

The University
OF
British Columbia



CALENDAR

THIRTIETH SESSION
1944-1945

VANCOUVER, BRITISH COLUMBIA
1944

IMPORTANT NOTICES

According to the regulations of National Selective Service any physically fit male student

- (1) who refuses to enrol in the C. O. T. C. or other training unit, or
- (2) who fails to perform therein the required training, or
- (3) who fails to pass any term or yearly academic examination, unless such failure is considered to be due to circumstances beyond his control,

shall be reported to the Divisional Registrar and shall be called out forthwith.

No student with unsatisfactory standing will be permitted to register in September without the permission of Faculty. (Page 34.)

Attention is called to the following Calendar changes:

Degree and Course in Home Economics. (Pages 100 and 178.)

Geography 1 as a laboratory science. (Pages 83 and 169.)

Course for B.Com.: 60 per cent required in Economics 1. (Pages 89 and 319.)

Summary of Training Provisions of the Post-Discharge Re-establishment Order P.C. 7633. (Page 364.)

New Awards:

The Powell River Company Limited Scholarship. (Page 47.)

The British Columbia Electric Railway Company Limited Research Scholarship. (Page 47.)

The Consolidated Mining and Smelting Company of Canada Limited Fellowship. (Page 47.)

The R. Randolph Bruce Scholarship. (Page 52.)

The British Columbia Electric Railway Company Limited Scholarships. (Page 52.)

The Ahepa Prize. (Page 55.)

The Dorothy and William Dorbils Prize in Zoology. (Page 56.)

The Timber Preservers Limited Prizes. (Page 57.)

The Alberta Meat Company Bursary. (Page 63.)

The Mary C. Lipsett Bursary. (Page 63.)

The Rotary Memorial Bursaries. (Page 63.)

THE DOMINION-PROVINCIAL YOUTH TRAINING BURSARIES

Under the Dominion-Provincial Youth Training Programme a sum of money has been set aside to aid University students who can offer proof of scholastic ability and financial need.

Applications may be filed under one of the following sections.

SECTION I.

Regular students in any year, in any Faculty, who are not eligible under Section II.

SECTION II

Regular students (but not First Year students) who are proceeding to degrees in Engineering, Science (Mathematics, Physics, or Chemistry), Medicine, Dentistry, or Nursing.

Application forms may be secured from Colonel F. T. Fairey, Director of Technical Education, Victoria, B. C., to whom they must be returned by September 1st, 1944. 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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1944

1944-45

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ACADEMIC YEAR

1944

August

- 11th Friday } Supplemental examinations—Second Year Nursing.
12th Saturday }
15th Tuesday } Last day for submission of applications for supplemental examinations.
15th Tuesday } Last day for submission of applications for admission to Second Year Nursing and to the Teacher Training Course.

September

- 1st Friday } ACADEMIC YEAR begins.
4th Monday } Labour Day. University closed September 2nd to 4th inclusive.
5th Tuesday to } Supplemental examinations.
12th Tuesday }
13th Wednesday } Last day for registration of all First and Second Year students. (See August 15th, above.)
15th Friday } Last day for registration of all other undergraduates except students in Extra-Sessional Classes and Directed Reading Courses.
15th Friday, 9 a.m. to }
4 p.m. } Programme for students registering for the first time.
16th Saturday, 9 a.m. to }
12 Noon } Lectures begin at 8:30 a.m.
18th Monday } Meeting of the Faculty Council. (Subsequent meetings to be held at the call of the President.)
29th Friday }

October

- 2nd Monday } Last day for change in students' courses.
2nd Monday } Last day for handing in graduation essays and theses (Autumn Congregation).
2nd 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.
4th Wednesday } Last day for payment of fees for Autumn Graduation.
4th Wednesday } Meeting of the Faculty of Arts and Science.
6th Friday } Meeting of the Faculty of Agriculture.
..... } Thanksgiving Day. University closed.
13th Friday } Last day for registration and payment of fees of graduate students and of students in Extra-Sessional Classes and Directed Reading Courses.
18th Wednesday } Meeting of the Senate.
25th Wednesday } Congregation.

November

- 29th Wednesday } Meeting of the Faculty of Arts and Science.

