.	Vancouver
Milne, Jack E.	Revelstoke	Nell, Eileen M.	Vancouver
Miniato, Oswald K.	Vancouver	Nelson, John A.	Vancouver
Mitten, Douglas S.	Vancouver	Nesbitt, Sheila J.	Vancouver
Miura, Hideo	Vancouver	Nickerson, D'arcy G.	Vancouver
Mohr, Frank K.	Prince Rupert	Nikaido, Takako	Vancouver
Montador, Robert E.	Vancouver	Nimmons, Phillip R.	Vancouver
Montgomery, William R.	Vancouver	Nobbs, William H. L.	Vancouver
Moore, Sheila B.	Fort Fraser	Nordale, Arnold	Dawson, Y.T.
Moran, John W.	Vancouver	Norton, William A.	Vancouver
Morris, Desmond	Cloverdale	Nygaard, Holger O. V.	Eburne
Morris, Fred S.	Vancouver	Ogilvie, Sheila McD.	Vancouver
Morton, Evaline A.	Vancouver	Ogren, Arthur	Haney
Morton, James W.	New Westminster	Oliver, Hubert G.	Kimberley
Morton, Roy E.	Williams Lake	Olliver, Gwenneth M.	New Westminster
Munro, David A.	Okanagan Landing	Olsen, John N.	Vancouver
Murray, R. Elaine	Vancouver	Olson, Eugene A.	Hope
Myers, Fred C.	Vancouver	Onizuka, Shigeo	Vancouver
McArthur, Raoul L.	New Westminster	Ottewell, M. Bonnie	Ladner
McBain, M. Allison	Vancouver	Oughtred, Aulay M.	Chapman Camp
MacBean, David P.	Smithers	Ozeroff, W. William	Rossland
McBride, Ronald T.	Vancouver	Panton, William D.	Vancouver
McCarry, James J.	Vancouver	Parnum, Ewart	West Vancouver
		Pastinsky, Belle	Vancouver

†Partial.

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

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Paterson, Kathleen M.	Vancouver	Sherman, Phyllis R.	Vancouver
Paton, Alexander K.	Vancouver	Shields, Meryle E.	New Westminster
Patrick, Barbara A.	Vancouver	Shimo-Takahara, Lillian Y.	
Payne, Harold R.	Vancouver		Vancouver
Pearson, Yvonne R.	Vancouver	Shoji, Henry N.	Vancouver
Pealow, Alan LeR.	Vancouver	Shortreed, James F.	Aldergrove
Percival, Joseph K.	Vancouver	Sibley, John C. A.	Vancouver
Phelps, James W.	Vancouver	Simmons, Patricia A.	North Vancouver
Phillipson, Murray	Vancouver		
Philpot, Mary C.	Cranbrook	Simpson, Keith B.	Penticton
Philps, Fred M.	New Westminster	Sims, Jean R.	Vancouver
Pickin, H. Barbara	Vancouver	Sims, Mervin H.	Vancouver
Piderman, J. Pierre	Port Coquitlam	Sinclair, Marjorie H.	Invermere
Poole, Disney B.	Sorrento	Sinclair, R. Elmer	Vancouver
Pooley, Robert E.	Vancouver	Slark, Gordon A.	Vancouver
Powell, John R. P.	Vancouver	Smith, Wilma G.	New Westminster
Powell, Rees K.	Summerland	Sparkes, Clifford S.	Vancouver
Pride, Agnes G.	Eburne	Sparrow, Marion	Steveston
Purdon, Richard M. H.	Vancouver	Stewart, Gertrude V.	Vancouver
Rae, Elizabeth B.	Vancouver	Stiles, Edwin H.	Calgary, Alta.
Ralston, Donald	Vancouver	St. John, P. Jocelyn	Vancouver
Rand, Robert W.	Vancouver	Straith, Joan M.	Courtenay
Rawlings, Phyllis T.	Vancouver	Street, William A.	Vancouver
Redlich, Berta B.	Cloverdale	Struthers, Jean	Vancouver
Redmond, John E.	Vancouver	Swanson, Christine T.	Vancouver
Reed, Kenneth W.	Salmon Arm	Sweatman, Henry C.	Duncan
Reid, Margaret McD.	Vancouver	Sweeney, Fay Lois	Ocean Falls
Reid, W. Wallace	Vancouver	Sworder, Jack V.	Naramata
Remnant, Peter	Vancouver	Tambellini, George J.	Fife
Renwick, H. Miram	Vancouver	Taylor, Bruce E.	Vancouver
Reynolds, Aingelda St.L. B.		Taylor, Edward R.	Vancouver
	Vancouver	Taylor, Jean E.	Vancouver
Rhodes, Hugh	Caulfeild	Taylor, Leonard H.	Vancouver
Rhodes, John A.	Vancouver	Tees, Peter J. A.	Vancouver
Riddell, William G.	Vancouver	Telford, Robert B.	Vancouver
Rietchel, Patricia	Vancouver	Temoin, Pearl	Vancouver
Robertson, Audrey M.	Kaleden	Thicke, Joan C.	Vancouver
Robertson, Heather	Vancouver	Thompson, Doris L.	Vancouver
Robinson, Donald B.	Oliver	Thomson, M. Gerald	Vancouver
Robinson, J. W. David	Vancouver	Thomson, M. Patricia	Vancouver
Robinson, Valerie J.	Vancouver	Timmons, Anthony	Vancouver
Robson, Donald M.	New Westminster	Toguri, Samuel G. T.	Vancouver
Robson, Mabel G.	New Westminster	Tompkins, June E.	Calgary, Alta.
Roots, E. Fredrick	Banff, Alta.	Tornroos, Talbot G.	Vancouver
Rose, M. Evelyn	Langley Prairie	Tufts, Aileen M.	Vancouver
Ruardi-Wichers, Wendelina C.		Underwood, Eldin S.	Vancouver
	Vancouver	Urquhart, Helen M. A.	Burnaby
Runkle, Penelope A.	Vancouver	Uyeda, Lily Y.	Vancouver
Rush, George E.	Vancouver	Uyeno, Teiso	Vancouver
Russell, James H.	Vancouver	Vallance, Roderick D.	Coalmont
Russell, Marjorie M.	Vancouver	Van de Bogart, Helen	
Ryan, Daphne M.	Vancouver		New Westminster
Saba, Albert H.	Vancouver	Van Roggen, George	Vancouver
Sanderson, Phyllis A.	Vancouver	Vickers, Pauline	Vancouver
Sandison, Annabel	Vancouver	Waldie, Adam C.	Trail
Sandys, Marjorie A.	Milner	Waldie, Robert J.	Vancouver
Scatchard, Shirley K.	New Denver	Walker, Noelle E. E.	Vancouver
Schiedel, Nancy C.	Vancouver	Wallace, John A.	Vancouver
Schofield, William J.	Regina, Sask.	Walmsley, H. Neil	New Westminster
Scott, Elizabeth A.	Vancouver	Walsh, Helen M.	Vancouver
Scott, Norma E.	Vancouver	Walter, Bruce H.	Spring Coulee, Alta.
Scougall, Jessie E.	Vancouver	Walton, William A.	Bralorne
Scrivener, Jack V.	Vancouver	Warner, William L.	Vancouver
Scudamore, John T.	Sardis	Warren, Margaret E.	Vancouver
Semple, Mary	Vancouver	Warwick, William E.	Vancouver
Service, P. Kelvin	Vancouver	Watanabe, Saburo	Vancouver
Sexsmith, Roderic F.	Vancouver	Watson, Elizabeth A. M.	Vancouver
Seymour, E. Aileen	Vancouver	Watson, Mary V.	Duncan

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

Name	Home Address	Name	Home Address
Watt, Evelyn J.	Prince George	Wilson, Raymond H.	Peachland
Watts, William B.	Vancouver	Wilson, William L.	Vancouver
Weaver, June M.	Vancouver	Wishart, Marion M.	Vancouver
Webb, Genevieve	Ladner	Wismer, Jack	Vancouver
Welch, Helen P.	Qualicum Beach	Woo, John S.	Vancouver
Welsford, William D.	Vancouver	Woo, Mary M.	Vancouver
Westman, Thomas A.	Vancouver	Wood, Mary A.	Vancouver
Whimster, Muriel F.	Nelson	Woodcroft, Derek A.	Victoria
White, G. George	Eburne	Woolley, Dorothy L.	Vancouver
White, William A. T.	Vancouver	Wright, Stanley G.	Trail
Whitelaw, Glenn R.	Vancouver	Wright, S. Courtenay	Vancouver
Wickstrom, N. A. Tage	Vancouver	Wyness, Eleanor J.	Vancouver
Wilbur, William	Rossland	Yatabe, Minoru	Vancouver
Willan, Margaret F.	New Westminster	Yeasting, Alice M.	Vancouver
Williams, Bernice M. S.	Vancouver	Yip, Stanley D.	Vancouver
Williams, Chester J.	Calgary, Alta.	Young, Michael G.	Vancouver
Williams, L. June	Vancouver	Younger, Andrew H.	Vancouver
		Yuill, Ronald B.	Vancouver

SECOND YEAR

Ades, Audrey I.	Vancouver	Bourne, Evelyn I.	Vancouver
Alexander, Veletta M.	Prince George	*Bowie, Jack W.	Vancouver
Allan, James G.	Nelson	Bowie, James L.	Vancouver
*Allan, John N. M.	West Vancouver	Boyce, Kenneth C.	Vancouver
*Allen, Norman P.	Vancouver	Boyd, Mary E.	Vancouver
Anderson, Elizabeth D.	Vancouver	Bradley, Mary E.	Vancouver
Anderson, John J.	Vancouver	Brandon, James R.	Vancouver
Anderson, V. Yvonne	Kelowna	Brandt, Helen K.	Vancouver
Arm, Jean M.	Vancouver	Broadhead, Ronald L.	Vancouver
Armitage, Marian H.	Salmon Arm	Brown, Eanswythe	Vancouver
Armour, June C.	Vancouver	Brown, Harry	Coghan
*Armstrong, Norman H.	Vancouver	Buckerfield, Mary I.	Vancouver
Ashe, Geoffrey T. L.	Vancouver	*Buller, Margaret H.	Vancouver
Aszkanazy, C. Leonore	North Vancouver	Bulman, Norman	Vancouver
Atherton, Ruth E.	Vancouver	Bunting, Rosamund G.	North Vancouver
Attree, Patricia W.	Vancouver	*Burchell, Sheridan	Prince Rupert
*Attridge, Mary Louise	Cranbrook	Burke, Cornelia C.	Vancouver
Badger, Isabel McN.	Vancouver	Burris, Donald S.	Kamloops
Bain, Donald T.	Golden	Butler, L. May	Vancouver
Baker, Chester H.	Nanaimo	*Cameron, D. Ian	Vancouver
Bakony, Edward G. J.	Vancouver	Campbell, Charles G.	Vancouver
Ball, Patricia E.	Vancouver	Campbell, David V.	Vancouver
*Barlow, C. Vernon	Vancouver	*Campbell, William M.	Vancouver
Barnett, Joan R.	Vancouver	*Cardinal, Eric R.	North Vancouver
Barss, Elizabeth M.	Vancouver	*Carsley, Julie W.	Calgary, Alta.
*Bartholomew, Gilbert A.	Vancouver	Carson, John J.	Vancouver
Barton, Dorothy F.	Chilliwack	*Carter, Arthur W.	Vancouver
Barton, William S.	Penticton	Casselman, W. G. Bruce	Vancouver
Beaumont, Elizabeth N.	Vancouver	Chambers, Stewart L.	Vancouver
Beebe, Dorothy	Vancouver	Chatwin, James	Vancouver
Bell, Maureen F.	Vancouver	Chechik, Ben M.	Vancouver
Belton, Caroline	Ioco	Chenoweth, Jocelyn D.	Vancouver
Bender, William G.	Vancouver	*Christopherson, Kathleen	Vancouver
Bennett, John N.	Vancouver	Chubb, J. Arthur	Vancouver
Berton, Lucy F. B.	Vancouver	Church, Edward J. M.	Vancouver
*Betteridge, John H.	Stave Falls	*Claridge, Charles A.	Vancouver
Beveridge, E. Isabel	Vancouver	Clark, Kathleen D.	New Westminster
Bew, Norma	Vancouver	Clarke, Rosemary M.	Vancouver
*Bewley, A. Leslie	Vancouver	Clemens, Ann M.	Vancouver
*Bingham, Alfred E.	Vancouver	*Clyne, Norval S.	Vancouver
Bjarnason, Val	Vancouver	Collins, Frank A.	North Vancouver
Blakley, Herbert A.	Radium Hot Springs	*Corey, D. Ruth	Vancouver
Boond, Dorothy L.	Vancouver	Cormack, William T.	New Westminster
Boulbee, Marian E.	Vancouver	Costello, Mary J.	Vancouver

*Conditioned.

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

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Cowan, P. Robert.....	Vancouver	Harrison, Jack B.....	Vancouver
Coy, Filmer R.....	Invermere	Harvey, Denis F.....	Calgary, Alta.
Crosby, Marjorie E. L.....	Banff, Alta.	Harvey, Elizabeth E.....	Vancouver
Cullinane, Raymond T.....	Rossland	Hastings, William G.....	Vancouver
*Currie, John F.....	Vancouver	Heise, Jack K.....	Vancouver
Dalin, Winifred H.....	Celista	Herberts, Edward D.....	Vancouver
Daniell, Jocelyn M. D. B.....	Nanaimo	*Herberts, Lewis T.....	Vancouver
Darling, M. Kathleen.....	Vancouver	Hibberson, Robert J.....	Victoria
David, Ruth A.....	Vancouver	Hill, Charles J.....	Mission City
Davie, Robert G.....	Vancouver	Hirano, Toshio.....	Vancouver
Davies, Llewelyn B.....	Vancouver	Hoag, Audrey.....	Vancouver
Dear, Wallace.....	Brighouse	Hobden, F. Elizabeth.....	West Vancouver
DeBeck, Howard D.....	Vernon	Hodgson, William R.....	Vancouver
DesBrisay, Mary E.....	Vancouver	*Holland, Arthur G.....	Nanaimo
DesBrisay, Ruth M.....	Vancouver	Holland, Kathleen A.....	Vancouver
*Dickie, Bette F.....	Vancouver	*Hooson, William.....	Vancouver
Dickson, Geoffrey A.....	Vancouver	Horswill, Sydney R.....	Nelson
Dilger, V. Vivian.....	Vancouver	Hunter Harry I.....	Powell River
Dixon, Charles R. Medicine Hat, Alta.		Hunter, Roy A.....	North Vancouver
Dixon, Hugh C.....	Calgary, Alta.	*Hunter, Sylvia J.....	North Vancouver
Donovan, Basil G.....	Vancouver	Irons, Margaret L.....	Young, Sask.
*Drury, Mary A.....	Whitehorse, Y.T.	Jackson, Douglas L.....	Vancouver
Dryden, Earl.....	Vancouver	Jackson, Frances C.....	Vancouver
Drysdale, Norma K.....	Vancouver	Jenkinson, Doreen E.....	Vancouver
Duncan, Margaret W.....	Revelstoke	*Johnson, Eva C.....	Vancouver
Dunlop, Ruth A.....	Vancouver	Johnson, Gordon H.....	Vancouver
Dwyer, Melva J.....	Kamloops	Johnson, Phyllis M.....	Vancouver
Edwards, Dalma.....	Chilliwack	Jones, Michael J.....	Eburne
Eldridge, Kenneth A.....	Vancouver	Jones, Neville C.....	Kelowna
*Elliott, Frederick N.....	Vancouver	Jukes, Joan.....	Vancouver
Ellis, Hugh MacK.....	Vancouver	Keith, Kenneth L.....	Victoria
Ellis, Jesslyn P.....	Vancouver	Kells, Owen C.....	Vancouver
Eldson, W. Douglas.....	Bonnington	Kennedy, Everett B. M.	North Vancouver
Erickson, Norma A.....	Aldergrove	Kitson, C. Edith.....	Vancouver
Fairall, Wallace H.....	New Westminster	Lansdowne, Rosemary L.	70-Mile House
Farina, Alfred J. O.....	Vancouver	Large, Ruth.....	Vancouver
Farrell, F. Mary.....	Vancouver	Lawler, Laverne.....	Vancouver
Ferguson, Norman C.	New Westminster	Leach, Gwendolyn D.	New Westminster
Filmer-Bennett, Doris.....	Vancouver	Lebedovich, Stephen.....	Vancouver
Finlay, J. Graham.....	Vancouver	Lee, Jean-Carol.....	Vancouver
Fisher, E. Brian.....	Calgary, Alta.	Lee, Marjorie M.....	West Vancouver
Flynn, J. Patrick.....	Vancouver	Lee, Ruth.....	Vancouver
Flynn, Margaret J.....	Vancouver	Leedham, David A.....	Vancouver
Francis, Margaret V.....	Vancouver	*Lightstone, Robert.....	Vancouver
Freeman, Viva F.....	Quesnel	Lind, Lorne O.....	Vancouver
*Friskien, James R.....	Calgary, Alta.	Lipsett, C. Mary.....	Vancouver
Galbraith, D. Ewen.....	Youbou	Lilster, Mary H.....	Vancouver
Gardiner, Gloria E. L.....	Vancouver	Lloyd, Norman D.....	Kamloops
Gardiner, Margaret H.....	Vancouver	Lock, Vivian E. R.....	Vancouver
Gardner, Alan.....	Calgary, Alta.	Long, Charles F.....	Vancouver
Garrett, Dorothy E.....	Vancouver	Long, Joseph D.....	Vancouver
Gellatly, Allan E.....	Westbank	Lynn, James F.....	Vancouver
Gibson, Doreen.....	Qualicum Beach	Mabee, Jean M.....	Oliver
Gillard, S. Megan.....	New Westminster	Maddin, W. Stuart.....	Vancouver
Glover, Maurice H. A.....	Vancouver	Manes, John D.....	Calgary, Alta.
Gordon, George A.....	Vancouver	*Manley, J. Reginald.....	Vancouver
*Goyer, Margaret E.....	Vancouver	*Marks, Benjamin A.....	St. Louis, Mo.
*Graham, Evelyn F. M.....	Vancouver	Marr, K. Mavis.....	Vancouver
Hall, J. Gordon.....	Vancouver	Marshall, Russell H.....	Vancouver
Hall, Ranjit S.....	New Westminster	Martin, Carol M. S.....	Vernon
Halstead, John G. H.....	Vancouver	Matheson, Beryl A.....	New Westminster
Hamilton, Dorothy H.....	Vancouver	Matheson, Helen R.....	Vancouver
Hamilton, Isobel B.....	North Bend	Matheson, Ian D.....	Vancouver
Hamilton, Roy J. A.	New Westminster	Matthews, Charles A.....	Vancouver
Hammond, Arthur B.....	Victoria	*Meek, A. J. Denham.....	Salmon Arm
Hanbury, A. Weldon.....	Monte Lake		

*Conditioned.