December

- 1st Friday } Meeting of the Faculty of Agriculture.
13th Wednesday } Meeting of the Senate.
19th Tuesday } First Term ends.
25th Monday } Christmas Day. University closed December 23rd to 26th inclusive.

1 9 4 5

January

1st Monday	New Year's Day. University closed December 30th to January 1st inclusive.
3rd Wednesday	Second Term begins.
10th Wednesday	Last day for payment of Second Term fees. Payment of second instalment of scholarship money.
31st Wednesday	Meeting of the Faculty of Arts and Science.

February

2nd Friday	Meeting of the Faculty of Agriculture.
14th Wednesday	Meeting of the Senate.

March

30th Friday	Good Friday. University closed March 30th to April 2nd inclusive.
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April

12th Thursday	Last day of lectures.
12th Thursday	Last day for handing in graduation essays and theses.
14th Saturday to } 27th Friday	Sessional examinations.
	Field work in Applied Science begins immediately at the close of the examinations.
27th Friday	Last day for payment of graduation fees.

May

1st Tuesday	Last day for handing in applications for scholarships.
5th Saturday	Meeting of the Faculty of Agriculture.
7th Monday	Meeting of the Faculty of Arts and Science.
8th Tuesday	Meeting of the Senate.
10th Thursday	Congregation.
10th Thursday	Meeting of Convocation.
24th Thursday	Victoria Day. University closed.

June

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

1st Sunday	Dominion Day. University closed July 1st and 2nd.
3rd Tuesday	Summer Session begins.

August

15th Wednesday	Last day for submission of applications for supplemental examinations.
17th Friday	Summer Session ends.
24th Friday	Meeting of the Faculty of Arts and Science.
24th Friday	Meeting of the Senate.
31st Friday	ACADEMIC YEAR ends.

THE UNIVERSITY OF BRITISH COLUMBIA

VISITOR

COL. THE HON. W. C. WOODWARD, Lieutenant-Governor of
British Columbia.

CHANCELLOR

PRESIDENT

L. S. KLINCK, M.S.A., D.Sc., LL.D., Officier de l'Instruction Publique, F.R.S.C.
(Retiring June 30, 1944.)

NORMAN A. M. MACKENZIE, M.M., B.A., LL.B., LL.M., LL.D., K.C., F.R.S.C.
(From July 1, 1944.)

BOARD OF GOVERNORS

(a) Ex-officio:

The Chancellor (Chairman).

L. S. KLINCK, M.S.A., D.Sc., LL.D., Officier de l'Instruction Publique, F.R.S.C. (Retiring June 30, 1944.)

NORMAN A. M. MACKENZIE, M.M., B.A., LL.B., LL.M., LL.D., K.C., F.R.S.C. (From July 1, 1944.)

(b) Elected by Senate:

ARTHUR E. LORD, B.A., Vancouver.

H. T. LOGAN, M.C., M.A., Duncan.

Terms expire 1944.

J. F. WALKER, B.A.Sc., Ph.D., F.R.C.S., F.G.S.A., Victoria.

Term expires 1946.

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

WILLIAM GEORGE MURRIN, Vancouver, Term expires 1949.

EDWARD H. BARTON, Chilliwack. Term expires 1949.

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

Term expires 1945.

JOSEPH BADENOCH CLEARHUE, M.C., M.A., B.C.L., K.C., Victoria.

Term expires 1945.

..... Term expires 1947.

GEORGE T. CUNNINGHAM, Vancouver. Term expires 1947.

SENATE

(a) The Chancellor

The President (Chairman): L. S. KLINCK, M.S.A., D.Sc., LL.D., Officier de l'Instruction Publique, F.R.S.C. (Retiring June 30, 1944.)

NORMAN A. M. MACKENZIE, M.M., B.A., LL.B. (Dalhousie), LL.M. (Harvard), LL.D. (Mount Allison and New Brunswick), K.C., F.R.S.C. (From July 1, 1944.)

(b) Dean of the Faculty of Agriculture, F. M. CLEMENT, B.S.A., M.A.

Dean of the Faculty of Applied Science, JOHN NORISON FINLAYSON, M.Sc., LL.D., M.E.I.C., M.Am.Soc.C.E.

Dean of the Faculty of Arts and Science, DANIEL BUCHANAN, M.A., Ph.D., LL.D., F.R.S.C.

Representatives of the Faculty of Agriculture:

J. C. BERRY, M.S.A., Ph.D.; G. H. HARRIS, B.S.A., M.S., Ph.D. Terms expire 1945.

Representatives of the Faculty of Applied Science:

F. A. FORWARD, B.A.Sc., M.C.I.M., Mem.A.I.M.E., M.Aust.I.M.M.;
 H. J. MACLEOD, O.B.E., B.Sc., M.Sc., A.M., Ph.D., Mem.A.I.E.E.,
 M.E.I.C., Mem.I.R.E. Terms expire 1945.

Representatives of the Faculty of Arts and Science:

WALTER H. GAGE, M.A., O. J. TODD, A.B., Ph.D., F.R.S.C. Terms expire
 1945.

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

H. N. MACCORKINDALE, B.A., Vancouver. Term expires 1946.

FRANCIS J. BURD, Vancouver. Term expires 1946.

JOHN W. SPENCER, Victoria. Term expires 1946.

(d) The Principal of the Provincial Normal School, Vancouver, A. R. LORD, B.A.

The Principal of the Provincial Normal School, Victoria,

(e) Representative of the High School Principals and Assistants, W. R. McDougall, B.A., North Vancouver. Term expires 1947.

(f) Representatives of Affiliated Colleges:

Victoria College, Victoria, H. L. CAMPBELL, B.A., M.Ed. Term expires 1945.

Union College of British Columbia, Vancouver (Theological), Rev. J. G. BROWN, M.A., D.D. Term expires 1945.

The Anglican Theological College of British Columbia, Vancouver, Rev. H. R. TRUMPOUR, M.A., B.D., D.D. Term expires 1945.

(g) Elected by Convocation:

H. T. LOGAN, M.C., M.A., Duncan.

G. G. SEDGEWICK, B.A., Ph.D., Vancouver.

MISS M. DOROTHY MAWDSLEY, B.A., M.A., Ph.D., Vancouver.

A. E. LORD, B.A., Vancouver.

H. V. WARREN, B.A., B.A.Sc., B.Sc., D.Phil., Assoc.Inst.M.M., F.G.S.A., Vancouver.

A. E. D. GRAUER, B.A., Ph.D., Vancouver.

MISS ISOBEL HARVEY, M.A., Vancouver.

J. F. WALKER, B.A.Sc., Ph.D., F.R.S.C., F.G.S.A., Victoria.

SHERWOOD LETT, D.S.O., M.C., E.D., B.A., Vancouver.

MRS. SALLY MURPHY CREIGHTON, B.A., M.A., Vancouver.

L. A. ATKINSON, M.S.A., Vancouver.

C. A. H. WRIGHT, M.Sc., Ph.D., Trail.

FERGUS MUTRIE, B.S.A., Vancouver.

A. S. MATHESON, B.A., Kelowna.

HIS GRACE THE MOST REV. A. U. DEPENCIER, O.B.E., M.A., D.D., I.L.L.D., Vancouver.

Terms expire 1945.

(h) Representative of the British Columbia Teachers' Federation:

MISS FLORENCE S. MULLOY, B.A., Vancouver. Term expires 1946.

CONVOCATION

.....
 Chancellor of the University of British Columbia, Chairman.

F. D. BOLTON, B.A., B.A.Sc., Secretary.

OFFICERS AND STAFF

- L. S. KLINCK, B.S.A. (Toronto), M.S.A., D.Sc. (Iowa State College), LL.D. (Western Ontario), Officier de l'Instruction Publique, F.R.S.C., President. (Retiring June 30, 1944.)
- NORMAN A. M. MACKENZIE, M.M., B.A., LL.B. (Dalhousie), LL.M. (Harvard), LL.D. (Mount Allison and New Brunswick), K.C., F.R.S.C., President. (From July 1, 1944.)
- DANIEL BUCHANAN, M.A. (McMaster), Ph.D. (Chicago), LL.D. (McMaster), F.R.S.C., Dean of the Faculty of Arts and Science.
- JOHN NORISON FINLAYSON, M.Sc. (McGill), LL.D. (Manitoba), M.E.I.C., M.Am.Soc.C.E., Dean of the Faculty of Applied Science.
- F. M. CLEMENT, B.S.A. (Toronto), M.A. (Wisconsin), Dean of the Faculty of Agriculture.
- MISS M. DOROTHY MAWDSLEY, B.A. (McGill), M.A. (Brit. Col.), Ph.D. (Chicago), Dean of Women.
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- JOHN D. LEE, Superintendent of Buildings and Grounds.