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

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Mellish, Gladys M.	Vancouver	Owens, E. Mary	Evelyn
Meredith, Patricia M.	Vancouver	*Oxley, Gwendoline	North Vancouver
Messenger, Georgina A.	Vancouver	Palmer, Ruby A.	Creston
Milligan, Phyllis H.	Vancouver	Parkinson, Robert H.	Vancouver
Mills, Florence S.	Vancouver	Parminter, Alfred V.	New Westminster
Moe, Barbara M.	Vancouver	Parsons, Terrence G.	New Westminster
Monahan, Arthur	Vancouver	Peatfield, Joan	Radium Hot Springs
Moyls, Amy C.	Vancouver	Pedlow, Douglas S.	Vancouver
Moyls, Margaret L.	Vancouver	*Pendleton, Wayne S.	Red Gap
Muir, Elizabeth A.	Vancouver	Penny, Harry L.	Vancouver
*Mulhern, Merrie N.	Vancouver	Peterson, Annie B.	Prince Rupert
Mundell, Percy M.	Vancouver	Pettie, George W.	Vancouver
Murray, Robert McK.	Vancouver	Peyman, Douglas A. R.	Vancouver
McBurney, S. Lorne	Langley Prairie	Phillips, Brenda C.	Vancouver
McCuaig, Elizabeth A.	Honolulu, T. H.	Pickering, Mary G.	Vancouver
McDiarmid, Lorna M.	North Vancouver	Pickin, Ruth	Vancouver
McDonagh, Jack E.	Vancouver	*Pilkington, Laurence	New Westminster
Macdonald, John L.	Victoria	Plommer, Robert D.	Vancouver
MacDonald, Marion A. M.	New Westminster	*Polglase, William J.	Vancouver
Macdonald, Mary J.	Vancouver	Pronger, Ralph C.	Vancouver
Macdonald, Shirley	Vancouver	Pronger, Shirley C.	Vancouver
*MacEwen, Edwin B.	New Westminster	Proven, Nettie I.	Vancouver
McKay, Donald M.	Vancouver	*Quick, Elizabeth E.	Squamish
McKelvy, Mary E.	Vancouver	Ravve, Abraham	Los Angeles, Calif.
Mackintosh, Gordon D.	Vancouver	*Rayner, Patricia M. A.	Vancouver
McLachlan, Ross S.	West Summerland	Redfern, Nancy L.	North Vancouver
McLachlan, Ruby J.	Sardis	Ricketts, Donald B.	Vancouver
McLeary, Nan	Cranbrook	Ridley, Eileen J.	Vancouver
MacLennan, Catherine	Trail	*Ritchie, Hugh J.	Eburne
*MacLennan, David B.	Vancouver	Ritchie, L. Noni	Vancouver
*McLeod, John M.	Trail	Rittenhouse, Betty E.	Blubber Bay
*McLeod, J. D. Penn.	Vancouver	*Robertson, Darwin H.	Vancouver
MacLeod, Robert A.	New Westminster	Robertson, Donald A.	Vancouver
McLintock, Susan M.	Whytecliff P.O.	Robertson, George	Vancouver
MacMillan, Donald G.	Edmonton, Alta.	Robertson, James M.	Vancouver
*MacMillan, Donald J.	Calgary, Alta.	Robertson, Roderick F.	Vancouver
*Macnab, Phoebe	Calgary, Alta.	Robin, Doris J.	Vancouver
McNaughton, F. Audrey	Victoria	Robinson, Clifford	Michel
McPhail, Alix	Vancouver	Robinson, Grant T.	Vancouver
McPhee, Maurice D.	Vancouver	Roche, R. Gordon	Fort Langley
McQueen, Barbara M.	Vancouver	Rogerson, John	Ladysmith
McTavish, Mary	Vancouver	Rose, John O.	Vancouver
McWilliams, Helen C.	Vancouver	Ross, Donald H. MacR.	Vancouver
McWilliams, Robert W.	Vancouver	Russell, Rosamund A.	Kelowna
*Nash, Marygold V.	North Vancouver	Rutherford, Robert J.	Cumberland
Nelles, Thelma M.	Abbotsford	Saint, June A. B.	Vancouver
*Nelson, Catherine M.	Vancouver	Salt, Lionel H.	Vancouver
Nelson, Edgar H.	North Battleford, Sask.	Sanders, John L.	Prince George
NeMetz, Phyliss R.	Vancouver	Sankey, Gerald R.	Vancouver
Nevison, James H.	Vancouver	Savitsky, Sonia	Mt. Lehman
Newman, Barbara	Vancouver	Scott, Beatrice M.	Vancouver
Newton, June	Vancouver	Scott, Norma MacD.	Vancouver
Noble, Dave A.	Vancouver	Seivewright, Pamela McL.	Vancouver
North, George A.	Vancouver	Seyer, John F.	Vancouver
*Oakes, Lila M.	Vancouver	Shaw, Selma L.	Duncan
Obokata, Arthur	Vancouver	Shelton, Sidney	Vancouver
Onlee, Lilac L.	Chilliwack	Shewan, Robert G.	Burnaby
Orchard, Ethel J.	Vancouver	Shillabeer, John A.	Wetaskiwin, Alta.
Otsuki, Juko	New Westminster	*Shkwarok, William F.	Castlegar
Oughtred, William T.	Chapman Camp	Sholund, Alvin L.	Kimberley
		Sinclair, Eleanor W.	Cloverdale
		Sinclair, R. Mead	Vancouver
		Skelhorne, Gordon P.	Vancouver
		Slater, Mary A.	Vancouver

*Conditioned.

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

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Smith, Herbert S.....	Vancouver	Walker, Phyllis M. S.....	Vancouver
Smith, Jean M.....	New Westminster	Wall, Muriel N.....	Vancouver
Smith, Margaret H. McC.....	Vancouver	Wallace, Betty.....	Vancouver
*Snaddon, Andrew W.....	Calgary, Alta.	Wallace, Jessie M.....	Vancouver
Southin, Eleanor W.....	Vancouver	Wallace, Robert B.....	Lethbridge, Alta.
Sparks, John E.....	Vancouver	Wallis, Jeanie F.....	Shanghai, China
Spears, Dorothy H.....	Vancouver	*Ward, Everett G.....	New Westminster
Sproule, Walter J.....	Vancouver	Wardroper, W. Kenneth	
Spry, Franklin R.....	Vancouver		Cowichan Station
Stephen, Thomas M.....	Vancouver	Warne, Robert M.....	Peterborough, Ont.
Stevenson, Theodore K.....	Vancouver	Warner, Mary E.....	Vancouver
Stewart, William E.....	Vancouver	Waters, William J.....	Vancouver
Stiell, Will M.....	Kelowna	Watkins, Carolyn K.....	Vancouver
*Stoess, Charles T.....	Vancouver	Watson, Wilfred.....	Duncan
Sutton, Douglas M.....	Vancouver	Weaver, William A.....	West Vancouver
*Sutton, Edward A. B.....	Rossland	Webber, Stuart C.....	Vancouver
*Swinton, A. Hans.....	Vancouver	*West, William D.....	New Westminster
*Swinton, William A.....	Vancouver	*White, Frances C.....	Townsend, Mont.
*Tait, Jean W.....	Vancouver	White, Sadie M.....	Vancouver
Tarrant, E. Henry.....	Vancouver	*Widdess, Edward H.....	Vancouver
Tatroff, Daniel P.....	Vancouver	Williams, Clara L.....	Calgary, Alta.
Teager, William A.....	Vancouver	*Wilson, George A. C.	
Telfer, Gwendolyn D.....	Vancouver		New Westminster
Temoin, Bernard C.....	Vancouver	Wilson, Neil L.....	Vancouver
Thomson, Helen.....	Vancouver	Witter, Beverly M.....	Vancouver
Tindle, Muriel A.....	Vancouver	Woo, Anne M.....	Vancouver
*Touhey, Thomas B.....	Eritannia Beach	Wood, Betty R.....	Vancouver
*Touhey, William B.....	Eritannia Beach	*Wood, Dudley H.....	Vancouver
Troup, Irene J.....	Vancouver	Wood, George.....	Vancouver
Tucker, Norma McC.....	Welwyn, Sask.	Wood, Juanita E.....	Vancouver
Tuddenham, Norman G.....	Vancouver	Woodman, Thomas.....	Vancouver
*Twiss, Mary H.....	Vancouver	*Woods, John R.....	Vancouver
Twizell, Margaret S.....	Vancouver	*Woollard, Eleanor G.....	Vancouver
Uglov, Elizabeth R.....	Vancouver	Wright, M. Marjorie.....	Vancouver
Underhill, Isabella G.....	Vancouver	Wybourn, Edbrooke S.....	Vancouver
Uyeda, Mariko.....	Vancouver	*Wyles, Thelma J.....	Vancouver
Vaughan, David L.....	Vancouver	Yip, Cecil E.....	Vancouver
*Walker, Claude E.....	Vancouver	Young, Honoree G.....	Burnaby
Walker, Goldie E. C.....	Vancouver	Young, Thomas McL.	
*Walker, K. Joan.....	Vancouver		West Summerland

COMMERCE—SECOND YEAR

Annand, J. Duff.....	New Westminster	*Horton, Kenneth G.....	Vancouver
*Asselstine, James W.....	Victoria	Hudson, William H.....	Vancouver
Barton, Arthur S.....	Vancouver	*Hume, Douglas D.....	Vancouver
Beale, Stanley.....	Vancouver	Kawahara, Hideo.....	Kelowna
Beddome, Anne C.....	Vernon	Keller, Cornelius W.....	Vancouver
Blunt, Joyce E.....	Nanaimo	Lawrie, Frank D.....	Vancouver
*Bollans, Frank L.....	Banff, Alta.	*Lloyd, Molra C.....	Vancouver
*Brett, Cecil C.....	Vancouver	Logan, Kenneth T.....	Cowichan Station
Brown, G. Gordon.....	Haney	Lyons, Ronald S.....	Vancouver
Carmichael, H. Angus.....	Vancouver	Maloney, Douglas W.....	Vancouver
*Cantell, E. Thomas		Mann, William T.....	Vancouver
	New Westminster	Matheson, Alexander M.	
Clark, Kenneth P.....	Ioco		New Westminster
Clugston, Beatrice A.....	Vancouver	Mathewson, Peter S.....	Vancouver
Cotterall, Charles L.....	Vancouver	Mercer, William M.....	Vancouver
Cromie, Peter E.....	Vancouver	Morrison, J. Lee.....	Vancouver
Francis, Ida C.....	Vancouver	Morritt, Jack B.....	Vancouver
*Gilmour, William A.....	Vancouver	Morrow, Margaret E.....	Vancouver
*Gourlay, John L.....	Vancouver	McBride, Kenneth G.....	Nelson
Goyer, Gertrude E.....	Vancouver	MacDonald, Donald J.	
Grigg, Vernon H.....	Vancouver		West Summerland
Hall, Hugh U.....	Vancouver	McDonald, Gordon S.....	Vancouver
*Hanbury, Paul K.....	Monte Lake	*McDonald, Ian W.....	New Westminster
Hill, Clifford J.....	West Vancouver		

*Conditioned.

COMMERCE—SECOND YEAR—(Continued)

Name	Home Address	Name	Home Address
MacDonald, W. H. Kennedy	Vancouver	Robinson, Eric W.	Britannia Beach
MacGowan, Kenneth O.	New Westminster	Roussel, David M.	Agassiz
McMaster, William J.	Vancouver	Scott, J. C. Melvin	Vancouver
*Orr, Thomas F.	Vancouver	Shigel, Hideo	Vancouver
*Paisley, John K.	Vancouver	Smedley, Jack V.	Vancouver
Pao, Gerson S.	Vancouver	Stinson, James C.	Vancouver
Perry, Keith O.	Vancouver	Thompson, W. Harold	Moose Jaw, Sask.
Physick, Morris C.	Vancouver	*Walkem, Charles A.	Vancouver
Pickford, John W.	Victoria	*Walker, John A.	Vancouver
Pidgeon, Edward	Vancouver	Wallace, Philip	Vancouver
*Pidgeon, Frank H. B.	Vancouver	Whyte, Robert S.	Vancouver
Punter, William F. G.	Vancouver	Wilson, James H.	Vancouver
		Winram, Edna E.	Vancouver

FACULTY OF ARTS AND SCIENCE—THIRD YEAR

*Adams, John R.	Vancouver	*Donnelly, Charles W.	Vancouver
Alexander, Athena	Victoria	Duncan, Donald G.	Vancouver
Arai, Kimimichi	New Westminster	Eckardt, Jean	Vancouver
Armstrong, Jean E.	Creston	Edmonds, David F. D.	Vancouver
Armstrong, John J.	Victoria	Edward, Joan C.	Mount Royal, P. Q.
Askew, William E.	Moose Jaw, Sask.	Ellis, David W.	Vancouver
Augustine, Kathleen	New Westminster	Ellis, Dorothy I.	Vancouver
		*Ellis, Phyllis E.	Vancouver
Barnett, Margery L.	Vancouver	Evans, Harry MacD.	Duncan
Bartlett, Phyllis L. M.	Vancouver	*Ewing, J. Kenneth	Vernon
*Bell, Alice	Capilano	Ewing, Margaret L.	Vancouver
Bell, G. Douglas	Vancouver	Eyles, Marianne A. D.	Vancouver
*Bertram, Francis E.	Vancouver	Ferguson, William C.	Vancouver
*Bingham, W. John	Vancouver	Fierheller, Gordon M.	Vancouver
Bishop, George D.	Victoria	Finch, Marguerite L.	Penticton
Bishop, Harry E.	Vancouver	Finlayson, Anna Ruth	Vancouver
Bonner, Robert W.	Vancouver	†Fisher, Harold E. B.	Prince Rupert
*Bowering, Ebbie	Vancouver	Fleming, Kelvin O.	Vancouver
Brown, Ellen L.	Vancouver	Fothergill, Amy H.	Vancouver
*Brown, F. Margaret	Cloverdale	Fowle, Charles D.	Vernon
Brown, Irene R.	Vancouver	Fowler, Frances	New Westminster
Browning, George V.	Victoria	Frith, Austin F.	Vancouver
Bulgin, M. Minta	Vancouver	Galloway, John G.	Duncan
Burney, Jean E.	New Westminster	Gardiner, William M.	Vancouver
*Butler, Irene E.	Vancouver	George, Margaret S.	Vancouver
Campbell, Mary I.	Vancouver	Goldman, Florence R.	Edmonton, Alta.
Carey, N. Patricia	Vancouver	Gordon, Stanley VanA.	Vancouver
*Carter, Eileen V.	Vancouver	Graham, Aileen F.	Victoria
Cawley, Sheila F.	Victoria	Greene, Thomas E.	Vancouver
*Charters, John A.	Vancouver	Gross, Edward	Vancouver
*Chatwin, Leonard W.	Vancouver	Gunn, J. Struthers	Vancouver
Chetkow, Geraldine	Vancouver	Hackney, Amy L.	Rosslund
Ciccone, Leo D.	Vancouver	Haggart, Margaret M.	Vancouver
*Clarke, Chummer B.	Vancouver	Hammond, Gwendolin M.	Vancouver
*Clery, Patrick M.	Parksville	Hammond, Paul L.	Vancouver
Cleveland, Edward M. D.	Vancouver	Hanson, Don McK.	New Westminster
Coleman, William A.	Vancouver	*Hardwick, Beatrice	Eburne
*Collins, Thomas LeG.	Vancouver	Harry, Kenneth F.	Port Hammond
Corbould, Betty H.	Kamloops	Hebb, Elizabeth	Vancouver
*Coutts, James W.	New Westminster	*Henderson, Doreen	Vancouver
Crute, Arthur H.	North Vancouver	Hewett, Margaret H.	Victoria
Cull, R. Joyce	Victoria	Hoggan, Isabel	Vancouver
Cunningham, Margaret A.	Vancouver	Holmes, Gwendolyn A.	Vancouver
*Curry, Robert M.	Vancouver	Hood, James A.	Vancouver
Darling, Denise	Vancouver	*Hooper, W. Cameron	Princeton
Dawe, Frank H.	Capilano	*Horne, Harry J.	New Westminster
DeBeck, Nedra M.	Victoria	*Howleson, Margaret	South Fort George
Delamont, Mervyn W. H.	Vancouver		
Delany, Austin	Vancouver	*Jeffries, James G.	Vancouver
Dewdney, Edgar	Penticton	*Johnson, Victor R. L.	Hollyburn
Donaldson, William	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>
Johnston, Donald W.	Vancouver	Ogilvie, Alfred L.	Vancouver
Johnston, Shirley K.	Vancouver	O'Neill, Albert N.	Prince Rupert
Joiner, William M.	Vancouver	Paton, Archibald T.	Vancouver
Jones, Audrey L.	New Westminster	*Paul, Rachel M.	Vancouver
Kidd, James McL.	Vancouver	Pearse, Allen F.	North Vancouver
Kirkpatrick, Margaret E.	Nelson	Phillips, Mary E.	Vancouver
Krausse, Walter	Vancouver	Poulton, Sidney A.	Britannia Beach
*Lapp, Gustavus S.	Redcliff, Alta.	Primrose, Neil	Vancouver
*Larsen, Anthon A.	Cloverdale	Proud, Geraldine	Beaver Lodge, Alta.
*Lawrence, Frank T.	Vancouver	Ralston, H. Keith	Victoria
Leacy, Francis H.	Victoria	Reid, William D.	Victoria
Lennie, Doris C.	Vancouver	Ritchie, David M.	Vancouver
Lennie, Margaret L.	Vancouver	Rivers, David E.	Vancouver
*Long, Elizabeth G.	Vancouver	Robertson, Jean A.	Vancouver
*Lynn, Margaret S.	Calgary, Alta.	*Robinson, Doramay	
Mannix, Luella	Vancouver	Robinson, Marian	New Westminster
Margeson, John M. R.	Trail	Ross, R. Gordon	Esquimalt
Martinoff, Ivan	Steveston	Rowell, Florence V.	Nanaimo
Matheson, Claudia	Vancouver	Ruardi-Wichers, Maria W.	Vancouver
*Matheson, Daniel J.	Vancouver	*Rushworth, Eileen	Calgary, Alta.
Matthew, Beverley R.	Vancouver	Ryan, Doreen E.	Victoria
Mayne, Thomas W.	Victoria	Ryan, John G.	Nanaimo
Menzies, M. Albert	Vancouver	†Sendall, George E.	Vancouver
Meredith, Olive M.	Vancouver	Shaw, Dorothy A.	Victoria
Meredith, Thomas W.	Vancouver	*Sheeley, Ralph G.	Mission City
Monkman, Dorothea	Camp Creek, Alta.	Sherwood, Clare T.	Vancouver
Morris, Dorothy R. A.	New Westminster	Shimo-Takahara, Katherine S.	Vancouver
Morris, Joan I.	North Vancouver	Shinobu, Roy	Vancouver
Morris, Robert J. D.	Nelson	Shortreed, Grace	Burnaby
Morton, Betty H.	New Westminster	Sillers, Jean E. M.	Stowlea, Sask.
Munro, Elspeth	Vancouver	*Sinclair, Lister S.	Bombay, India
Murdoch, A. Jane M.	Vancouver	Skinner, Louise McM.	Vancouver
Murphy, Marion E.	Vancouver	Sleath, G. Edward	New Westminster
*Murray, Robert N.	Yahk	Smith, Barbara E.	Vancouver
*Muttart, Mary	Vancouver	*Snyder, Russell P.	Fisherman's Cove
McArthur, Herbert E.	Vancouver	Spencer, Barbara E.	Vancouver
McCarthy, M. Frances	Campbell River	Stamatis, Dorothy M.	Vancouver
McClory, Margaret I.	New Westminster	Sturdy, Donald D.	Vancouver
*McDiarmid, Betty M.	Vancouver	Sugarman, Lester C.	Vancouver
McDonell, Dorothy M.	Vancouver	Sullivan, Constance M.	Victoria
McEachern, Florence I.	Vancouver	Sutherland, Ernest J.	Vancouver
MacEwan, William R.	Vancouver	Swoboda, Joseph S.	Matsqui
*McGhee, William P. T.	Port Alice	Takeda, Hiroshi	Woodfbre
MacKay, Shella T.	Peachland	Takimoto, Kimiko	Vancouver
McKenzie, George J.	Victoria	Thomas, George P.	Vancouver
McKenzie, Lloyd G.	Victoria	Thomas, J. P. Wallace	Vancouver
*MacKenzie, Roderick D.	Vancouver	Thomson, Dorothy	Vancouver
McKinlay, John	Vancouver	*Thurston, Audrey E.	Chilliwack
McLagan, Muriel G.	Vancouver	Tompkins, Dorothea M.	Calgary, Alta.
*Maclean, Charles A.	Vancouver	Townsend, John A.	Vancouver
*McLean-Bell, Janet M. G.	North Vancouver	*Trenholme, Amy V.	Vancouver
McLeod, R. Raymond	Rossland	Tweed, Lorna G.	Vancouver
McLorg, Mary A.	Vancouver	Underhill, Anne B.	Vancouver
McMichael, Gladys E.	Vancouver	*Urquhart, Alex N.	Vancouver
McMillan, Jack L.	Vancouver	Venini, Mary J.	Vancouver
McNeal, Roderick O.	Maryville, Mo.	*Vernon, E. Kenneth	Hollyburn
*McNeely, Charles J.	Vancouver	Walker, Douglas L.	Vancouver
*McPherson, Douglas C.	Vancouver	Wallace, W. Spencer C.	New Westminster
*Neil, Kingsley C.	Vancouver	*Warner, Harry L.	Eburne
Nichols, David R.	Vancouver	Warrack, Beryl E.	Ladner
Nichols, Edward M.	Rossland	Watts, Mildred F.	Ladner
Nicholson, Lois A.	Vancouver	Webb, Eva	New Westminster
Nissen, Hansi	Vancouver	Westwood, Mary J.	Vancouver
Noguchi, Kiichi	Vancouver	*Wismer, Shirley	Vancouver
Oastler, John W.	Vancouver	Wong, John G. S.	Victoria
		*Woodcroft, Helen	Victoria

*Conditioned.

†Partial.

COMMERCE—THIRD YEAR

Name	Home Address	Name	Home Address
Adam, Joseph	Victoria	Menchions, Robert G.	Vancouver
Almas, D. James	Vancouver	Moxon, John O.	Vancouver
Ashworth, Frances E.	Invermere	McBride, W. Edward	Vancouver
Atkin, Mary F.	Vancouver	McCall, Graham E.	Victoria
Barrie, Edward J.	Vancouver	Macfarlane, Gordon B.	Vancouver
Beaumont, Leys M.	Vancouver	McMahon, M. Patricia	Vancouver
Brownell, J. Ross	Vancouver	MacQuarrie, Alexander B.	Vancouver
Bryson, Gerald S.	Victoria	Namba, Akira	Haney
Bushell, Norman F.	Vancouver	Naylor, Joseph	Vancouver
Clugston, Jean E.	Vancouver	Nose, Roy H.	Vancouver
Cox, Jane E.	Rossland	Okuno, Shigekazu	Vancouver
Curwen, Guy R. L.	Chilliwack	Parfitt, Arthur E.	Victoria
Davies, Evann	Vancouver	Perry, Lorne G.	West Summerland
Daykin, Victor A.	Vancouver	Porter, Robert K.	Vancouver
Eaton, Arthur R.	Vancouver	Rose, Robert H. M.	Vancouver
Ellis, Robert L.	Vancouver	Rumball, Dale L.	West Summerland
Hall, Ormonde J.	Vancouver	Sasaki, Frederick Y.	Vancouver
Harper, David A.	Victoria	Selkirk, Lorris E. N.	Tranquille
Hughes, P. Elizabeth C.	Penticton	Shiozaki, David F.	Vancouver
Korsch, Leonard S.	Vancouver	Teagle, Ernest E.	Vancouver
Livingston, Gordon A.	Vancouver	†Tuck, Montague D.	Vancouver
Lyle, Donald F. H.	Vancouver	Wallace, Gordon G.	Vancouver
Mahood, Brian H.	Chilliwack	Wilson, George C.	Cloverdale
Mathieson, Jack R.	Kamloops	Wuest, W. Elmer	Stettler, Alta.
Melvin, James T.	Vancouver	Yamashita, George S.	Vancouver

FACULTY OF ARTS AND SCIENCE—FOURTH YEAR

*Aicken, Alex C.	Vancouver	Coady, Teresa J.	Vancouver
*Allan, John A.	Victoria	Cochrane, Joseph S.	Victoria
Allan, William M.	Victoria	Colwell, Bryan C.	Port Simpson
Archibald, Douglas North	Vancouver	Combolos, Theodora	Vancouver
Ashby, M. Joan	Harrop	Cools, Evelyn M.	Okanagan Centre
*Badger, Elizabeth McN.	Vancouver	Cooper, William D.	Calgary, Alta.
Bain, Archibald C.	Vancouver	Cowan, Maisie E.	Vancouver
Ball, Enid D.	Penticton	Cowan, T. Archibald	Vancouver
Barclay, William R.	Vancouver	Cox, Lionel A.	Victoria
Barton, Norman	Vancouver	*Crone, Thomas H.	Vancouver
Beale, Mary L.	Vancouver	Crute, Margaret C.	North Vancouver
Beaton, Mary	Vancouver	Cunningham, David K.	Victoria
Bennett, Gordon J.	Capilano	Cushing, Jean L.	Vancouver
Berton, Pierre F.	Vancouver	Daniels, Dorothy M.	New Westminster
Bibbs, Patricia G.	Vancouver	†Dashwood-Jones, Edmund	New Westminster
Bolduc, Betty D.	Vancouver	Daunt, Acton	New Westminster
Boyd, Annetta McT.	Vancouver	Davidson, Robert J. H.	Vancouver
†Brown, R. Keith	Langford	Dearing, Ina	Burnaby
Brown, Victoria J.	Vancouver	Delany, Mary	Vancouver
Browne, Edith M.	Vancouver	Dellert, Gunhild H.	Kimberley
Bruce, Joan I.	Vancouver	Desjardins, Pit U.	Vancouver
Bruce, Nancy L.	Vancouver	Devlin, Budd J.	Vancouver
*Buckland, Donald C.	Vancouver	Dier, Ormond W.	Vancouver
Bunnell, Grace E.	Vancouver	Dixon, Harold F.	Victoria
Burgess, Margaret A.	Vancouver	Dobson, G. Norma	Vancouver
Caldwell, I. Frances North	Vancouver	*Docker, Geraldine P.	Invermere
Campbell, William E.	West Vancouver	Drysdale, Alistair J.	Vancouver
Carr, Nancy	Vancouver	Duncan, Marjorie E.	Vancouver
Carter, Joyce G.	Vancouver	Dunlop, Elizabeth	Vancouver
Carter, Nesta A.	Vancouver	*Emerson, Bruce E.	Vancouver
Cavers, James K.	West Vancouver	English, Moira L.	Vancouver
*Cawley, Amy V.	Victoria	Evans, Maureen E.	Colquitz
Charter, Harold R.	Vancouver	Ewen, John S.	New Westminster
*Child, Colin G.	West Vancouver	Fairleigh, Constance M.	Vancouver
Christie, R. George	Royston	Ferries, Beulah E.	Vancouver
Clark, Alexander	Kamloops	Filmer-Bennett, Gordon	Vancouver
Clark, Edna J.	Trail	Finlayson, Jean K.	Okanagan Landing
Cliff, Harold N.	Vancouver		
Cline, Richard E.	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>
Fleishman, Neil M.	Vancouver	Mitchell, Ardis L.	Vancouver
Fletcher, Johnson K.	Hatzic	Momose, Kiyooki C.	Vancouver
Foster, Franklyn	Nanaimo	Morris, Joyce K.	Penticton
*Foster, Raymond E.	Vancouver	Morris, Margaret C.	New Westminster
Fouks, Arthur	Vancouver	*Mottley, W. Douglas	San Francisco, Calif.
Freeman, Victor J.	Vancouver	McCammion, Dorothy	Burnaby
Fretwell, Harold R.	Vancouver	McCLean, Frances A.	Vancouver
Frith, Norma C.	Vancouver	McCully, Dorothy A.	Moose Jaw, Sask.
Frost, Ethel I.	Vancouver	MacDermot, Derek H. A.	Vancouver
Fulton, Rupert	Prince Rupert	*MacDonald, Helen M.	Nanaimo
†Gale, Robert A.	Port Alberni	MacDonald, John C.	Victoria
Gardiner, Valerie	Vancouver	Macdonald, Margaret H.	Nanaimo
Gathercole, Patricia M.	Vancouver	McDonnell, Eileen J.	Vancouver
*Gillespie, Wallace North	Vancouver	MacInnes, G. Elizabeth	North Vancouver
Gillie, Bernard C.	Victoria	MacKay, Hector R.	Vancouver
Glen, John E.	Vancouver	McKay, Katherine M.	Vancouver
*Glen, Mary E.	Vancouver	MacKenzie, A. A. Jean	Vancouver
Grace, Alice M.	Vancouver	*McKenzie, Colin	Victoria
Grand, William H.	Chilliwack	MacKenzie, Verna C.	Vancouver
Graves, Marie F.	Trail	McKinnon, Elaine K.	Vancouver
Hauger, Alice C.	Dawson Creek	McLeod, Ellis L.	Vancouver
Hawkes, Arthur S.	Victoria	McMorran, A. Stewart	Vancouver
*Hawkins, Dorothy I.	Vancouver	†McQueen, Donald R.	Vancouver
Henderson, James	Vancouver	MacSween, Alan J.	North Vancouver
Henderson, Mary E. P.	Cloverdale	Nash, Andrew J.	Vancouver
Henry, John M.	Vancouver	Newby, M. Eileen	Vancouver
Herd, Ben C.	New Westminster	Nichols, Alva E.	Vancouver
Hewitt, Gordon B.	Vancouver	Nicol, Eric P.	Vancouver
Heyer, E. Ruth	Vancouver	Nikaïdo, Harry	Vancouver
Higgins, Mary P.	Victoria	Nowlan, Helen L.	Vancouver
Hird, Dorothy M.	Vancouver	Oldfield, H. J. Herbert	Royal Oak
Holyoke, Frederick V.	Stillwater	Osborne, William M.	Medicine Hat, Alta.
*Hooley, E. Eileen	Vancouver	Ozeroff, William J.	Shoreacres
Hopwood, Victor G.	Vancouver	Parizeau, Paul H. D.	Victoria
*House, Frederick W.	Vancouver	Parks, John	Burnaby
†Howard, Gerald V.	Vancouver	Physick, Arthur T. J.	Vancouver
Izen, Benjamin	Vancouver	Pickering, Eunice F.	Vancouver
*Jack, Marjorie H.	Hatzic	*Pon, Lemuel	Vancouver
Kato, Kiyoshi	Vancouver	Proven, Anna M.	Vancouver
Kawaguchi, Hiroshi	Cumberland	Pullen, M. Elizabeth J.	Vancouver
Kemper, F. Dean	Britannia Beach	Purdy, James E.	Victoria
†Kennedy, W. Campbell	Nanaimo	Randall, Lillian M.	Powell River
Kerr, Donald P.	Vancouver	Reifel, Audrey M.	Vancouver
*Kilbank, Sidney C.	Vancouver	Riddell, Marjorie E.	Victoria
*Kloepfer, Jacqueline	Vancouver	Ridland, Margaret E.	New Westminster
Knox, Ruth J.	Vancouver	Robinson, Thomas J.	New Westminster
Lamont-Havers, Ronald W.	Vancouver	Roddan, Andrew	Vancouver
*Lane, George	North Vancouver	Sage, F. Margaret	Vancouver
Laronde, Harry D.	Crescent	Schofield, Mary-Lenore	Vancouver
*Latimer, Edgar C.	New Westminster	Scott, Hazel D.	Vancouver
LeBlanc, Renee M.	Vancouver	Scott, Robert W.	Alberni
Lepsoc, Gunnar	Tadanac	Seldon, Ruth McL.	Vancouver
Lowe, Margaret	Victoria	Shannon, Barbara J.	Vancouver
Mackie, William H.	Vancouver	Sheffield, J. Owen	Vancouver
Mainguy, James W.	Duncan	Shimo-Takahara, George	Vancouver
Manders, Ernest C.	Vancouver	*Sloan, W. Russell	Vancouver
Marchanton, Eileen O.	Vancouver	Smith, Nancy Mack	Vancouver
Margetts, Edward L.	Trail	Southin, Adrienne R.	Vancouver
*Marples, E. Geoffrey	Invermere	Thomas, M. Elizabeth	Vancouver
Martin, Nancy B.	Vancouver	Thomson, Frances B.	Vancouver
†Mathews, W. Warren	Vancouver	Thomson, G. A. Victor	Victoria
Mattu, Ranjit S.	Vancouver	Thomson, Jean I.	Kimberley
*Meighen, Molly	Kamloops		
Meredith, John R.	Victoria		
Metford, L. Jacques S.	Salmon Arm		
Middleton, Frederick T.	Vancouver		
Minichiello, Armando P.	Vancouver		

*Conditioned.

†Partial.

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

Name	Home Address	Name	Home Address
Thomson, Vivian D.	Vancouver	Weir, Thomas R.	Vancouver
Todd, Douglas	Vancouver	Weldon, Josephine W.	Vancouver
Tonks, David B.	Vancouver	Wellington, William G.	Vancouver
*Truscott, Leonard G.	Nelson	*West, John G.	Vancouver
Twiss, Mildred A.	Vancouver	Westlake, Dorothy	Taber, Alta.
Usher, Marjorie V.	Vancouver	White, Barbara M.	Vancouver
Vance, John R. B.	Vancouver	Williams, Thomas C.	Vancouver
Vesterback, Brita H.	Aldergrove	Wilson, L. Roberta	Vancouver
Walker, Janet C.	Haney	Wilson, Richard A.	Vancouver
*Wallace, A. M. Frances	Victoria	Wilson, Ruth P.	Vancouver
Walton, Rhoda	Victoria	Wood, John E.	Penticton
Warden, Vida M.	Vancouver	Woodside, Lloyd A.	Vancouver
Watanabe, Satoru	Vancouver	*Worthington, Elizabeth L.	Vancouver
Watt, Douglas C.	Hollyburn		
Webb, Frances E.	Vancouver	Yip, Kew D.	Vancouver
Webber, Patricia	Victoria		

COMMERCE—FOURTH YEAR

Aoki, Tetsuo	Vancouver	Lumsden, Harold D.	Vancouver
Armstrong, E. Geraldine	Vancouver	McArthur, James A.	Victoria
Byers, Archie McA.	Vancouver	McEwen, Jack H.	Vancouver
Cameron, James G.	Victoria	MacFayden, Robert D.	Vancouver
Chan-Kent, Robert	Vancouver	*MacRae, Alexander J.	Caulfield
Clark, Robert M.	Vancouver	McTavish, Peter J.	Vancouver
Clark, Sidney H.	Prince George	Pendleton, Frank H.	Red Gap
*Crawford, John A.	Vancouver	Powell, George E.	Summerland
Cuthbert, Grace I.	Webster's Corner	Robertson, David J.	Victoria
*Dale, Harold E.	Vancouver	Ross, Lloyd G.	Aldergrove
desBrisay, Helene	Vancouver	Sanmiya, Tatsuo	Vancouver
Filteau, John F.	Calgary, Alta.	*Tanabe, Luke Y.	Vancouver
Fournier, Lionel J.	Pincher Creek, Alta.	Townsend, Eric A.	Victoria
Gitterman, Sidney L.	Vancouver	†Turley, Frank M.	Victoria
Harmer, James C.	Vancouver	*Turnill, Eric S.	Vancouver
Harvey, Ernest C.	Vancouver	*Van Houten, C. William	Vancouver
*Hayward, Chester G.	Kamloops	Weldon, Charles C.	Grenfell, Sask.
Kennedy, Ernest F.	Vancouver	Wiley, Rudolph C.	New Westminster
Kirby, George H.	Nelson	Winslow, Barbara P.	Victoria
Lui, Chak F.	Vancouver	Yamada, Fujiyoshi	Vancouver

FACULTY OF ARTS AND SCIENCE

GRADUATES

Abbott, Harley D.	White Rock	Cobbett, Douglas W.	Victoria
Abercrombie, William T.	Vancouver	Davidson, Gordon A.	Vancouver
Aberdeen, J. Frederick	Eburne	Dee, Henry D.	Victoria
Aldous, John G.	Victoria	Elliott, Philip L.	Vancouver
Anderson, Arthur L.	Cumberland	Elmes, Walter H.	Nelson
Ashford, Walter R.	Vancouver	Farenholtz, William	Nelson
Bailey, Stanley J.	Vancouver	Farquhar, Kathleen E.	New Westminster
Baker, Donald C. B.	Vancouver	Ferguson, George	Chemainus
Baker, Kathleen M.	Nanaimo	Ferris, Robert J.	Vancouver
Barker, Amy	Vancouver	Fisher, Herbert E.	Vancouver
Bastin, Hilary D.	Victoria	Freed, D. Mary	Vancouver
Bell, Robert E.	Ladner	Freeland, Gertrude L.	Vancouver
Bereskin, Louis L.	Winnipeg, Man.	Frith, Elizabeth A.	Vancouver
Bishop, Ernest L.	Victoria	Fulton, Clarence O.	Vernon
Boardman, Harold	Kimberley	Gaddes, William H.	Kelowna
Boroughs, Robert J.	Vancouver	Gardner, Joseph A.	Nakusp
Brown, James B.	Vancouver	Gilbert, William D.	Sechelt
Bruce, Graham	Vancouver	Godson, Warren L.	Victoria
Buchanan, Dorothy A.	New Westminster	Grant, John D.	Victoria
Buchanan, T. Donald	Vancouver	Grassie, Vernon R.	Duncan
Bunyan, Donald E.	Nelson	Gurney, William H.	Kamloops
Bush, Irene B.	Kelowna	Haines, A. Roy	Victoria
Chang, Helen	Vancouver	Hebbon, William C.	Vancouver
Clague, John E.	Vancouver	Hedde, Rognvald D.	Victoria

*Conditioned.

†Partial.