FACULTY COUNCIL

- The President (Chairman): L. S. KLINCK, M.S.A., D.Sc., LL.D., Officier de l'Instruction Publique, F.R.S.C. (Retiring June 30, 1944.)
- NORMAN A. M. MACKENZIE, M.M., B.A., LL.B., LL.M., LL.D., K.C., F.R.S.C. (From July 1, 1944.)
- Dean of the Faculty of Arts and Science, DANIEL BUCHANAN, M.A., Ph.D., LL.D., F.R.S.C.
- Dean of the Faculty of Applied Science, JOHN NORISON FINLAYSON, M.Sc., LL.D., M.E.I.C., M.Am.Soc.C.E.
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JOHN RIDINGTON, Emeritus Librarian.

Department of Agricultural Economics

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Department of Animal Husbandry

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Department of Bacteriology and Preventive Medicine

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....., Instructor.

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J. GILBERT HOOLEY, M.A. (Brit. Col.), Ph.D. (Mass. Inst. of Technology), Assistant Professor.

LIONEL A. COX, M.A. (Brit. Col.), Lecturer.

Department of Civil Engineering

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J. FRED MUIR, B.Sc. (Manitoba), Professor.

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 LOUIS A. MACKEY, M.A. (Toronto), B.A. (Oxon.), Associate Professor.
 GEOFFREY B. RIDDEHOUGH, M.A. (Brit. Col.), M.A. (California), Assistant Professor.
 PATRICK C. F. GUTHRIE, B.A. (Manitoba), M.A. (Toronto), Instructor. (On leave of absence.)

Department of Commerce

- ELLIS H. MORROW, B.A. (Queen's), M.B.A. (Harvard), Professor and Head of the Department.
 ARCHIBALD W. CURRIE, B.A., B.Com. (Queen's), M.B.A., Dr.Com.Sc. (Harvard), Associate Professor.
 FREDERICK FIELD, C.A., Lecturer in Accountancy.
, Lecturer in Commercial Law.
, Lecturer in Commercial Law.

Department of Dairying

- BLYTHE EAGLES, B.A. (Brit. Col.), Ph.D. (Toronto), Professor and Head of the Department.
 MISS LOIS CAMPBELL, M.S.A. (Brit. Col.), Instructor.

Department of Economics, Political Science, and Sociology

- HENRY F. ANGUS, B.A. (McGill), B.C.L., M.A. (Oxon.), F.R.S.C., Professor and Head of the Department. (On leave of absence.)
 DANIEL BUCHANAN, M.A. (McMaster), Ph.D. (Chicago), LL.D. (McMaster), F.R.S.C., Acting Head of the Department.
 G. F. DRUMMOND, M.A. (St. Andrew's), M.Sc. (Econ.) (London), Professor.
 C. W. TOPPING, B.A. (Queen's), S.T.D. (Wesleyan Theol. College), A.M., Ph.D. (Columbia), Associate Professor.
 JOSEPH A. CRUMB, B.B.A. (Wash.), M.S., Ph.D. (Calif.), Associate Professor.
 MISS MARJORIE J. SMITH, A.B. (Minn.), A.M. (Chicago), Associate Professor of Social Work.
 MISS MARY C. GLEASON, A.B. (Vassar), M.S.S. (Smith), Assistant Professor of Social Work.

Department of Education

- GEORGE M. WEIR, B.A. (McGill), M.A. (Sask.), D.Paed. (Queen's), Professor and Head of the Department. (On leave of absence.)
 MAXWELL A. CAMERON, M.A. (Brit. Col.), Ph.D. (Toronto), Professor and Acting Head of the Department.
 FREDERICK T. TYLER, B.Sc., M.A., B.Ed. (Alberta), Ph.D. (California), Assistant Professor of Education and Psychology.
 CHARLES B. WOOD, B.A. (Toronto), A.M. (Columbia), Lecturer.

Department of English

- G. G. SEDGEWICK, B.A. (Dal.), Ph.D. (Harvard), Professor and Head of the Department.
- W. L. MACDONALD, B.A. (Toronto), M.A. (Wisconsin), Ph.D. (Harvard), Professor.
- FREDERICK G. C. WOOD, B.A. (McGill), A.M. (Harvard), Professor.
- THORLEIF LARSEN, M.A. (Toronto), B.A. (Oxon.), F.R.S.C., Professor.
- MISS M. DOROTHY MAWDSLEY, B.A. (McGill), M.A. (Brit. Col.), Ph.D. (Chicago), Associate Professor.
- HUNTER CAMPBELL LEWIS, M.A. (Brit. Col.), Assistant Professor.
- MRS. DOROTHY BLAKEY SMITH, M.A. (Brit. Col.), M.A. (Toronto), Ph.D. (London), Assistant Professor.
- EDMUND MORRISON, B.A. (Brit. Col.), A.M., Ph.D. (California), Assistant Professor.
- F. E. L. PRIESTLEY, M.A. (Alberta), Ph.D. (Toronto), Assistant Professor.
- JOHN H. CREIGHTON, M.A. (Toronto), Assistant Professor.
- G. PHILIP V. AKRIGG, M.A. (Brit. Col.), Instructor.

Department of Forestry

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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 ninth term in May, 1942. 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. Dr. Norman A. M. MacKenzie, President of the University of New Brunswick, has been appointed as the third President of the University of British Columbia, his appointment to be effective upon the retirement of President Klinck on June 30th, 1944.

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 situation, 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 140,000 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 1,750,000 printed cards. 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 now consists of over 1,250 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 900 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 1200 volumes, and is increasing as the Department's work develops.

The Extension Department's collection also includes more than 3,500 plays, for the service of dramatic groups and theatre students throughout the Province.

The extension Department's book and play collections are available to those who have registered with the Department.

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.

Museums

These consist of (1) the Burnet Collection of South Seas and other ethnological specimens, housed on the main floor of the Library; (2) the Geological and Geographical Museum, in Room 116, Applied Science Building; (3) the Zoological Museum, housed in various rooms of the Applied Science Building.

The Burnet Collection was made by the late Frank Burnet, who donated it and arranged it in its present home. It contains groups of artifacts representative of the ethnology and archaeology of various parts of the Pacific Basin. The largest unit, 1170 catalogued items, is from the islands of the South Pacific, but Malaysia and North and South America are also strongly represented.

The Geological and Geographical Museum has been developed as a medium for the visual instruction of students and visitors. It is closely coordinated with the Department of Geology and Geography, but is used freely by students of sociology and history, as well as by art students from city studios. The exhibits include the Dr. H. M. Ami collection of pre-historical artifacts from Les Eyzies, France; the Buttimer collection of Indian baskets; the R. A. Cumming collection of over 700 artifacts from the Marpole Kitchen Midden; the Michell Pierce collection of Eskimo clothing and utensils; the Peach and Horne geological model of the Assynt Mountains, Scotland; suites of fossils, minerals, birds, and mammals, relief map-models, and many other things of interest.

The Zoological Museum, containing material representative of both the vertebrate and the invertebrate fields, is housed mainly in the northern wing of the Applied Science Building. Owing to lack of room in the museum, the collection is scattered in hallways and rooms wherever space can be found. The collection of marine in-

vertebrates of the northeastern Pacific Ocean is one of the largest extant. A collection of 12 beautifully mounted heads of B. C. game, donated by Messrs. G. L. and R. J. Pop, hangs on the walls of Room 100, Applied Science Building, and a fine suite of African game horns, donated by Mr. W. F. Byers, hangs in Room 120 of the same building.

The collections are freely available to students and research institutions.

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. 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 and the Board of Governors 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. The Class of 1943 presented a public address system for the Brock Memorial Building and made a donation to the Library fund.