GRADUATES—FACULTY OF ARTS AND SCIENCE—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Hodson, Reginald	Duncan	Pillsbury, Richard W.	Vancouver
Hogarth, David M.	Nanaimo	Pooley, Alfred G.	Vancouver
Hutchinson, Sheila H.	North Vancouver	Purves, Margaret R.	Powell River
Idyll, Clarence P.	New Westminster	Reid, Adam	Newton
Ignatieff, Leonide	Shawnigan Lake	Riddehough, Geoffrey B.	Vancouver
Kerr, Edna L.	Ladner	Roper, William J.	Vancouver
Kerr, S. Aubrey	Vancouver	Rothstein, Maurice	Vancouver
Kincade, Robert M.	Vancouver	Sandall, M. Elizabeth	Westfield Centre, N. B.
King, Roy	North Vancouver	Sanderson, Thomas J.	New Westminster
Lamb, Bessie	Vancouver	Shaw, Kenneth N. F.	North Vancouver
Lee, Ernest	West Vancouver	Shephard, Alfred H.	Vancouver
Lew, Hin	Vancouver	Simpson, Robert E.	Vancouver
Lloyd, Denys C.	Duncan	Sims, E. Scott	Vancouver
Lunde, Magnus	Trail	Sloat, Frank F.	New Westminster
Lyttleton, Hugh A.	Vancouver	Smith, Clyde McK.	Vancouver
Margetts, Philip G.	Trail	Smith, David B.	Nelson
Marshall, J. Kelso	Vancouver	Sparks, Jack	Vancouver
Mason, Gerald	West Vancouver	Stevenson, Alan M.	West Vancouver
Mattice, Clarence R.	Princeton	Stewart, E. Campbell	Wells
Melvin, W. Breen	Vancouver	Taylor, Frederick H. C.	Kelowna
Miller, Cathalin I.	Vancouver	Thorsteinsson, Berg	Powell River
Milley, H. Reginald	Vancouver	Thwaites, John B.	Vancouver
Mitchell, Leonard	Vancouver	Todd, Marjorie D.	Vancouver
Mitchell, William H.	White Rock	Turnbull, Doris H.	Vancouver
Mizuhara, Shaw J.	Vancouver	Turner, David B.	Vancouver
Mooney, Alvin W.	Vancouver	Turner, Gordon H.	Vancouver
Moyls, Benjamin N.	Vancouver	Vick, Edgar B.	Vancouver
Munro, Marjory H.	Marigold	Waddell, David B.	Victoria
Murphy, Mary	Vancouver	Waites, Kenneth A.	Vancouver
Murphy, Stanley A.	Britannia Mines	Wallace, Lawrence J.	Duncan
McCabe, H. John	Victoria	Williams, Maud A.	Vancouver
McCarter, John A.	Vancouver	Wilson, Joy G. P.	Vancouver
McDiarmid, Ian H.	Vancouver	Wilson, Reginald A.	Vancouver
Macdonald, Alan S.	Vancouver	Woodford, Doreen L.	Vancouver
MacDonald, Wilfred J.	Vancouver	Wright, Kenneth W. T.	New Westminster
McGuire, J. Carson	Chilliwack	Wylie, Stewart	New Westminster
MacKenzie, Glenn L.	Vancouver	Young, J. Gordon	Vancouver
McLauchlan, Thomas A.	Chemainus	Yu Pei, C.	Shanghai
McLauchlin, John S.	Victoria		
McLees, Hazel M.	Vancouver		
Newton, Theodore D.	Vancouver		
Pepper, James M.	Victoria		
Pepper, Thomas P.	Victoria		

SOCIAL WORK

Anderson, Jean V.	Vancouver	Matheson, John P.	Vancouver
Balfour, Elizabeth M.	Vancouver	Sadler, Evelyn E.	Vancouver
Bell, Florence L.	Vancouver	Seldon, Janet L.	Vancouver
Bennest, Jean F.	Summerland	Skae, Kathleen	Vancouver
Bradley, Eleanor J.	Vancouver	Spence, Isabel M.	Moose Jaw, Sask.
Bremner, Moira C.	Vancouver	Stevenson, Helen M.	Vancouver
Christie, Hugh G.	Vancouver	Stott, Isabel G.	Vancouver
Fleming, Marion K.	Vancouver	Thomas, Malgwyn E.	Vancouver
Foster, Marion E.	Calgary, Alta.	Trapp, Nell K.	New Westminster
Fraser, Emily A.	Vancouver	Vincent, Honor E.	Peachland
Freethy, Eveline	Vancouver	Whitelaw, Margaret E.	Vancouver
Kirkendale, Rae	Victoria	Worth, Douglas H.	Vancouver
Lourie, Marianne R.	Vancouver	Wright, Helen L.	Vancouver

TEACHER TRAINING COURSE

Adamson, P. Ray	Victoria	Caydzien, Esme C.	Vancouver
Avis, Barbara L.	Vancouver	Cockburn, George H.	Vancouver
Barton, Edgar C.	Vancouver	Collins, Rosemary R.	Vancouver
Birnie, Elizabeth H.	Vancouver	Davidson, John F.	Vancouver
Borelli, James V.	Fernie	Dickie, A. Gordon	Vancouver
Boyd, Eleanor G.	Vancouver	Doherty, Norah	Vancouver
Busby, Constance I.	Vancouver	Draper, H. Leighton	Vancouver

TEACHER TRAINING COURSE—(Continued)

Name	Home Address	Name	Home Address
Ducklow, Albert J.	Vancouver	MacDonald, June G.	New Westminster
Duncan, Morris R.	Michel	McDonald, Ruth E.	New Westminster
Findlay, Margaret M.	Lake Cowichan	MacEwen, Phyllis J.	New Westminster
Free, Norman S.	Vancouver	McNeill, Margaret T.	Vancouver
Fulton, Mary L.	Mount Lehman	McPhee, Edward I.	Vancouver
Garstin, Lawrence F. H.	Hartell, Alta.	Paul, Arthur B.	Vancouver
Glass, George E.	Vancouver	Pellant, E. Roy	Vancouver
Hann, Helen M. E.	Vancouver	Philpot, Dorothy J.	Cranbrook
Hewitt, Katherine B.	Vancouver	Pullinger, Percy B.	Vancouver
Holdom, Mary W.	Crescent	Pym, Florence C.	Vancouver
Horn, Patricia H.	Vancouver	Quigley, John M.	Vancouver
Humfrey, Frances E.	Vancouver	Ralph, Joyce E.	Vancouver
Johanson, Lillian V.	Vancouver	Rattenbury, John A.	Powell River
Johnston, Jean E.	Vancouver	Ritchie, Shiela R. J.	Vancouver
Jones, Dorothy May	Victoria	Ross, R. Helen	Field
Keatley, Patrick C.	North Vancouver	Rush, Jack T.	Vancouver
Laycock, Gladys A.	North Vancouver	Ryan, Nora	Sardis
Milling, Edith M.	Vancouver	Scott, Pauline I. L.	Vancouver
Moe, John G.	Vancouver	Sherratt, Dorothy M.	Vancouver
Morris, Robert A.	North Vancouver	Sinclair, Evelyn B.	Vancouver
McArthur, Joan R.	Vancouver	Swan, Flora McK.	Nanaimo
Macauley, Archie H.	Vancouver	Thompson, Margaret K.	Vancouver
Macauley, Johnina M.	Vancouver	Warne, John W.	Vancouver
McCaffrey, Audrey E.	Princeton	Weiss, Rose	Vancouver
McCammon, James W.	New Westminster	Wilbur, G. Louise	Vancouver
McDiarmid, Maureen N.	Vancouver	Woodsworth, Bruce	Winnipeg, Man.
		Wright, Irene M.	Vancouver

SECOND TERM ONLY

Carefoot, Garnet L.	Mazenod, Sask.	Philps, Reginald A.	Cadboro Bay, Victoria
McKechney, Averil N.	Carmichael, Sask.	Totten, Eva O.	New Westminster

DIRECTED READING COURSES

Adams, Thomas V.	Sointula	Edmunds, James A.	Britannia Beach
Arland, Elsie	Smithers	Evans, Stanley	Nanaimo
Ayers, John D.	Kelowna	Ferguson, Hugh C.	Campbell River
Barwick, Melvin N.	East Kelowna	Ferguson, Walter	Ladysmith
Beech, Jack E.	West Summerland	Findlay, Ivan W.	Vancouver
Bennett, Thomas E.	Alberni	Ford, Robert	Baldonnell
Bissell, George C.	Oyama	Gilbert, Verdun P.	Nanaimo
Blake, Thomas B.	Vancouver	Goard, Harold D.	Vancouver
Bornais, Lawrence J.	Monte Creek	Gooding, Alfred H.	New Westminster
Braathen, Harold	Cecil Lake	Goodlad, John I.	White Rock
Brisco, George E.	Lumby	Goss, Edward G.	Tranquille
Brynjolfson, Walter C.	Oak Bay	Griffin, George H.	Vancouver
Calver, William H.	Great Central	Grodzki, Leonard	New Denver
Cameron, Margaret	Victoria	Hassard, John I.	Armstrong
Campbell, Hugh M.	Eburne	Hendrickson, Inga C.	Kimberley
Carroll, Clarence S.	Chilliwack	Hill-Tout, Edward A.	McBride
Chatfield, Jack	Cordova Bay, Victoria	Holden, Mollie	Victoria
Clark, Alec F.	Armstrong	Holland, Charles E.	Sayward
Clark, William G.	Mission City	Hutchison, James C.	New Westminster
Cook, Fred G.	Bella Coola	Jenks, Robert	New Westminster
Cook, Gregory C.	Victoria	Johnstone, Laura	Nanaimo
Crellin, W. Sanders	Nanaimo	Jones, Wilfrid C.	Ladysmith
Curtis, Alice M.	Camp Lister	Killip, Grace W.	Vancouver
Curtis, Leonard C.	Vancouver	Kinnear, James K.	Port Alberni
Damen, William W.	Mt. Lehman	Kirk, Marion R. C.	Dewdney
Davidson, William F.	Vancouver	Lawley, Lewis	Abbotsford
Dewar, Myrtle M.	Vancouver	Manson, Nicol B.	Alert Bay
Dorrell, Douglas S.	Port Simpson	Martens, Fred L.	Farrell Creek
Duncan, William S.	Michel		

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

Name	Home Address	Name	Home Address
Maxwell, E. D. Wesley	Vancouver	Shantz, Cecil R.	Vancouver
Moore, Frank H.	Cranbrook	Smith, David J. S.	Abbotsford
Mountain, Wilma	Vancouver	Smith, Donald O.	Burnaby
McAlister, Louise M.	McBride	Smith, Lewis B.	Langford
Macdonald, Joseph V.	Salmo	Stech, John F.	Abbotsford
Macfarlane, A. Lorna M.	Vancouver	Stevens, Gladys E.	Vancouver
McGregor, Marjorie H.	Port Alice	Stewart, J. Ray	Fraser Mills
McKay, Donald H.	Cassidy	Stuart, Walter H.	Rounds
McKenzie, James J.	Victoria	Taylor, George S.	Victoria
MacKenzie, Lloyd D.	Vancouver	Thomas, J. Alan	Vanderhoof
MacLeod, John K.	Vancouver	Tracy, Frank F.	Progress
Nixon, Mary C. E.	Newton	Turnbull, Walter B.	West Vancouver
Nye, Florence M.	Lynn Creek	Tweeddale, Abbott E.	Trail
Orr, John M.	Ashcroft	Wahl, Otto E.	Penny
Ozard, Elmore G.	Vancouver	Walker, Maurice H.	South Sloca
Patterson, Alex. S.	New Westminster	Wallach, J. Jean	Mt. Lehman
Peacock, Gardiner	Mission City	Walmsley, Thomas E.	Trail
Pearson, George E.	Rosedale	Webber, Bernard G.	Osoyoos
Phillips, Alexander J.	Premier	Webster, Harry R.	Newton
Price, Robert	Vernon	Wells, James H.	Red Pass
Pritchard, Frederick C.	Trail	Whittaker, Charles J.	Chilliwack
Pritchard, Hubert D.	Vernon	Wilkie, Gavin G.	Kettle Valley
Pritchard, Vaughan G.	Victoria	Wilkie, Jack C.	Rossland
Richards, Ellinor G.	Vernon	Williams, Lawrence M.	Vancouver
Richardson, Sidney L.	Port Alice	Williamson, Olive I.	Osoyoos
Rogers, Sydney T.	Creston	Wilson, George	New Westminster
Sanford, Norman M.	Vancouver	Wood, Donald S. C.	Youbou
Saunders, Henry M.	White Rock	Wright, Mildred M.	Vancouver
Shannon, Robert J.	Oliver	Young, Albert C.	Squamish

There are also 15 students who are taking a Directed Reading Course in addition to their other work and who are, therefore, registered otherwise.

EXTRA-SESSIONAL CLASS

Ellis, Edward N.	Vancouver	Rusler, George W.	Vancouver
Gravlin, George R.	Vancouver	Smyth, James D.	Vancouver
James, Albert H.	Vancouver	Smyth, Joseph	Vancouver
Magar, William L.	Vancouver	Wallace, Kathleen P.	Vancouver
Morrison, Malcolm C.	Vancouver	Wark, Marshall S.	New Westminster
McArthur, Helen M.	Vancouver	Whiles, Dorothy E.	Vancouver
Prince, Maurice S.	Vancouver	Whitehead, Ursula	West Vancouver
Rader, Ines	Vancouver		

There are also 7 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

Abbott, Hugh M.	Vancouver	Bonutto, Alfred L.	Trail
Affleck, Antony C.	Vancouver	Bourns, John D.	Vancouver
Anderson, Blair W.	Vancouver	Bramall, Brian L.	Vancouver
Auchinleck, Gilbert F.	Vancouver	Brealey, George A.	Hollyburn
Baal, G. Gilbert G.	Sidney	Burrows, Michael	Vancouver
Bacon, Frank C.	Vancouver	Burton, John A.	Vancouver
Baillie, Alexander	Prince Rupert	Caine, Geoffrey R.	Prince George
Baker, F. Bruce	Sidney	Calderhead, Gordon A.	Calgary, Alta.
Ball, Harold W.	Monterey, Calif.	Caldwell, John R.	Cranbrook
Barlow, Frederick J.	Field	Carlile, Jack C.	Vancouver
Bayly, Lemuel J.	Chilliwack	Carlyle, Allan M.	Calgary, Alta.
Beaton, Stanley J.	Vancouver	Carncross, Charles A.	
Bell, S. William	Vancouver		New Westminster
Bennett, Orval W.	Victoria	Carrothers, P. John G.	Vancouver
Bentall, Robert G.	Vancouver	Caulfield, William J.	Vancouver
Blezard, Roy J.	Kimberley	Chestnut, R. Glenn	Vancouver
Blumenauer, George H.	Enderby	Chow, Jack K.	Vancouver

FACULTY OF APPLIED SCIENCE—SECOND YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Christie, Hugh A. S.	Vancouver	McLeod, Donald F.	Vancouver
Clarke, Edna A.	Penticton	McLorg, Terence W.	Vancouver
Clay, Charles H.	New Westminster	McNaughton, James H.	Vancouver
Cochrane, James W.	Ocean Falls	McTaggart, Hugh D. H.	Vancouver
Confortin, John C.	Squamish	Narod, Alvin J.	Victoria
Cooke, Dewar B.	Vancouver	Nash, Frederick H.	Terrace
Cooper, Alexander C.	New Westminster	Oates, Rowland C. J.	Vancouver
Cote, Paul T.	Vancouver	O'Dynsky, Peter G.	Edmonton, Alta.
Cross, Gerald H.	Victoria	Oles, Jack E.	Vancouver
Currie, Allan	Rossland	Pakenham, Christopher C.	Vancouver
Davidson, Robert A.	Vancouver	Pearson, Carl E.	Vancouver
Dennys, Kenneth W.	Vernon	Porter, James A.	New Westminster
Dickenson, John E.	Abbotsford	Richardson, John M.	Hollyburn
Eddleston, James A.	Vancouver	Robinson, Dennis E.	Vancouver
Ekman, Frank O.	Vancouver	Rome, Alexander H.	Vancouver
Filman, Norman J.	Shanghai, China	Rose, David J.	Victoria
Fitch, Handly F.	Vancouver	Rymer, Kenneth W.	Edmonton, Alta.
Foster, Leo W.	Nelson	Sansum, John D.	Salmon Arm
Frost, Paul J.	Vancouver	Saunders, Harold L.	Invermere
Fuller, F. Michael	Port Kells	Scarisbrick, Richard G.	Vancouver
Gall, Louis	Nanaimo	Sceats, Hugh B.	Victoria
Gifford, Ross J.	New Westminster	Schjelderup, V. Roger	Courtenay
Gitterman, Louis H.	Vancouver	Scott, James A.	Vancouver
Godfrey, Gerald F.	Sidney	Seraphim, Andrew F.	Clayburn
Goodman, James E.	Flin Flon, Man.	Shadwell, Howard J.	Vancouver
Gorse, Frederick W.	Salmon Arm	Shaw, Alexander J.	Vancouver
Graves, Harold B. R.	Vancouver	Shore, Albert G.	Winnipeg, Man.
Grimble, Wilf G.	Vancouver	Shumas, Fred	Vancouver
Gush, John B.	Saanichton	Simpson, John D.	Vancouver
Halle, Isaac	Fernie	Slater, John S.	Vancouver
Hamilton, Frederick T.	Vancouver	Sleigh, E. Barry	Vancouver
Handa, Roy	Vancouver	Small, Frederick	Burns Lake
Haney, D. Francis	Revelstoke	Smith, H. Leslie	Vancouver
Hausch, Robert C.	Vancouver	Smith, Herbert S.	Vancouver
Hicks, John B.	Vancouver	Smuin, Eugene G.	Penticton
Hitchcock, John H.	Vancouver	Soulsby, Alan St. G.	Victoria
Holy, Harold W.	Dewdney	Speakman, George	Armstrong
Hood, John A.	Victoria	Stamatis, George	Vancouver
Hurt, H. Alton	Bashaw, Alta.	Stewart, Leonard J.	Nelson
Jagger, Paul S.	Hollyburn	Story, Jack W.	Vancouver
Julson, O. Melvin	Della, Alta.	Street, A. Verne	Vancouver
Kato, Yoichi	Vancouver	Stuart, William B.	Ocean Falls
Kermode, Donald J.	Vancouver	Swerdfeger, John H.	Vancouver
LaBelle, Eugene P.	Vancouver	Syme, Thomas D.	Vancouver
Langenek, Frederick	Kamloops	Taylor, John D.	Victoria
Lee, Eric F.	Stewart	Taylor, Norman E.	Princeton
Legeer, Ronald J.	Vancouver	Taylor, R. Douglas	Kamloops
Leslie, J. Patrick	New Westminster	Thompson, C. H. Atherden	Vancouver
Lightbody, Alexander	New Westminster	Thomson, James R. North	Vancouver
Livingston, Donald A.	Vancouver	Thomson, Stanley G.	Vancouver
Manning, Richard C.	Allenby	Thornton-Trump, W. Edmund	Vancouver
Martin, Lionel	Vancouver	Thorson, Emil	Vancouver
Matsui, Richard	Vancouver	Tiedje, John L.	Trail
Mattson, Nels H.	Trail	Tilson, Ritchie	Vancouver
Milligan, George B.	Vancouver	Timleck, Gerald B. D.	Vancouver
Mosher, Allison F.	Vancouver	Toombs, E. Harold	Vancouver
Motherwell, Victor G.	Vancouver	Torgerson, Harold P.	Weldon, Sask.
Murray, George	Vancouver	Uthoff, John C.	Victoria
Murray, John M.	Vancouver	Wallace, John M.	Vancouver
McAdam, J. Clifton	Vancouver	Walling, Oliver J.	New Westminster
McCarter, Donal C.	Victoria	Wheatley, Gordon H.	Vancouver
McCarter, William L.	Vancouver	Wilding, Malcolm F.	Prince Rupert
McEwan, Robert R.	Vancouver	Willox, George J.	Vancouver
MacKay, Ronald N.	Victoria	Wilson, Charles L.	Vancouver
MacKay, Wallace I.	Victoria	Wintemute, John R.	Vancouver
MacKinnon, Donald F.	Cadomin, Alta.	Workman, Allan B.	Fernie
McLean, Donald	Michel	Yip, Roy W.	Vancouver