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 Biology and Botany

(For Herbarium and Botanical Gardens)

SEEDS

CANADA	Montreal Botanical Garden.
UNITED STATES	Mr. J. F. Davidson, California. The John H. Holliday Park, Indianapolis. U. S. Department of Agriculture, Washington.
BRITAIN	Royal Botanic Gardens, Kew. Botanic Garden, University of St. Andrews. Botanic Gardens, Glasnevin, Dublin.
PORTUGAL	Botanic Garden, University of Coimbra.

HERBARIUM SPECIMENS

Dr. C. H. Crickmay, Haney.
Mr. J. F. Davidson, California.
Mr. Fred Fodor, Kimberley.
Dr. Ian McT. Cowan.

Department of Geology and Geography

1. Dr. E. M. Burwash: Oyster shells from Scarborough, Toronto.
2. Consolidated Mining and Smelting Company: Specimens of boulangerite.
3. Mr. J. A. Eddleston: Indian stone mortar from Delia, Alberta.
4. Highland Bell Mining Company: Suites of rich silver ores.
5. Mr. F. R. Joubin: Miscellaneous ores and minerals.
6. Mr. S. N. Ross: Miscellaneous ores and minerals.
7. Mr. J. M. Turnbull: Miscellaneous ores and minerals.

Department of History

Mr. E. G. Baynes: Photographic study of Sir James Douglas.

Department of Zoology

(For Museum of Zoology)

Insects:

- Mr. E. R. Buckell, Dominion Entomological Laboratory, Kamloops: Collections of Vespine wasps.
 Mr. Phillip Carter, Vancouver: Collection of insects from the Cariboo highway.
 Dr. I. McT. Cowan, Vancouver: Ectoparasites of birds and mammals.
 Mr. Hugh B. Leech, Dominion Entomological Laboratory, Vernon: Collections of named Coleoptera and other insects.
 Mr. J. H. Munro, Okanagan Landing: Ectoparasites of birds and mammals.
 Mr. K. Racey, Vancouver: Ectoparasites of birds and mammals.
 Dr. M. Y. Williams, Vancouver: Ectoparasites of birds and mammals from the Alaska Highway.

Other invertebrates:

- Miss O. Boyd, Cowichan Lake: Polychaeta.
 Dr. I. McT. Cowan, Vancouver: Marine molluscs.
 Mr. D. Foskett, New Westminster: Fresh-water molluscs.
 Professor W. J. K. Harkness, Toronto: Fresh-water crustacea.
 Mr. Lynn Harvey, Chilliwack: Molluscs.
 Mr. H. F. Olds, Vancouver: Hawaiian coral.

Fishes:

- Mr. K. Alexander, Gambier Island: Several species.
 Mr. W. E. Barraclough, Nanaimo: Several species.
 Dr. G. C. Carl, Provincial Museum, Victoria: 1 *Remilegia australis*.
 Mr. S. Killick, Vancouver: Several species.

Amphibians and Reptiles:

- Miss O. Boyd, Cowichan Lake: 1 rusty salamander.
 Dr. V. C. Brink, Vancouver: 2 rattlesnakes.
 Dr. I. McT. Cowan, Vancouver: 2 red salamanders, 2 northern wood frogs.
 Mr. R. W. Pillsbury, Vancouver: Several collections of larval frogs and salamanders.

Birds:

- Major Allan Brooks, Okanagan Landing: 1 prairie falcon.
 Dr. G. C. Carl, Victoria: 1 whistling swan.
 Dr. I. McT. Cowan, Vancouver: 16 birds of 10 species.
 Professor G. J. Spencer, Vancouver: 1 long-eared owl.
 Mr. L. Smith, Surrey: 1 turkey vulture.
 Mr. J. W. P. Wardlaw, Penticton: 1 rosy finch, 1 burrowing owl.
 Dr. M. Y. Williams, Vancouver: 1 barred owl.
 Department of Mines and Resources, Ottawa, per J. A. Munro: 2 trumpeter swans.