FACULTY OF APPLIED SCIENCE—(Continued)

THIRD YEAR

Name	Home Address	Name	Home Address
Backman, Arvid H. V.	Vancouver	Kullander, Marvin O.	Gibson's Landing
Baker, Dudley L.	Vancouver	Lea, Edgar R.	Vancouver
Baldwin, John H.	Vancouver	Lear, Harold K.	North Vancouver
Bannerman, Donald K.	Vancouver	Leong, Dennis T. S.	Vancouver
Bartholomew, Ben.	North Vancouver	Lepsoe, Christian H.	Trail
Beley, J. Patrick	Rossland	Livingstone, Hughie	Vancouver
Benson, Edward	Chapman Camp	Low, William R.	Aldergrove
Blake, Donald H. R.	Victoria	Mabee, Thomas O.	Victoria
Bourne, Edward A.	Trail	Mann, Clarence W. J.	Vancouver
Buck, Frank A. M.	Vancouver	Mason, Ernest	Trail
Buckland, John A. C.	Vancouver	Miller, James W.	Vancouver
Burns, David	Vancouver	Mitsui, Koel	Vancouver
Campbell, George C.	Vancouver	Morris, H. Rodney	Vancouver
Carlyle, D. Gordon	Vancouver	McCay, James	Vancouver
Carter, Ronald B.	New Westminster	McCulloch, James P.	Vancouver
Charlesworth, F. H. Barrie	Vancouver	McLellan, Leonard R.	Vancouver
Copp, Stanley S.	Vancouver	McLeod, A. Allan	Vancouver
Cox, Leonard	Vancouver	MacRae, Hector R.	Caulfeild P.O.
Cunningham, C. Cleveland	Burnaby	McTaggart, Kenneth C.	West Vancouver
Day, Alvin A.	Vancouver	Ontkcan, Orville M.	Vancouver
Deane, Roy E.	Vancouver	Patterson, Lawrence A.	Hollyburn
DeLeen, John L.	Vancouver	Patterson, Stanley G.	Hollyburn
Dunell, G. Eric	North Vancouver	Pickard, Murray K.	Vancouver
Elgar, Everett C.	Vancouver	Pitman, Duncan L.	Prince George
Elliott, Albert H.	Dawson, Y. T.	Priest, Jack	Vancouver
Evans, Donald C.	Vancouver	Pyle, R. Gordon	Vancouver
Field, Robert C.	Chilliwack	Roach, Stewart W.	Vancouver
Finch, Gordon L.	Kelowna	Rogers, John S.	Vancouver
Forrester, Andrew G.	Ladysmith	Schiedel, Ian H.	Vancouver
Fraser, George B. R.	Peachland	Smith, Frank F.	Kimberley
Gardiner, Alexander H.	Vancouver	Smith, William R.	West Vancouver
†Gelfan, David	Los Angeles, Calif.	Steel, William E. J.	Vancouver
†Ill, Norman A.	Kimberley	Stewart, A. John	Britannia Beach
Goodwin, Walter H.	Vancouver	Stewart, Harold C. E.	Vancouver
Gordon, Francis J.	Vancouver	Stuslak, Michael	Powell River
Graham, Harold M.	Squamish	Sutcliffe, Ernest D.	Victoria
Gray, John S.	Vancouver	Sweeney, Maxwell P.	Ocean Falls
Green, Walter C.	Vancouver	Tabata, Minoru	Vancouver
Haddad, Michael A.	Vancouver	Tait, Robert J. C.	Vancouver
Hammond, John S. N.	Kelowna	Takahashi, Yoshito	Steveston
Handforth, R. Victor L.	Vancouver	Taylor, Hugh J.	Vancouver
Harrison, John S. M.	Vancouver	Thompson, J. Vernon	Bassano, Alta.
Hatch, Noll J.	Chilliwack	Tsujimura, Koichi	Vancouver
Hole, John S.	Vancouver	Weed, Joseph D.	Vancouver
Hooper, Perry McF.	Salmon Arm	Weiner, Harry S.	Vancouver
Horne, Leslie R.	Vancouver	†White, Patrick J.	Kelowna
Hughes, R. B. Chalmers	Penticton	White, Ronald J.	Vancouver
Hutchinson, Bruce	Vancouver	Williams, F. Campbell	Nanoose Bay
Jessup, Douglas G.	Ocean Falls	Williams, Lloyd	Westmont, Que.
Kaneen, A. Geoffrey	Vancouver	Zabinski, John	Cumberland
King, A. David	Port Alice		

FOURTH YEAR

CHEMICAL ENGINEERING	
Anderson, Thomas T.	Westview
Angley, William F. P.	Regina, Sask.
Bennett, Reginald B.	Vancouver
Burnett, Norman H.	Vancouver
Bushell, Charles H. G.	Vancouver
Cavers, Stuart D.	Vancouver
Dickson, Frank A.	Vancouver
Fargey, Harold T.	Vancouver
Gordon, Arthur D.	Vancouver
Gray, Denis H.	Vancouver
Hammersley, Robert C.	Vancouver
Harvey, Bruce F.	Revelstoke
Hopper, D. Alan	Vancouver
Hubner, Rudolph	Vancouver
*Mussallem, Peter	Haney
McCallum, Thomas G. M.	Vancouver
McGowan, John	Vancouver
*MacKenzie, John S.	Vancouver
McLellan, Donald E.	Vancouver
Orr, Oscar F.	Vancouver
Farham, Donald S.	Vancouver
*Potkins, Robert A.	Vancouver
Poulson, John H.	Saanichton
Rush, Ian C. MacD.	West Vancouver
Smith, Eric L.	Vancouver
White, Charles E. T.	Vancouver

*Conditioned.

†Partial.

FACTULTY OF APPLIED SCIENCE—FOURTH YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
CIVIL ENGINEERING			
Bell, Harry R.	Ladner	*Renshaw, Rodney E.	North Vancouver
Douglass, M. Keith	New Westminster	Shepherd, A. Fraser	Victoria
Harding, John H.	Nelson	MECHANICAL ENGINEERING	
McKenzie, William C.	New Westminster	Barton, Edward S.	Vancouver
Stewart, James N.	Vancouver	Bruce, Norman C.	Golden
Thorson, Victor	Vancouver	Brynelsen, John A.	Vancouver
ELECTRICAL ENGINEERING			
Bastin, Douglas H.	Vancouver	Buckham, Thomas T.	Vancouver
Bradfield, Albert W.	Nanaimo	Casson, H. Vincent	Victoria
Bundy, Leonard P.	Vancouver	Curran, Henry M.	Vancouver
Chu, Gan D.	Vancouver	Granger, John M.	Vancouver
Collins, John A.	North Vancouver	Johnson, Earl W.	Vancouver
Davie, Hugh S.	Vancouver	Johnson, William J.	Vancouver
Hills, J. Franklyn	Vancouver	Logan, Jack D.	Vancouver
*Jamieson, Fraser	Vancouver	Nash, Charles W.	Vancouver
*Miller, Richard C.	Victoria	Nasmyth, Pan H.	North Vancouver
McAllister, Robert D.	Rossland	Parker, Rex C.	Woodfbre
Nosworthy, Frank M.	Chilliwack	Roberts, John M.	Vancouver
Rich, Royce	Vancouver	Rooney, Sidney C.	North Vancouver
*Tuley, Edwin	Vancouver	*Roxburgh, J. Malcolm	Vancouver
Walton, E. Norman	Vancouver	Sheldon, Stanley W.	New Westminster
Zitko, Ludovic	Vancouver	Takahashi, Saburo	Victoria
FOREST ENGINEERING			
Boss, Norman H.	Nelson	Turnbull, Arthur W.	Milner
*Creighton, John D.	Vancouver	METALLURGICAL ENGINEERING	
Flynn, James E.	Vancouver	Bell, Gordon M.	Vancouver
Fraser, Alan R.	West Vancouver	Deptford, James A.	Vancouver
Kagetsu, Hajime	Vancouver	Morrison, Bernard H.	Nelson
Matheson, Chester R.	Lang Bay	MINING ENGINEERING	
Richards, Ian T.	Hollyburn	apRoberts, G. Evan	Vancouver
Thompson, Elmer A.	New Westminster	Bennett, Joseph H.	New Westminster
Young, W. Edward L.	Oyama	*Blair, William B.	Kelowna
GEOLOGICAL ENGINEERING			
Abrams, Jack H.	Nanaimo	Davies, Kenneth R. G.	Kimberley
Carlisle, Donald	Vancouver	Drummond, Alan S.	Victoria
Darley, Harry P.	Delta, Col.	Edwards, Donald M.	Cranbrook
Gross, William H.	Vancouver	*Fairbairn, Dennis W. L.	Victoria
Hilchey, Gordon R.	Vancouver	FitzPatrick, Samuel T.	Victoria
*Kermode, Edward J.	Vancouver	Gatenby, Lisle B.	Vancouver
Leech, Geoffrey B.	Salmon Arm	Haywood-Farmer, Robert	Savona
Parry, Edward J.	Vancouver	McArthur, John P.	Vancouver
FIFTH YEAR			
CHEMICAL ENGINEERING		CIVIL ENGINEERING	
Andrews, Arthur J.	Chapman Camp	Goode, Norman J.	Vancouver
Beaty, John D.	Vancouver	Harford, George P.	New Westminster
*Davis, Russell L. L.	Vancouver	Janes, John N.	Vancouver
Greeno, Daniel M.	Upper Sumas	Markham, Douglas	Vancouver
Harris, Stanley L.	Vancouver	Wallace, William	Vancouver
Hipkin, Howard G.	Vancouver	Zirul, Melvin L.	North Vancouver
Keays, John L.	Vancouver	ELECTRICAL ENGINEERING	
Lindsay, William	Vancouver	Anderson, Cameron B. H.	Vancouver
Lowe, Robert A.	Calgary, Alta.	*Crane, George J.	New Westminster
Mikkelsen, Elmer J.	Golden	Davidson, Gordon K.	Qualicum Beach
Moodie, Walter J.	Vancouver	Duke, Robert L.	Vancouver
McKim, Howard N.	Calgary, Alta.	Foster, J. Max.	Glen Ewen, Sask.
Purdey, James W.	Vancouver	*Gregory, A. Joseph	Vancouver
Richardson, Allyn St. C.	North Vancouver	Griffiths, Garth	Victoria
Robinson, James A.	Victoria	Hailey, Arthur R. T.	Vancouver
Rosenberg, Elof C.	North Vancouver	Lyons, Edgar LeR.	Vancouver
Sanford, Lionel M.	Vancouver	Morin, Desire P.	Vancouver
Smith, Harry H.	New Westminster	McDonald, John D.	Rossland
Thomas, David H. L.	Victoria		

*Conditioned.

FACULTY OF APPLIED SCIENCE—FIFTH YEAR—(Continued)

Name	Home Address	Name	Home Address
ELECTRICAL ENGINEERING—(Cont'd)		McLaren, Thomas A.	Vancouver
Nasmyth, Patrick W.	North Vancouver	Nazzer, Don	Vancouver
Ryder, Charles V.	Chilliwack	Nichols, Walter J.	Edmonton, Alta.
FOREST ENGINEERING		Parker, Charles W.	Revelstoke
Johnston, J. Ralph	Invermere	Rattenbury, David J.	Kelowna
Ker, John W.	Vancouver	Shinobu, Eichi W.	Vancouver
Mahood, Ian	Chilliwack	Storey, John E.	Vancouver
Sprott, Edgar R.	Vancouver	Wade, Garth S.	Kamloops
GEOLOGICAL ENGINEERING		Wyness, Donald P.	Vancouver
Gaul, Raymond F.	Vancouver	METALLURGICAL ENGINEERING	
Lynott, William J.	Vancouver	*Ellis, Francis J.	Regina, Sask.
McEachern, Ronald G.	Vancouver	*Maxwell, John J.	Swift Current, Sask.
Newmarch, Charles B.	Victoria	*Morton, Norman A.	Portage La Prairie, Man.
Smith, Alan R.	Vancouver	Olson, George C.	Nelson
Thompson, Robert M.	Vancouver	*Rae, Arthur C.	Vancouver
Wallace, J. Alan	Vancouver	MINING ENGINEERING	
Williams, Edwin P.	Vancouver	*Burnet, Frederick E.	Regina, Sask.
MECHANICAL ENGINEERING		Crowhurst, John J. A.	North Vancouver
Barchard, Francis M.	Trail	Iverson, Bayard O.	Oliver
Braidwood, William	Vancouver	Merrett, John E.	Victoria
Chinn, Frank	Vancouver	*McMillan, Gordon A.	Vancouver
Gillies, John A.	Vancouver	*Macrae, Roderick C.	Winnipeg, Man.
Granger, Thomas S.	Vancouver	Patience, L. Patrick	Kimberley
Haskins, Reginald E.	Kelowna	Ross, John A. C.	Britannia Beach
Keillor, Gordon R.	Vancouver	*Townsend, Stanley D.	Oyama
Kelland, Herbert H.	Vancouver		
Mills, William E.	Vancouver		

GRADUATES

Allen, Alfred R.	Vancouver	Ney, Charles S.	Vancouver
Davidson, Henry H. A.	Vancouver	Pilkington, William T.	New Westminster
Hall, James Z. G.	Vancouver	Potter, Charles	Vancouver
Holland, D. Clarke	Vancouver	Runkle, John D.	Vancouver
Leslie, John D.	Vancouver	Taylor, Raymond R.	Vancouver
Mathews, William H.	Vancouver	Yip, Sun W.	Vancouver
Monasch, Louis B.	Vancouver		
Morel, Roy W. F.	Trail		

NURSING

SECOND YEAR

Adam, J. Kirsteen	Vancouver	Hicks, Mary N.	Agassiz
Baker, M. Anne	New Westminster	Mungen, Isabel L.	Watrous, Sask.
Driver, Joyce I.	Kamloops	Rogers, Patricia M.	Vancouver
Gulloch, Ennis	Vancouver	Sorenson, Marie	Prince Rupert
Hawkins, Mary E.	Vancouver	Yamamoto, Nana	Vancouver

THIRD YEAR

Avis, Margaret L.	Vancouver	Mann, Alison M.	Calgary, Alta.
Ball, Margaret	White Rock	Munro, Mae E.	Britannia Beach
Bolton, Nancy	New Westminster	McCorkell, Beverly G.	Vancouver
Coffey, Doris M.	Vancouver	Rowe, Phyllis S.	Kamloops
Cross, Josephine	Kamloops	Stewart, Elizabeth J.	Vancouver
Fleck, Janet S.	Vancouver	Thompson, Joan M.	Hollyburn
Hyslop, Mary I.	Vancouver		

FOURTH YEAR

Banford, Pauline E.	New Westminster	Jonson, Ruth M.	Hatter, Alta.
Campbell, Ethel J.	Vancouver	Ladner, Dorothy M.	Burnaby
Chipperfield, Nora J.	Royal Oak	McKay, Jean C.	Vancouver
Cochrane, Ruth C.	New Westminster	Pepper, Doris B.	Vancouver
Dunfield, Mary F.	Vancouver	Robertson, Margaret	Powell River
Goble, Margaret A.	Vancouver	Ross, Florence M.	Vancouver
Jamieson, Doreen L.	Rossland	Trout, M. Ferne	Vancouver
Jenkins, A. Elizabeth	Vancouver	Walker, Jean M.	Tranquille
Johnson, Shirley H.	Wells	Wright, Leora R.	Vancouver

*Conditioned.

NURSING—FACULTY OF APPLIED SCIENCE—(Continued)

FIFTH YEAR

Name	Home Address	Name	Home Address
Beattie, Margaret	Queen Charlotte City	Giovando, Lucille	Ladysmith
Beveridge, Margaret A.	Vancouver	Montgomery, R. Leslie	Vancouver
Breton, Barbara A.	Vancouver	Morris, L. Elizabeth	New Westminster
Campbell, Margaret M.	Vancouver	Taylor, M. Gayle	New Westminster
Eddie, Mary C.	Sardis	Uyede, A. Michiyo	Vancouver
Gall, Jeanne E.	Vancouver		

SIXTH YEAR

Campbell, Isabelle A.	Vancouver	Millar, Margaret C.	Vancouver
Curtis, Kathleen M.	Vancouver	Macdonell, Marion E.	Sardis
Darby, Katherine A.	Vancouver	Staniforth, Marjorie E.	Vancouver
Howard, Edna G.	Vancouver	Weir, Jenny McM.	Invermere

PUBLIC HEALTH NURSING

Buckley, Alice E.	Vancouver	Martin, Jean E.	Vancouver
Carter, Doris E.	Victoria	Megaw, Margaret M.	Vernon
Dods, Myrtle J.	Vancouver	Muirhead, Kathleen M.	Vancouver
Hind, Dorothy M.	Vancouver	McClure, Alma M.	New Westminster
Holland, Evelyn S.	Melfort, Sask.	McDowell, Marjorie E.	Piapot, Sask.
Johnson, Nellie	Vancouver	Pinchbeck, Marjorie	Calgary, Alta.

FACULTY OF AGRICULTURE

FIRST YEAR

Ash, A. Bruce	Vancouver	Lane, Robert B.	Cheyenne, Wyo.
Blair, Robert C.	New Westminster	Lourie, Marianne	Vancouver
Buck, Paul A.	Vancouver	McCammion, John T.	Burnaby
Burnham, Robert J.	Vancouver	McCrary, Elwood R.	Eburne
Carson, Douglas J.	Kamloops	Macdonald, James A. S.	Vancouver
Clark, John D.	Vancouver	Macfarlane, J. Alan	Vancouver
Clarkson, L. Trevor	Courtenay	McIntosh, Gloria C.	Vancouver
Cohen, Theodore	Vancouver	McLeod, Melville C.	Vancouver
Cook, Douglas T.	Vancouver	McManus, Gerald F.	Vancouver
Davis, Gordon L.	Milner	McMillan, Robert H.	New Westminster
Duncan, Rosemary	Vancouver	Neilson, James A. S.	Vancouver
Eakins, James J.	Vancouver	Noble, Stanley R.	Armstrong
Excell, Stephen E.	North Vancouver	Pearson, Harold H.	Edmonton, Alta.
Farley, Kathryn A.	Vancouver	Pinchin, Victor L.	Vancouver
Fraser, Charles A.	New Westminster	Racey, R. Stewart	Vancouver
Goodman, Martin H.	Banff, Alta.	Reid, James A.	Vancouver
Goodwin, C. Rex	New Westminster	Reifel, George H.	Vancouver
Haggart, Douglas A.	Vancouver	Robinson, John	Burnaby
Hay, Donald A.	Vancouver	Rolfe, William A.	Vancouver
Hilts, Lewis I.	Vancouver	Stewart, Hugh MacL.	Britannia Beach
Ho, Thomas K. K.	Vancouver	Sully, Lynn K.	Cloverdale
Holder, Ronald M.	Vancouver	Swan, Robert E.	Vancouver
Hooper, Frederick H. S.	Vancouver	Thomson, Ronald M.	Vancouver
Huntington, Arthur R.	Vancouver	Turner, Jack H.	Vancouver
Keenlyside, Thomas R.	Vancouver	Woods, Wilfrid E.	Vancouver
King, J. David	Vancouver	Wright, Norman S.	Steveston
Lacey, Kathleen M.	Vancouver		

SECOND YEAR

*Bradner, Frank E.	Vancouver	Fitz-James, Philip	Vancouver
Brown, Ivan T.	Vancouver	Foley, Richard B.	Vancouver
Buerk, Robert C.	Vancouver	*Friker, Walter F.	Victoria
Claydon, George W.	Vancouver	Goodwin, Martin B.	Vancouver
Dale, J. Peter B.	New Westminster	Grahame, Richard W.	Vernon
*Dilworth, J. Gerald	Kamloops	Green, Charles A.	Vancouver
Farley, Kenneth F.	Vancouver	*Guichon, Urban J.	Quilchena
Fergusson, Conrad N.	Vancouver	Heal, Stephen J.	Armstrong

*Conditioned.

FACULTY OF AGRICULTURE—SECOND YEAR—(Continued)

Name	Home Address	Name	Home Address
Hunter, Douglas R.	Hazelton	Ripley, Thomas A.	New Westminster
*Killick, Stanley R.	New Westminster	*Rippon, Arthur W.	Vancouver
Letham, W. Herbert	Vancouver	Roe, John A.	Vancouver
*Lloyd, Robert E.	Vancouver	*Ryall, John P.	Denman Island
Logan, Harry F. McC.	Vancouver	Sandall, Frances W.	Vancouver
Marshall, Robert A.	Calgary, Alta.	*Shore, Alan W.	Vancouver
Merryfield, Jack W.	Vancouver	Smith, Alexander F.	Vancouver
Moyls, Adrian W.	Vancouver	Swackhamer, David	New Westminster
Mulvin, Mary L.	Vancouver	Tamboline, Florence R.	Ladner
MacCarthy, James A.	New Westminster	*Turner, Stuart W.	Victoria
McDonald, Ian J.	Vancouver	*Van Horne, Harold B.	Vancouver
MacLean, Donald W.	Vancouver	*Vaughan, Roderick	Hollyburn
*MacSwan, Iain C.	Vancouver	Young, Alastair J.	Vancouver
Planta, Carmen	Vancouver	Young, David B.	Vancouver
		*Young, Simeon L.	Vancouver

THIRD YEAR

†Bentley, Robert O.	Vancouver	*Lord, Terence M.	Vancouver
Bridge, Tom	Vancouver	*Maxwell, John C.	Vancouver
Brown, Ken R.	Vancouver	Myroie, Robert L.	Vancouver
Campbell, James McG.	Vancouver	McCuaig, Ian B.	Outremont, Que.
*Chang, June	Vancouver	†McMullan, M. Jean	Salmon Arm
Clement, John W.	Vancouver	Neilson, Nora E.	Vancouver
Cuthbert, W. James	Agassiz	*Novikoff, Morris	Vancouver
Davies, John C.	Vancouver	Pearce, Joseph M.	Vancouver
Farrow, F. Alfred	New Westminster	Thomson, J. Lorraine	Vancouver
Fergusson, Donald N.	Vancouver	Townsend, George C.	Vancouver
Fulton, Ronald F.	Vancouver	Wainwright, Philip R.	Vancouver
Johnston, Wallace M.	Chilliwack	Watt, Alexander W.	Vernon
*Lidster, Echo L. R.	Langley Prairie	†Woodward, Eugene D.	North Vancouver

FOURTH YEAR

Anstey, Thomas H.	Victoria	*Mitchell, Phyllis D.	Vancouver
Byers, John H.	Vancouver	Monckton, John P.	Royal Oak
Christie, William D.	Vancouver	Morgan, Joseph F.	Vancouver
Cox, Edmund T.	Rossland	*McEwen, J. Murray	Vancouver
Cumming, Patricia C.	Steveston	McKim, Anson	Vancouver
Donegani, Robert G.	Eburne	Oldfield, James	Saanich
Eek, Catherine J.	Fanny Bay	†Parish, G. Philip J.	Vancouver
Gilmour, Campbell G.	New Westminster	Sakamoto, Arthur G.	Whonock
*Gray, Neil T.	North Vancouver	Salisbury, Robert L.	Vancouver
Grieve, Thomas	Vancouver	Tamura, Yukio	Haney
Millard, Robert P.	Vancouver	Tremblay, F. Todd	Vancouver

GRADUATES

Atkinson, Robert G.	Vancouver	Morrison, Gillmor I.	Vancouver
Billings, Frederick L.	Vancouver	MacKay, William R.	Vancouver
Brown, Reginald H.	Stanley, Cariboo	Pratt, Jean M.	Victoria
Campbell, M. Lois	Vancouver	Rogers, C. Bernard W.	Daysland, Alta.
Dickson, Bruce A.	Vancouver	Saunders, J. Bertram	Victoria
Dougans, Douglas H.	Vancouver	Taylor, Douglas K.	Vancouver
Falls, Herbert D.	Vancouver	Taylor, Milton C.	Vancouver
Henderson, Wilson	Vancouver	Teir, J. Bertrand	Rosebery
Hicks, W. Odetta	Agassiz	Weston, Stanley	Vancouver
LeGallais, D. Richmond	Vancouver		
Lopatecki, Eugene L.	Vancouver		

OCCUPATIONAL COURSE

Cumming, Alison McN.	Vancouver	Ohama, George	New Westminster
Garrish, Arthur R.	Oliver	Reagh, Dennis H.	Britannia Beach
Halom, Stephen	Budapest, Hungary	Stroyan, William A.	Vancouver
Maitland, Gordon M.	Vancouver		

*Conditioned.

†Partial.

REGISTRATION FOR 1940-41

FACULTY OF ARTS AND SCIENCE

	Women	Men	Total
First Year	207	340	547
Second Year	207	282	489
Third Year	115	165	280
Fourth Year	116	159	275
Graduates	24	105	129
Social Work	22	4	26
Teacher Training Course	46	25	71
*Directed Reading Courses.....	21	109	130
*Extra-Sessional Class	9	13	22
*Double Registrations	-6	-16	-22
			—1947

FACULTY OF APPLIED SCIENCE

Second Year	1	166	167
Third Year		101	101
Fourth Year		102	102
Fifth Year		82	82
Graduates		14	14
			— 466

FACULTY OF APPLIED SCIENCE (NURSING)

Second Year	10		10
Third Year	13		13
Fourth Year	18		18
Fifth Year	11		11
Sixth Year	8		8
Public Health Nursing.....	12		12
			— 72

FACULTY OF AGRICULTURE

First Year	4	49	53
Second Year	4	41	45
Third Year	5	21	26
Fourth Year	3	19	22
Graduates	3	17	20
Occupational Course .....	..	7	7
			— 173

Total.....2658

	Women	Men	Total
Evening Class in Botany.....	12	23	35
Summer Session (1940):			
Faculty of Arts and Science }			
Faculty of Agriculture (6) }	183	404	587

DEGREES CONFERRED

MAY, 1940

Faculty of Arts and Science

THE DEGREE OF MASTER OF ARTS

(Names in alphabetical order)

- Brewer, Charles Patrick, B.A. Major: Chemistry
Minor: Physics
Thesis: "The Activation of an Adsorbent Charcoal Surface."
- Brown, James Everett, B.A. Major: Education
Minor: Economics
Thesis: "An Investigation into the Supply of and Demand for Teachers in British Columbia."
- Cameron, William Maxwell, B.A. Major: Zoology
Minor: Botany
Thesis: "A Preliminary Investigation of the Natural Spawning, Incubation, and Alevinage of the Pink Salmon (*Oncorhynchus Gorbuscha*)."
- Cave-Browne-Cave, Genille, B.A. Major: Chemistry
Minor: Physics
Thesis: "The Development of a Preservative for Gill Nets."
- Cope, Mary Catherine Lillian, B.A. Major: History
Minor: Education
Thesis: "Colonel Moody and the Royal Engineers in British Columbia."
- Covington, Arthur Edwin, B.A. Major: Physics
Minor: Mathematics
Thesis: "Determination of the Focal Points of an Electronic Lens by a Graphical Method."
- Dale, Dorothy Ursula, B.A. Major: Zoology
Minor: Botany
Thesis: "The Effect of Thymus Extract on Wistar Rats."
- Davidson, John Fraser, B.A. Major: Botany
Minor: Zoology
Thesis: "A Revision of the Genus *Astragalus* in British Columbia."
- Detwiller, Lloyd Fraser, B.A. Major: Economics
Minor: Government
Thesis: "The Gold Mining Industry of Canada, with Special Reference to Mining Costs."
- Downes, Gwladys Violet, B.A. Major: French
Minor: Education
Thesis: "Les Théories Poétiques de Paul Valéry."
- Elliot, Ottowell Blake, B.A. Major: History
Minor: Education
Thesis: "Briand and the French Search for Security."
- Fitch, Fred Troop, B.A. Major: Chemistry
Minor: Physics
Thesis: "The Action of Cyanide in the Flotation of Sphalerite."
- Found, Richard Keith, B.A. Major: Philosophy and
Psychology
Minor: History
Thesis: "An Investigation of the Relationship Between Extra-Curricular Activities and Scholastic Standing."

THE DEGREE OF MASTER OF ARTS—(Continued)

Herd, Harold Henry, B.A.....	Major: Chemistry Minor: Physics
Thesis: "The Surface Chemistry and Flotation of Galena."	
Hobden, Lloyd Hamlyn, B.A.....	Major: French Minor: English
Thesis: "L'influence de Gustave Flaubert sur la vie et l'oeuvre de Guy de Maupassant."	
Irish, Ernest James Wingett, B.A.....	Major: Economic Geology Minor: Palaeontology
Thesis: "The Mineralogy of Some of the Gold Mines of British Columbia."	
Kidd, George Pirkis, B.A.....	Major: Economics Minor: History
Thesis: "An Analysis of Forest Taxation in British Columbia."	
Lane, Joseph Harold, B.A.....	Major: History Minor: Education
Thesis: "Some Aspects of the European Anarchy."	
Lips, Alair, B.A.....	Major: Chemistry Minor: Biology
Thesis: "The Thermal Decomposition of Dimethyl Acetal by the Flow-Tube Method."	
Lobb, Hilda Isabella, B.A.....	Major: Classics Minor: Education
Thesis: "The History, Character, and Customs of the Celts Prior to the Roman Conquest."	
Mathias, Douglas Gordon Browne, B.A.....	Major: Bacteriology and Preventive Medicine Minor: Agricultural Bacteriology
Thesis: "Studies on <i>Brucella abortus</i> ."	
Muir, James French, B.A.....	Major: Education Minor: Mathematics
Thesis: "A Study of the Relation Between the Preparation and Teaching Subjects of the Secondary School Teachers of British Columbia."	
Penny, Hollis Jennings, B.A.....	Major: French Minor: Education
Thesis: "La critique littéraire de Voltaire."	
Railton, Joan Mary, B.A.....	Major: Education Minor: History
Thesis: "Parents' Reactions to Children's Behaviour Problems."	
Sibley, William Maurice, B.A.....	Major: Philosophy and Psychology Minor: Greek
Thesis: "The Development of Empiricism in Modern Philosophy."	
Tomkinson, William, B.A.....	Major: Zoology Minor: Botany
Thesis: "Introductory Studies on the Development of the Bones of the Head in <i>Clupea Pallasii</i> ."	
Town, Victor John, B.A.....	Major: History Minor: Government
Thesis: "Comparison and Contrast of the Territorial Government of Washington and the Colonial Government of British Columbia."	
Wright, John Bell, B.A.....	Major: Mathematics Minor: Education
Thesis: "Fuchsian Groups Associated with Certain Indefinite Quaternary Quadratic Forms."	

THE DEGREE OF MASTER OF ARTS—(Continued)

Yerburgh, Ernest Robert Marryat, B.A.	Major: Classics Minor: Education
Thesis: "Roman Society as Revealed in the Works of Cicero and Horace."	
Zotov, Gennady, B.A.	Major: Physics Minor: Mathematics
Thesis: "The Raman Effect of Cis and Trans Decahydronaphthalene."	

THE DEGREE OF BACHELOR OF ARTS

*With Honours**(Names in alphabetical order)*

Anderson, Violet Jean	2nd Class Honours in Philosophy and Psychology
apRoberts, Robert Pigott	1st Class Honours in English Language and Literature
Baker, Donald Charles Burchall	1st Class Honours in French and German
Barton, William Hickson	2nd Class Honours in English Language and Literature
Birnie, Elizabeth Hester	1st Class Honours in French and English
Bjarnason, Emil Grover	1st Class Honours in Economics
Boardman, Harold	1st Class Honours in Chemistry
Booth, Kenneth Gordon	1st Class Honours in Chemistry
Borelli, James Vincent	2nd Class Honours in French
Braidwood, Darrell Thomas Burns	2nd Class Honours in Economics and Political Science
Brason, Frederick Wells	1st Class Honours in Bacteriology and Preventive Medicine
Brown, James Brooking	1st Class Honours in Physics and Mathe- matics
Bunyan, Donald Edwin	2nd Class Honours in Mathematics and Physics
Findlay, Margaret Mary	1st Class Honours in French
Fleck, Elizabeth Baker	2nd Class Honours in Chemistry
Flesher, Eric MacGill Reed	2nd Class Honours in Mathematics and Physics
Fraser, Emily Ann	1st Class Honours in Philosophy and Psychology
Frith, Elizabeth Stewart	1st Class Honours in History
Gardner, Joseph Arthur	1st Class Honours in Chemistry
Garrett, John Stanley	2nd Class Honours in Economics and Political Science
Gwyn, Alan Stratton	1st Class Honours in Chemistry
Harvey, Monica Joyce	1st Class Honours in French
Jamieson, Florence Trimble	1st Class Honours in Bacteriology and Preventive Medicine
Jones, Dorothy May	2nd Class Honours in French
Lew, Hin	1st Class Honours in Mathematics and Physics
Lloyd, Denys Channer	1st Class Honours in Chemistry
Milsom, Geoffrey Hayward	2nd Class Honours in Economics
Mitchell, Leonard	1st Class Honours in Chemistry
Montgomery, Richard Alan	1st Class Honours in Mathematics and Physics
Moyls, Benjamin Nelson	1st Class Honours in Mathematics
Murphy, Margaret Alice	2nd Class Honours in Mathematics

THE DEGREE OF BACHELOR OF ARTS—HONOURS—(Continued)

McCallem, Allisen	1st Class Honours in French
McLaughlan, Thomas Aird.....	2nd Class Honours in Mathematics and Physics
Ozaki, Tam Tsutomu.....	2nd Class Honours in Chemistry
Pellant, Ernest Roy.....	2nd Class Honours in History
Petrie, William	1st Class Honours in Mathematics and Physics
Philpot, Dorothy Jean.....	2nd Class Honours in Mathematics
Pyle, Donald Graham.....	1st Class Honours in History and Eco- nomics and Political Science
Quigley, John Malachi.....	1st Class Honours in French
Robinson, Henry Basil Oswin.....	1st Class Honours in Latin and French
Rush, Jack Thomas.....	1st Class Honours in French and Ger- man
Shaw, Kenneth Noel Francis.....	1st Class Honours in Chemistry
Sinclair, Evelyn Barbara.....	1st Class Honours in Mathematics
Smith, Evelyn Bebe.....	1st Class Honours in Philosophy and Psychology
Stewart, Donald Douglas.....	2nd Class Honours in Chemistry
Taylor, Frederick Henry Carlyle.....	1st Class Honours in Biology (Zoology option)
Thompson, Margaret Kathryn.....	1st Class Honours in Mathematics
Thwaites, John Beckinton.....	1st Class Honours in Economics and Political Science and French
Turner, Gordon Henry.....	1st Class Honours in Chemistry

THE DEGREE OF BACHELOR OF ARTS

*General Course**(Names in alphabetical order in each class)**Class I*

Adamson, Penelope R.	Keel, Eileen R.
Chapman, V. Lennie	Mercer, Jack E.
Deloume, Fernand E.	McDonald, Ruth E.
Hewitt, Katherine B.	Maclachlan, J. Murdoch
Hicks, Albert R.	Scott, Edward W.
Hutchinson, Sheila D.	

Class II

Alexander, Ernest A.	Garstin, Lawrence F. H.
Alexander, Margaret H.	Halcrow, James Y.
Avis, Barbara L.	Hardman, Jack G.
Beach, A. Mansfield	Hollenberg, Shirley F.
Bremner, Moira C.	Horn, Patricia H.
Bricker, Marion A.	Hunter, Douglas L.
Brown, M. E. Monica B.	Hunter, Mona D.
Bush, Irene B.	Jenkins, Irene M.
Campbell, Henry C.	Jeremy, Ann H.
Caydzien, Esme C.	Johnson, Gordon E.
Collins, Rosemary R.	Johnston, Jean E.
Daniel, Howard W.	Keatley, Patrick C.
Daunt, Henry T.	Lang, Alexander C.
Doherty, Norah	Lunde, Magnus
Eaton, Ethel M.	Marshall, William O.
Fox, Priscilla I.	Moe, John G.
Fujiwara, M. Wesley	Momose, Yoshiko V.

THE DEGREE OF BACHELOR OF ARTS—GENERAL COURSE—(Continued)

Moore, Victor C.	Seto, Maysien G.
Morrow, Henry McF.	Sherratt, Dorothy M.
Mountain, Roy E.	Snow, Gertrude A.
Murphy, Mary	Stewart, Isabella M.
McBean, R. Harold	Strongitharm, Edward D.
McDiarmid, Maureen N.	Swanson, Arnold L.
McDonald, John A.	Taylor, Sydney
McGinn, Robert D.	Thompson, N. Kathleen
McKenzie, Glenn L.	Thorstenson, Roy F.
MacKenzie, Russell K.	Turnbull, Doris H.
McNeill, Margaret T.	Vincent, Honor E.
McPhee, Edward I.	Ware, Clifford A.
Nishi, Frederick I.	White, Moira M.
Nottingham, A. Miles	Whitelaw, Margaret E.
Paul, Arthur B.	Wickett, W. Percy
Pullinger, Percy B.	Williams, Ruth E.
Rattenbury, John A.	Worth, Douglas H.
Ryan, Nora	Wright, Irene M.
Sadler, Evelyn E.	Wylie, Stewart
Sage, W. Donald M.	