Mammals:

- Dr. R. M. Anderson, Ottawa: 2 bats.
 Mr. J. E. Bastin, Vancouver: Otter skeleton.
 Mr. M. J. Biken, Vancouver: Skull of striped dolphin.
 Mr. A. C. Brooks, Okanagan Landing: 1 bat.
 Miss D. Dalziel, Okanagan Landing: 1 bat, 6 skulls of small mammals.
 Mr. R. S. Hayes, Duncan: Skull of Roosevelt elk.
 Mrs. E. Hearle, Kamloops: 1 buffalo skull.
 Mr. L. Jobin, Williams Lake: 4 bats.
 Mr. F. W. Johnson, U. S. Forest Service, New Mexico: 6 specimens of desert mule deer and 3 specimens of elk.
 Mr. R. E. Luscher, Vancouver: 1 red fox.
 Mr. E. A. Schwantje, Vancouver: 1 weasel.
 Mr. F. M. Shillaker, Chezacut: 5 lynx skulls.
 Mr. H. Wearne, Quick: Skulls of 2 mule deer and 2 moose.

(General Acknowledgments)

- B. C. Packers, Vancouver: Materials for class use.
 Dr. J. Bequaert, Harvard School of Tropical Medicine, Boston: Identification of B. C. Vespine wasps.
 Mr. E. R. Buckell, Dominion Entomological Laboratory, Kamloops: Further additions to the card index catalogue of the Journal of Economic Entomology.

- Mr. G. Holland, Dominion Entomological Laboratory, Kamloops: Identification of B. C. Aphaniptera.
- Dr. Harry Lange, University of California: Identification of B. C. Pterophoridae.
- Mr. H. B. Leech, Dominion Entomological Laboratory, Vernon: A further contribution of entomological books, bulletins, and separates.
- Mr. Allen Mall, Dominion Entomological Laboratory, Kamloops: Entomological literature.
- Dr. C. R. Twinn, Division of Entomology, Ottawa: Samples of recent wartime insecticides.

Gratefully acknowledged is the close cooperation and assistance of the Provincial Museum, through Director Dr. G. C. Carl; of the Provincial Game Department, through Commissioners F. R. Butler and J. G. Cunningham; of the Pacific Biological Station, through Director Dr. R. E. Foerster; and of the Dominion Division of Entomology, through Mr. E. R. Buckell of the Kamloops laboratory. These organizations have contributed most valuable assistance, particularly in supplying travelling and collecting facilities, for obtaining class, museum, and research materials, providing facilities for research work, loaning books, donating and loaning class and research specimens, etc.

1944-45

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 32, and for *Registration and Attendance*, see page 34.

Courses of Study

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 Education, Bachelor of Home Economics, Bachelor of Applied Science, Bachelor of Science in Forestry, and Bachelor of Science in Agriculture. In the Faculty of Arts and Science courses are offered leading to a Diploma in Social Work and a Teacher Training Diploma. 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 Master's hood is the same, lined with the distinctive colour. The Bachelor of Commerce hood differs from that of Bachelor of Arts by the addition of a white cord; that of the Bachelor of Science in Forestry from that of Bachelor of Applied Science by the addition of a green cord; while the Bachelor of Education hood has a border of white edged with a cord of University blue. The colours are, for Arts and Science, the University blue; for Applied Science, red; for Agriculture, maize.

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 the 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 the 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. 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 First 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.

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. Immediately on return to the University and before attending lectures, the student must appear in person, with the certificate, at the University Health Service. 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 within one day 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 *Announcement of the Summer Session*.

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. War-time conditions serve to emphasize the need for physical fitness. All medically fit men and women students are now required to devote at least one hour a week to physical training. The men take their work as part of the military training programme. Particular attention is given to activities which develop all-round physical condition rather than special techniques and skills in recreational or team sports.

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 accommodation 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.

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 students may be obtained from the Registrar, and a similar list for women students may be obtained from the Dean of Women. 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. The Dean of Women undertakes the inspection of all boarding houses and housekeeping rooms listed for the accommodation of women students. Any residence accommodation arranged by women students for themselves must also meet with the approval of the Dean of Women, who should be informed of such plans in advance. The cost of good board and lodging is from \$33 to \$40 a month; of a room alone, \$10 to \$15 a 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.

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.

The Faculty of Applied Science reserves the right of selection and admission of students entering the Second Year of the Combined Course and the Third Year of the Double Course in Arts and Science and Nursing.