Passed

Anderson, Dorothy V.	Mason, Gerald
Beresford, H. W. Dudley	Moore, John C.
Bescoby, Hazel-Jean	Morris, Robert A.
Birmingham, Verna E.	Morrow, David
Boyd, Eleanor G.	Muncy, William H.
Busby, Constance I.	McArthur, Joan R.
Campbell, Jack C.	Macaulay, Johnina M.
Clark, Frank B.	MacDonald, June G.
Clarke, Eleanor M.	McDougall, Barbara A.
Collins, Adrienne E.	MacEwen, Phyllis J.
Cooper, Joyce E.	Macfarlane, James D.
Dawson, Jessie M.	McIntyre, Robert F.
Dickinson, Margaret	McKinnon, Aileen K.
Douglas, Gordon C.	Maclea, Hilda I.
Durkin, D. Osborne	McLeod, Mary J.
Field, H. Frederick	MacLeod, O. Jacquelin
Fleck, Janet S.	Ogilvie, George F.
Fleming, Marion K.	Patten, Charles G.
Flemming, Helen V.	Pearson, Jean E.
Galloway, Virginia	Pratt, E. Doris
Glass, George E.	Pratt, Jean M.
Greyell, E. Melville	Ralph, Joyce E.
Hall, Katherine U.	Reed, Bernard
Hann, Helen M. E.	Robertson, Walter J.
Hansen, Melville B.	Sanford, Lionel M.
Hutton, Dorothy C.	Scott, Grace L.
Johanson, Lillian V.	Scott, Pauline I. L.
Johnston, Lorraine E.	Sellens, Kathleen A.
Kennedy, Josephine C.	Sivertz, Bent G.
Kerr, Samuel A.	Skae, Kathleen
Knox, A. William D.	Smith, Harry H.
Laird, Frank W.	Smith, Robert L.
Leslie, John D.	Staghall, Hattie R.
Lyttleton, Hugh A.	Stott, Isabel G.

THE DEGREE OF BACHELOR OF ARTS—GENERAL COURSE—(*Continued*)

Strong, St. Clair G.	Warne, John W.
Swan, Flora McK.	Whelan, Edgar B.
Todd, A. Ellis	Williams, Maud A.
Trapp, Nell	Wilson, Lloyd H.
Tribe, Jonathan	Wright, Helen L.
Walmsley, Harry L.	

THE DEGREE OF BACHELOR OF COMMERCE

*With Honours**(Names in alphabetical order in each class)**Class I*

McRae, Robert Wallace

*General Course**(Names in alphabetical order in each class)**Class I*

Reed, Bernard

Class II

Cosulich, Cecil S.	Rae, James A.
Day-Smith, Lyman C.	Robertson, Walter J.
Edmonds, W. Freth	Scott, Grace L.
Hoskins, Herbert C.	Smith, Frederick D.
Lamont, R. Alexander	Stark, John E.
Oyama, Kazuhiko	

Passed

Cowan, Maisie B.	Minichiello, Armando P.
Downey, Patrick J.	Moore, John
Dowrey, W. Ritchie	McLellan, William F.
Field, H. Frederick	Pearson, John W.
Gurry, Patrick E.	Pratt, E. Doris
Hudson, Alan G.	Rand, Donald R.
Ide, Henry	Ross, John M.
Jarvis, Richard J.	Stevenson, John H.
Kincade, Robert M.	Sweetnam, Allan G.
Leblanc, Renée M.	Tucker, Havelock J.
Mahood, Ian	Wilson, Leslie G.
Martin, William B.	Wilson, Robert A.

Faculty of Applied Science

THE DEGREE OF MASTER OF APPLIED SCIENCE

(Names in alphabetical order)

Little, Heward Wallace, B.A.Sc.	Major: Economic Geology	
	Minor: Ore Dressing	G
Thesis: "Silver-Lead Relationships in British Columbia."		
Maconachie, James Roy Alexander, B.A.Sc.	Major: Geology	
	Minor: Metallurgy	G
Thesis: "Petrological Study of the Dyke Rocks of the Whitewater Creek and Lyle Creek Area, Slocan District, British Columbia."		
Mead, Bruce Ronald, B.A., B.A.Sc.	Major: Chemistry	
	Minor: Physics	
Thesis: "The Heat Capacities of Cis and Trans Decahydronaphthalene."		
Patterson, Ralph Francis, B.A.Sc.	Major: Chemistry	
	Minor: Physics	
Thesis: "The Densities and Transition Points of Certain Long-chain Paraffin Hydrocarbons."		

THE DEGREE OF BACHELOR OF APPLIED SCIENCE
(Names in alphabetical order in each class)

Chemical Engineering

Honours

Bell, J. Douglas
Kemper, J. Howard
Leslie, John D.

Mair, John D.
Morel, Roy W. F.

Class I

Pilkington, William T.

Watson, Ernest L.

Class II

Barchard, Philip W.
Cavers, William J.
Gunn, John A. M.
Heim, W. Clare

Price, S. Raymond
Ussher, James W.
Van Allen, Alexander
Yip, Sun W., B.A.

Passed

Craighead, William A.
Killam, Cecil G.

Lawson, Robert G.
Patrick, James D.

Civil Engineering

Honours

Cook, Paul M.

McIntosh, Donald G.

Class II

Hansen, Melville B.
Lighthall, Charles H.

Stamer, Salomon
Warren, William

Electrical Engineering

Honours

Fraresso, Marino

Class II

Cosar, Jack
Duncan, Allix J.
Monasch, Louis B.
Parker, W. Alfred

Pogson, Joseph R.
Saito, George L.
Webb, Elwood S.

Forest Engineering

Honours

Armstrong, John B.

Cameron, Ian T.

Class I

Bennett, C. Erickson

Class II

Carey, Davis M.
Chard, Albert E.
Dixon, Allan H.
Lemare, John D.

Lind, Norman
Pogue, Henry M.
Provenzano, Angelo F.
Smellie, Ian McK.

Geological Engineering

Honours

Mathews, William H.

Class II

Burden, Stephen P.
Johnson, Earl W.

Lougheed, Milford S.
Ney, Charles S.

Passed

Anderson, Arthur T.

THE DEGREE OF BACHELOR OF APPLIED SCIENCE—(Continued)

Mechanical Engineering*Honours*Bogle, Roy T.
Eadie, John K. M.Kennedy, Milton McK.
Laird, Alan D. K.*Class I*Johnsen, Peter F. B.
Morris, Harold J.Pearce, Gordon F.
Stewart, Alec R. M.*Class II*

Carruthers, Harvey

Coulson, Alexander

Metallurgical Engineering*Class II*

McGregor, Donald J.

Runkle, John D.

Mining Engineering*Honours*

McIntosh, John S.

Class I

Pearce, Frederick G.

*Class II*Holland, Donaldson C.
Phelps, John L.
Taylor, Raymond R.Toombs, Ralph B.
Wylie, John W.*Passed*

Boe, Bernard

McLean, John C.

Nursing and Health*(Names in alphabetical order in each class)**Class I*

Loucks, J. Isabel

Walters, Edith M.

*Class II*Addison, Margaret S.
Davies, C. Viola
Frith, Monica M.
Grant, K. Lois
Kennedy, Janet S. M.
McCann, Elizabeth K.Nelson, Emily L.
Paulin, Dorothy E.
Peirson, Gertrude M.
Saunders, Helen A.
Steele, Margaret H.**Faculty of Agriculture**

THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE

*(Names in alphabetical order)*Hatcher, Gilbert Temple, B.S.A. Major: Agricultural
Economics
Minor: AgronomyThesis: "A Study of the History and Regional Distribution of Wheat
Production in British Columbia."Hornby, Cedric Albert, B.S.A. Major: Plant Nutrition
Minor: Horticulture

Thesis: "Responses of the Cuthbert Raspberry to Mineral Treatments."

Trumpour, Maurice Paul Dorland, B.S.A. Major: Plant Nutrition
Minor: Horticulture

Thesis: "The Maintenance of Fertility in Orchard Soils."

THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE
(Names in alphabetical order in each class)

Class I

McBride, Winifred J.
White, Gerald E.

Zink, Leonard A.

Class II

Billings, Frederick L.
Brown, Reginald H.
Campbell, M. Lois
DeBeck, H. Keary
Dickson, Bruce A.
Dougans, Douglas H.
Harris, Kathleen M.

Narod, Milton
Poole, Harold C.
Pratt, Jean M.
Ritchie, Henry T.
Steele, G. Lester
Teir, John B.
Twiss, Robert D.

Passed

Runkle, Pamela

DEGREES CONFERRED

OCTOBER, 1940

Faculty of Arts and Science

THE DEGREE OF MASTER OF ARTS

(Names in alphabetical order)

Akrigg, George Philip Vernon, B.A.....	Major: English Minor: Education
Thesis: "Matthew Arnold: The Early Years."	
Guthrie, John, B.A.....	Major: Chemistry Minor: Physics
Thesis: "The Distillation of Azeotropic Mixtures."	
Idyll, Clarence Purvis, B.A.....	Major: Zoology Minor: Botany
Thesis: "A Contribution to the Study of the Bottom Fauna of Some Portions of the Cowichan River, British Columbia."	
Richardson, Arthur George, B.A.....	Major: Psychology Minor: Philosophy
Thesis: "The Scope of Propaganda, Including a Survey to Determine Its Effect."	
Rothstein, Samuel, B.A.....	Major: French Minor: English
Thesis: "Le monde littéraire dans la <i>Comédie Humaine</i> ."	
Street, Elisabeth Ruth, B.A.....	Major: Psychology Minor: English
Thesis: "A Critical Evaluation of Attitude Measurement."	

THE DEGREE OF BACHELOR OF ARTS

With Honours

(Names in alphabetical order)

Barton, Edgar Charles.....	1st Class Honours in English Language and Literature
Hidaka, Kunio	2nd Class Honours in Economics and Political Science
Pronger, Lester James.....	2nd Class Honours in French
Riley, Kathleen	1st Class Honours in History

THE DEGREE OF BACHELOR OF ARTS
General Course
 (Names in alphabetical order in each class)

Class I

Hammett, Joseph F.

Class II

Abel, M. Beatrice
 Aberdeen, J. Frederick
 Aqua, Sidney S.
 Baxter, Edna L.
 Bazeley, W. Lawrence
 Blanchard, Herbert E.
 Bowbrick, John T.
 Burnett, Catharine L.
 Butler, Enid L.
 Cobbett, Douglas W.
 Cupit, Frank L.
 Elmes, Walter H.
 Ferguson, George
 Gagnon, James H.

Goddard, Ernest A.
 Haines, A. Roy
 King, Roy
 Kirk, John G.
 Lamb, Bessie
 Munro, Marjory H.
 Murphy, Stanley A.
 McLachlan, William H.
 Ovans, Charles D.
 Spring, Harry C. F.
 Stevenson, Frederick C.
 Tippet, William G.
 Williston, Ray G.

Passed

Adams, Robert W.
 Balfour, Elizabeth M.
 Burgess, William N.
 Butters, M. Elizabeth
 Campbell, Ewan D. K.
 Clark, Sidney H.
 Collier, Arthur G.
 Duncan, Morris R.
 Frazee, James L.
 Hipkin, Howard G.
 Humfrey, Frances E.
 Kier, Elden W.
 King, Barbara C.
 Logan, Clement
 McGill, Donald A. C.

Nuffield, Edward W.
 Owen, Gladys W.
 Poyntz, Phyllis L.
 Renwick, Norman T.
 Ritchie, Shiela R. J.
 Robson, Henry
 Salter, Audrey E.
 Sanford, Murray B.
 Sloan, Marion L.
 Stevenson, John H., B.Com.
 Strachan, Stewart A.
 Weiss, Rose
 Wilbur, Gertrude L.
 Wilson, Douglas M.

THE DEGREE OF BACHELOR OF COMMERCE

Passed

Rita, F. Joseph

Faculty of Applied Science

THE DEGREE OF BACHELOR OF APPLIED SCIENCE

Chemical Engineering*Passed*

Walmsley, Harry L.

Faculty of Agriculture

THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE

Reid, Edgar Cameron, B.S.A. Major: Agronomy
 Minor: Genetics

Thesis: "Influence of a Paper Mulch on a Clay Soil."

THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

(Names in alphabetical order)

Class II

Atkinson, Robert G.
Calder, William A. G.

Hardy, Frank W.

MEDALS, SCHOLARSHIPS, PRIZES AND BURSARIES

AWARDED MAY, 1940

MEDALS

The Governor-General's Gold Medal (Head of Graduating Class for the B.A. Degree)..... Benjamin N. Moys
 The Kiwanis Club Gold Medal (Commerce)..... Robert W. McRae
 The United Empire Loyalists' Association Medal (History)..... Rosemary L. Lansdowne
 The Lefevre Gold Medal and Scholarship (Chemistry) \$150.00..... John D. Leslie
 (Scholarship by reversion to Kenneth G. Booth)
 The Wilfrid Sadler Memorial Gold Medal (Head of Graduating Class for the B.S.A. Degree)..... Winifred J. McBride

SCHOLARSHIPS FOR GRADUATES

University Graduate Scholarship, \$200.00..... Benjamin N. Moys
 The Anne Wesbrook Scholarship, \$125.00..... James B. Brown
 The Dr. F. J. Nicholson Scholarships:
 1. For Chemistry, \$500.00..... Ralph F. Patterson, B.A.Sc.
 2. For Geology, \$500.00..... J. Roy A. Maconachie, B.A.Sc.
 The Native Daughters of British Columbia Scholarship, \$50.00
 (Early B. C. History)..... No award
 The B'nai B'rith District No. 4 Hillel Foundation Scholarships, \$125.00 each:
 1. Warren L. Godson, B.A.
 2. Jean M. Pratt
 The Standard Oil Company of British Columbia Limited Scholarship, \$600.00
 John D. Leslie

SCHOLARSHIPS FOR UNDERGRADUATES

I. IN ALL FACULTIES

University Great War Scholarships (First Year) \$175.00:
 1. Geoffrey R. Caine
 2. Daima Edwards

II. IN ARTS AND SCIENCE

Third Year

University Scholarships in Arts and Science (general proficiency) \$175.00:
 Group (1)—Joyce K. Morris
 Group (2)—Margaret C. Crute
 N. Leo Klein Memorial Scholarship (general proficiency, Commerce) \$50.00
 Robert M. Clark
 The John and Annie Southcott Memorial Scholarship, \$100.00
 (B. C. History)..... John R. Meredith
 The Ahepa Scholarship (Proficiency in Greek) \$75.00..... Bryan C. Colwell

SCHOLARSHIPS FOR UNDERGRADUATES—(Continued)

Second Year

University Scholarship in Arts and Science (general proficiency)	\$175.00:
1. Edward Gross	
2. Walter Krausse	
Vancouver Women's Canadian Club Scholarship (First in Canadian History)	\$100.00.....
Rosemary L. Lansdowne (First Year)	
by reversion to John J. Enwright	
The Shaw Memorial Scholarship (First in two of English, Latin and Greek)	\$125.00.....
John M. R. Margeson	
The McGill Graduates Scholarship (First in English and French)	\$125.00
John M. R. Margeson } Equal	
Elspeth Munro } Awarded to Elspeth Munro	
The Terminal City Club Memorial Scholarship (First in English and Economics)	\$100.00.....
Lois A. Nicholson	

First Year

Royal Institution Scholarship (general proficiency)	\$175.00*
Rosemary L. Lansdowne	
University Scholarships in Arts and Science (general proficiency)	\$175.00*:
1. Carl E. Pearson	
2. Neil L. Wilson	
The Beverley Cayley Scholarship (First male student in English)	\$100.00
Neil L. Wilson, by reversion to Geoffrey A. Benny	

III. IN APPLIED SCIENCE

Vancouver Women's Canadian Club Scholarship in Nursing and Health,	\$100.00.....
Edna G. Howard	
The Dunsmuir Scholarship (Highest in Mining Engineering, proceeding to the Fifth Year)	\$150.00.....
Arthur C. Rae	
University Scholarship in Applied Science (general proficiency, proceeding to the Fourth Year)	\$225.00.....
H. Vincent Casson	
Royal Institution Scholarship in Applied Science (general proficiency, proceeding to the Third Year)	\$225.00.....
Ronald B. Carter	
The G. M. Dawson Scholarship (Highest in Geological Engineering, Geological subjects, proceeding to the Fifth Year)	\$50.00.....
William J. Lynott	
The B'nai B'rith Auxillary No. 77 Scholarship (Highest in Chemical Engineering, proceeding to the Fifth Year)	\$50.00.....
Elof C. Rosenberg	

IV. IN AGRICULTURE

University Scholarship in Agriculture (general proficiency, proceeding to the Second Year)	\$175.00.....
Florence R. Tamboline	
The David Thom Scholarship (general proficiency, proceeding to the Third Year)	\$100.00.....
Nora E. Neilson	
The British Columbia Fruit Growers' Association Golden Jubilee Scholarship (proceeding to the Horticultural Course of the Fourth Year)	\$100.00
W. Douglas Christie	

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

PRIZES

I. IN ALL FACULTIES

The University Essay Prize (Books) \$25.00	Edgar C. Barton
Honourable Mention—Victor G. Hopwood	
The Players' Club Prize (Original Play) \$50.00	No award

II. IN ARTS AND SCIENCE

The John Marr Memorial Prize, \$25.00	Neil A. Swainson, B.A.
Honourable Mention—Robert J. Boroughs, B.A.	
The University of British Columbia Graduate Historical Society Prize (Books) \$25.00	Donald G. Pyle
The H. Nemichi Essay Prize, \$50.00	Fujiyoshi Yamada
The Frances Willard Prize, \$50.00	Elisabeth R. Street, B.A.

III. IN APPLIED SCIENCE

The Convocation Prize (general proficiency in Fifth Year) \$50.00	John D. Leslie
Engineering Institute of Canada, Vancouver Branch, Walter Moberly Memorial Prize (Engineering Thesis in Fifth Year) (Books) \$25.00:	
William H. Mathews (Geological Eng.) "Geology of the Black Tusk Area"	
The Association of Professional Engineers' Prizes (Books) \$25.00 each:	
1. Allyn St. C. Richardson, Chemical Engineering: "Accuracy Required in Observations on a Stadia Transit Survey"	
2. Garth Griffiths, Electrical Engineering: "The British Columbia Electric Railway Company's Distribution System Serving Vancouver Island"	
3. William J. Lynott, Geological Engineering: "Geological Survey of the Coal Creek Mining Area"	
4. Charles W. Parker, Mechanical Engineering: "Air Conditioning of Railroad Passenger Cars"	
5. George C. Olson, Metallurgical Engineering: "Sulphur Dioxide Recovery at Trail."	
The Engineering Institute of Canada Prize (Fourth Year) \$25.00	Charles V. Ryder
The Provincial Board of Health Prizes in Public Health Nursing, \$100.00:	
1. Edith Walters, \$30.00	
2. Isabel Loucks, \$20.00	
3. Trena Hunter, \$20.00	
4. Helen Saunders, \$15.00	
5. Lois Grant, \$15.00	
The British Columbia Lumber and Shingle Manufacturers' Association Prize, \$25.00	Raymond R. Taylor

BURSARIES

The Captain LeRoy Memorial Bursary (preference to returned soldiers or dependents) \$250.00	John B. Thwaites
The Khaki University and Y. M. C. A. Memorial Fund Bursaries, \$100.00 each (in alphabetical order):	
1. Gordon A. Calderhead (Victoria College)	6. Harry D. Laronde
2. P. Robert Cowan	7. Francis H. Leacy
3. George J. Crane	8. Earle W. Piercy
4. Grace I. Cuthbert	9. David J. Rose (Victoria College)
5. Harry M. Evans (Victoria College)	10. Anne B. Underhill
The University Women's Club Bursary, \$100.00	Victoria J. Brown
The Geldart Riadore Bursary, \$175.00	Echo L. R. Lidster

THE FOLLOWING AWARDS ARE ANNOUNCED BY SENATE

- The Rhodes Scholarship.....Henry Basil Robinson
 The I.O.D.E. Scott Memorial Scholarship (First in Biology) \$100.00
 George E. Sleath
 The I.O.D.E. War Memorial Scholarship (Overseas).....Faith M. Grigsby, B.A.

AWARDED AFTER THE MAY CONGREGATION

University and Royal Institution Scholarships for University Entrance:

- Provincial—\$175.00.....Muriel A. I. McDiarmid
 District 1—\$175.00.....George A. Baxter
 \$175.00.....George H. Le Bus
 District 2—\$175.00.....Richard A. Kendall
 \$175.00.....James L. Bryant
 District 3—\$175.00.....Mary J. Handling
 \$175.00.....Helen Urquhart
 District 4—\$175.00.....Richard M. Bibbs
 \$175.00.....Basil A. Dunell } Equal
 (Special—\$175.00).....Ralph D. Barer }
 District 5—\$175.00.....Frank S. Mathews
 \$175.00.....Marjorie A. Sandys
 District 6—\$175.00.....Donald B. Robinson
 \$175.00.....Douglas A. J. Millar
 District 7—\$175.00.....Kenneth D. Hester
 by reversion to Mary C. Philpot
 \$175.00.....Ada E. Littler

University and Royal Institution Scholarships for Senior Matriculation:

- Provincial—\$175.00.....Llewelyn B. Davies
 \$175.00.....Geoffrey L. T. Ashe
 \$175.00.....Annie B. Peterson } Equal
 Barbara M. D. Burrows }
 (Special Scholarship recommended, but relinquished)
 by reversion to Annie B. Peterson
 \$175.00.....Phyllis J. Hill-Tout
 by reversion to Hiroji R. Yamanaka,
 by reversion to Winnifred H. Dalin
 \$175.00.....Harold W. Holy
 \$175.00.....Rosamund A. Russell

The Summer Session Students' Association Scholarship, \$30.00

Christopher C. Wright

The British Columbia Teachers' Federation Scholarship, \$50.00

Bernard C. Gillie

The Vancouver Women's Canadian Club Scholarship (Canadian History)

\$100.00, relinquished by John J. Enwright, awarded by reversion to John
 M. R. Margeson (winner of The Shaw Memorial Scholarship), awarded
 by reversion to Don McK. Hanson

Khaki University and Y. M. C. A. Memorial Fund Bursary, \$100.00

Relinquished by Earle W. Piercy, awarded by reversion to Eric P. Nicol

The American Woman's Club Bursary, \$140.00.....Norma A. Erickson

The Inter-Sorority Alumnae Club Bursary, \$150.00 (\$75.00 each):

Anne B. Underhill } Equal
 Mary Beaton }

The Mildred Brock Memorial Bursary, \$75.00.....Lois A. Nicholson

The Lady Laurier Club Bursary, \$50.00.....Margaret M. Findlay

The Frances Milburn Bursary (Vancouver P.E.O. Sisterhood) \$150.00

Patricia E. Ball

AWARDED AFTER THE MAY CONGREGATION—(Continued)

The Faculty Women's Club Bursary, \$100.00.....	Grace Shortreed
The Alliance Française Bursary, \$50.00.....	Mildred F. Watts
The David Thom Bursaries:	
\$100.00.....	Kathleen M. Lacey
\$60.00.....	John A. Roe
\$75.00.....	James E. Oldfield
The William MacKenzie Swan Memorial Bursary, \$250.00.....	Charles W. Nash
The Phil Wilson Bursary in Forestry, \$225.00.....	James R. Johnston
The University Scholarship in Nursing and Health, \$175.00.....	Phyllis S. Rowe
The Britannia Mining and Smelting Company Limited Scholarship, \$250.00	Charles S. Ney, B.A.Sc.
The Cariboo Gold Quartz Mining Company Limited Scholarship, \$100.00	John D. Runkle, B.A.Sc.

1941-42

THE UNIVERSITY OF BRITISH COLUMBIA

UNIVERSITY SUMMER SESSION, 1942

Seven Weeks—July 6th to August 21st

The Announcement of the courses to be offered in a Summer Session will be issued in January if possible.

No course may be offered for which there are fewer than eight registrations. Students, therefore, desiring any courses, particularly Third and Fourth Year courses, are requested to advise the Director of the Summer Session as early as possible and not later than May 15 as to the courses desired. If the demand for these courses seems adequate, an effort will be made to offer them.

The regulations, etc., governing the Summer Session, the Directed Reading Courses and the Extra-session classes follow :

COURSES LEADING TO THE DEGREE OF B.A.

1. The degree of B.A. will be granted on completion of courses amounting to 60 units chosen in conformity with Calendar regulations. (See pages 67-185.)

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-sessional 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-sessional 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-sessional classes.

Courses which count towards an Honours B.A. degree or the M.A. degree in the Winter Session will be allowed equivalent credit in the Summer Session.

REGISTRATION AND ATTENDANCE

1. *Students are required to register on or before the opening day of the session. A fee of two dollars (\$2.00) will be charged for late registration.*

2. All students desiring to obtain formal credit for work done in the Summer Session must, upon entrance, present evidence of Junior Matriculation standing of this Province, or its equivalent.

3. Summer Session students shall be registered as follows:

Students proceeding to a degree in due course whose Full Junior Matriculation standing has been approved shall register as *First Year* students until they have completed the 15 units of work prescribed by the Calendar.

Students proceeding to a degree in due course with Full First Year standing shall register as *Second Year* students until they have completed the Second Year in conformity with Calendar regulations.

Those students only may register as *Third* or *Fourth Year* students who have completed the work of the previous years in accordance with Calendar regulations.

Students who do not come under one of these classes shall register as *Partial* students.

4. Students must attend regularly the classes in a course for which they register. Those whose unexcused absences from such a course exceed one-eighth of its total number of meetings will not be credited with attendance in that course.

FEEES

For statement of fees, see page 42.

EXAMINATIONS AND ADVANCEMENT

1. Summer Session examinations are held at the close of the Summer Session. Students attending Extra-session classes will be tested by the ordinary Winter Session examinations.

2. The passing mark on each paper is 50 per cent. Credit, however, will not be granted for any part of a course until the whole course has been completed. Part courses in different subjects may not be combined.

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

4. Supplemental examinations may be granted by Faculty to students attending the Summer Session or the Extra-session classes in the subject or subjects in which they have failed, but a student obtaining less than 30 per cent. in a subject will not be granted a supplemental in that subject. Supplemental examinations on Summer Session Courses are held on the opening day of the Summer Session. If the course is given again in the current Summer Session, the candidate may write the final examination in this course as a supplemental.

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.

In August, 1940, the Senate and the Board of Governors of the University passed a regulation making military training compulsory for all physically fit male students for the duration of the war. As a result, when the session opened in September the Corps was faced with an unprecedented number of recruits.

Those taking military training were divided into two groups—one taking officer training work and the other taking basic military training. The number enrolled in each group was as follows:

Officer Training Group (including graduates not in attendance at the University).....	939
Basic Training Group.....	802
Total.....	1741

The Corps provides opportunities for students to qualify for commissions in the Canadian Army and to take training which will be valuable in case they may subsequently serve with either the Royal Canadian Navy or the Royal Canadian Air Force. Those taking the Basic Military Training fulfill the requirements of the National Resources Mobilisation Act.

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, the Registrar, 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.

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: Harold D. Lumsden.

Secretary: Betty D. Bolduc.

Treasurer: Peter J. McTavish.

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 all campus clubs whose aims are either literary or scientific. The President of the Executive 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, 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 Camera Club is equipped with dark room and facilities for all those interested in photography of any kind.

The Mamooks is the campus service organization, participating in yell leading, ticket selling, decorating, etc.

Recognition of outstanding club members takes the form of election to the Honorary Literary and Scientific Society. A limited number of students nominated by their respective clubs are voted this award each year.

Women's Athletics

The Women's Athletic Association, under the jurisdiction of the Women's Athletic Directorate, comprises all the women's athletic clubs of the University. The W. A. D. is made up of: The President of W. A. A., the Director of Physical Education for Women, two faculty members, and three students. Its aim is to give the maximum of efficiency and co-operation in the administration of the extra-mural and intra-mural athletic programme of the University. The Directorate is designed to carry out long-term policies by establishing a continuity in the personnel.

The chief athletic clubs under the jurisdiction of the Women's Athletic Association are briefly described, as follows:

The Women's Basketball Club enters two teams in the City Cagette League, plays challenge games, and competes in the Dominion Championships.

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 Rugby 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: Arthur Laing, B.S.A.

Secretary: Isabella E. Arthur, B.A., B.L.Sc.

Treasurer: Bruce A. Robinson, B.A., B.A.Sc.

The Alumni Association of the University of British Columbia is composed of Honorary, Active and Associate members. Honorary membership includes all members of the Board of Governors and any honorary life members appointed by the Association from time to time. Active membership includes all Association members who have paid their annual fee of \$1.00 or a life membership fee of \$10.00. Associate membership includes all other graduates of the University.

The aims and objects of the Association are:

- (a) To bring about the unity of all graduates of the University of British Columbia and to further among them the spirit of friendship of undergraduate days;
- (b) To instill in all graduates of the University of British Columbia a feeling of loyalty to the University and a sense of responsibility for the continuance of the educational work of the University and for service to the public of British Columbia;
- (c) To support suitable undertakings for the facilitation of the work of the University or of education in general, and to co-operate with organizations with the same aims and objects;
- (d) To educate public opinion regarding the use and benefit of the University of British Columbia, and education in general;
- (e) To adopt a definite policy on any question directly or indirectly affecting the University of British Columbia, education in the Province of British Columbia or graduates of the University of British Columbia, or persons engaged in educational work in the Province of British Columbia.

The new Constitution of the Alumni Association has provided for a system of branches to be organized in any place where there are a sufficient number of University of British Columbia Alumni to make an active organization.

An Executive Council composed of a General Executive elected at the Annual Meeting, and appointed representatives from each organized branch, is the governing body of the Association. Through this Council each branch is kept in touch with the activities of the other branches, and is given a voice in the organization and operation of the Alumni Association as a whole.

Bulletins are sent out by the General Executive periodically to all active members.

The association magazine, called "The Graduate Chronicle," is issued 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.

SUMMER SESSION STUDENTS' ASSOCIATION

1940-1941 EXECUTIVE

President: Kenneth Ross.

Secretary: Jack Merrell.

Treasurer: C. E. Clay.

The Summer Session Students' Association of the University of British Columbia is composed of all students in attendance at the Summer Session. All members are required to pay a fee of \$2.00, payable at time of registration.

This student organization was at first organized as a body to care for the purely social requirements of the Summer Session. Growth and expansion down through the years have brought it to one of major importance on the summer campus.

Dances, banquets, teas, musicales, lectures, quiz programmes, athletic tournaments embracing golf, tennis, badminton, horseshoes, and table tennis, all fall within the association executives' scope. On the more serious side the executive deals with student resolutions, fees, matters of constitution; in reality, all matters pertaining to student life at Summer Session. It serves as a liaison group between the student body and the various governing bodies of the University and helps to provide a proper balance between academic pursuit and recreation.

The Summer Session Students' Association holds at least two general meetings each summer. The executive meets at least weekly during the summer and as often as deemed necessary throughout the year.

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 Psychology 1, or Economics 1 or 2	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, Beginners' German, Greek A, Greek 2, History 1, History 2, History 3, †Beginners' Latin, Latin 1, Latin 2, Mathematics 2, Mathematics 3, Psychology 1, Physics A, Physics 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

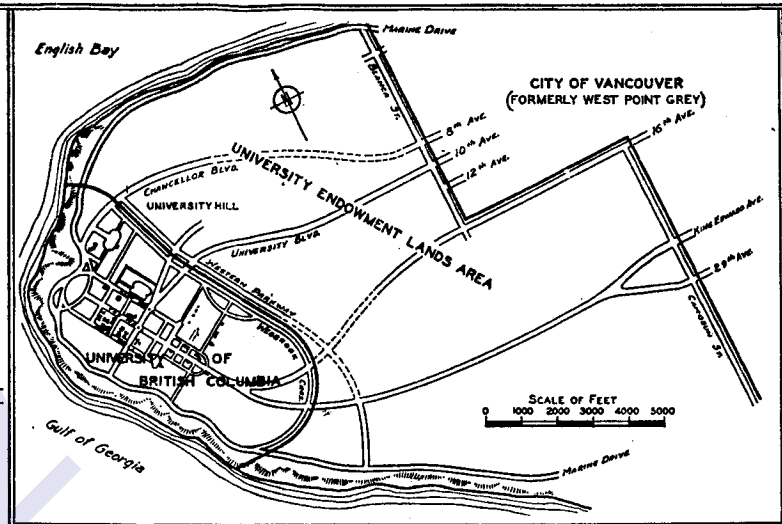
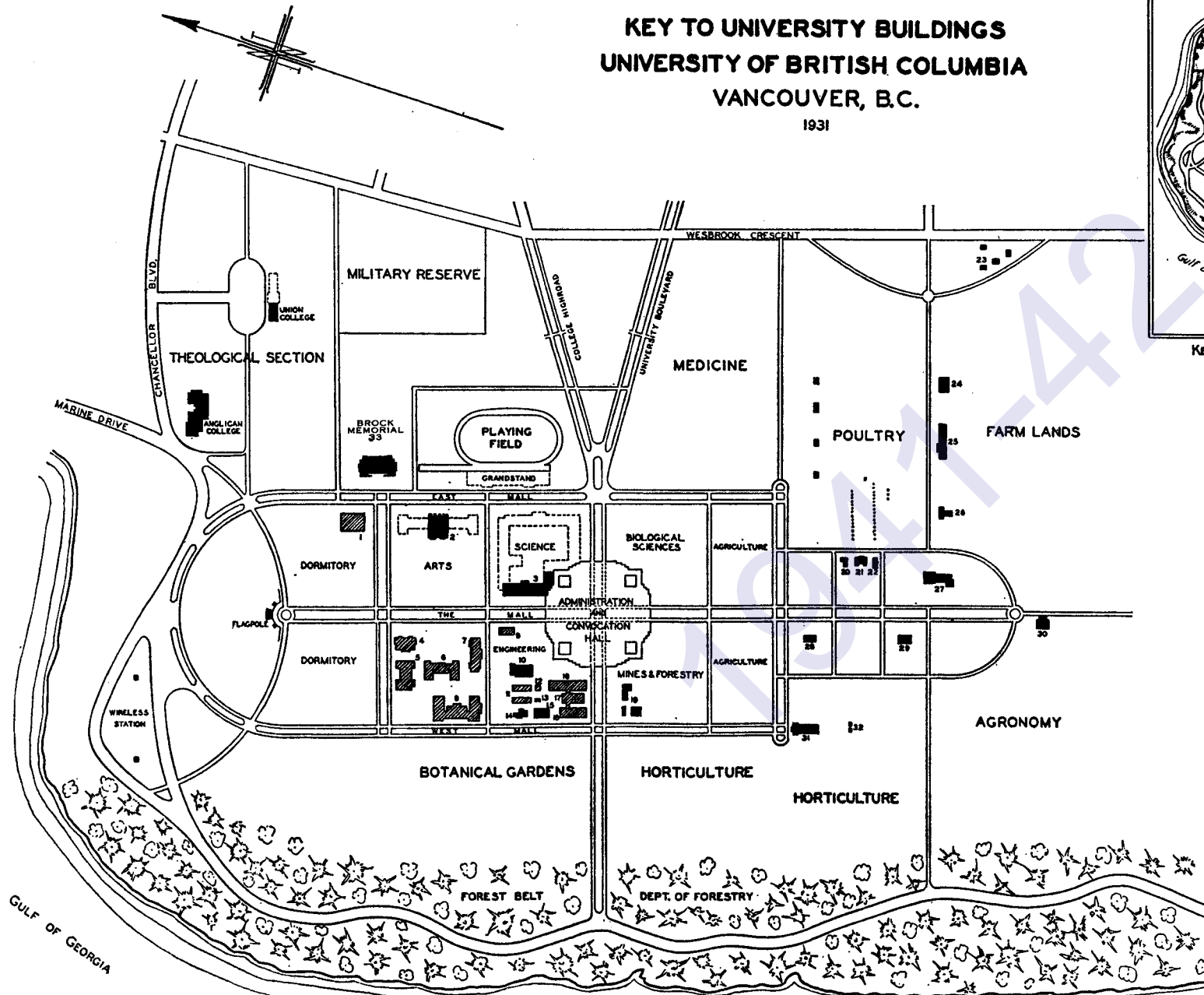
REV. D. P. WATNEY, B.A., B.D.

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
- 15 WORKSHOPS
- 16 MINING, METALLURGY & HYDRAULICS
- 17 ELECTRICAL LABORATORIES
- 18 MECHANICAL LABORATORIES
- 19 FEDERAL FOREST PRODUCTS LABORATORIES
- 20 FARM DAIRY
- 21 VOCATIONAL BUILDINGS (AGRICULTURAL)
- 22 FARM COTTAGES
- 23 SHEEP BARN
- 24 BEEF BARN
- 25 PIGGERY
- 26 DAIRY BARN
- 27 HORTICULTURAL BARN
- 28 AGRONOMY
- 29 HORSE BARN
- 30 GREENHOUSE
- 31 FORESTRY FIELD HOUSES
- 32 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 22
- FARM DAIRY 20
- FEDERAL FOREST PRODUCTS LABS. 19
- FIREHALL 14
- FORESTRY FIELD HOUSES 31
- GARAGES 11
- GREENHOUSE 31
- GYMNASIUM 1
- HORSE BARN 30
- HORTICULTURAL BARN 28
- HYDRAULICS LABORATORY 16
- LIBRARY 2
- MECHANICAL LABORATORIES 18
- 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