The University reserves the right to limit the registration in, or to cancel, any of the courses listed. Limitation may be imposed if the numbers desiring any course are found to be too large for the lecture rooms and laboratories available for that course, or for the number of instructors in the department concerned, or for the equipment and supplies which can be obtained. Certain courses may be cancelled if the numbers of instructors in the departments concerned prove to be inadequate to offer all the courses listed.

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 Work, 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. 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 will be granted credit in the First Year in each subject in which they have made 50 per cent. or over.

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 Provincial 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.

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.

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 32.)

No student with unsatisfactory standing will be permitted to register in September without the permission of Faculty.

The Faculty of Applied Science reserves the right of selection and admission of students entering the Second Year of the Combined Course and the Third Year of the Double Course in Arts and Science and Nursing.

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.

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

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

1. There are four classes of students:

- (a) Graduate students—Students who are pursuing courses of study in a Faculty in which they hold a degree, whether they are proceeding to a Master's degree or not. Students, however, who are proceeding to a Bachelor's degree in another course in the same Faculty in which they hold a degree, or in another Faculty, will register as undergraduates.
- (b) Full undergraduates—Students proceeding to a degree in any Faculty who have passed all the examinations precedent to the year in which they are registered.
- (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 enrol 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 25th, 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 second week of the session. If the application is approved by the Faculty concerned, the Registrar will give the necessary notifications.

7. Partial students, who are not proceeding to a degree, are not normally required to pass an examination for admission, but before registering they must produce a certificate showing that they have satisfied the Dean and the heads of the departments concerned that they are qualified to pursue with advantage the course of study which they propose to undertake.

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

student may be permitted to sit for supplemental examination. (See regulation in each Faculty in reference to *Examinations and Advancement*.)

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

FEES

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

The registration fee is not returnable.

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

Fees are not transferable from one session to another.

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

The Sessional Fees are as follows:

FOR FULL AND CONDITIONED UNDERGRADUATES

IN ARTS AND SCIENCE:

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee.....	\$ 75.00
Alma Mater Fee.....	13.00
Caution Money.....	5.00
	93.00
<i>Second Term</i> —Payable on or before January 10th.....	75.00
	\$173.00

IN SOCIAL WORK COURSE:

<i>Registration</i> —Payable before registration	
For 6 units or less.....	\$ 2.00
For over 6 units.....	5.00
<i>Caution Money</i> —Payable October 16th.....	5.00
<i>Alma Mater Fee</i> *—Payable October 16th.....	13.00
<i>Course Fees</i> (payable at \$12.00 per unit for courses taken)	150.00*

Course fees due in any session may be paid in two equal instalments, on October 16th and January 10th.

*Social Work students taking any of Courses 1-13, Nursing 5, Nursing 27, and these courses only, are relieved from paying the Alma Mater fee.

IN TEACHER TRAINING COURSE:

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee	\$ 75.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 10th.....	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 2nd:	
Sessional Fee	\$100.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	118.00
<i>Second Term</i> —Payable on or before January 10th.....	100.00
All students taking the Spring Surveying School are required to pay \$3.00 Caution Money when paying their Second Term Sessional Fee.	<u>\$223.00</u>

IN NURSING AND PUBLIC HEALTH*:

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee	\$ 75.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 10th.....	75.00
	<u>\$173.00</u>

IN AGRICULTURE:

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee	\$ 75.00
Alma Mater Fee.....	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 10th.....	75.00
	<u>\$173.00</u>

*For Third, Fourth, and Fifth Year students in Nursing (i.e., students in the affiliated hospital) the Sessional fee is \$1.00, payable with an Alma Mater fee of \$4.00, on or before October 2nd.

Students admitted to a one-year course for graduate nurses and proceeding to the Certificate on a basis of part-time attendance over two or more years will pay \$9.00 per unit.

OCCUPATIONAL COURSE:*

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee.....	\$ 30.00
Alma Mater Fee.....	13.00
Caution Money.....	5.00
	48.00
<i>Second Term</i> —Payable on or before January 10th.....	30.00
	\$ 83.00

FOR PARTIAL STUDENTS

Fees per "Unit".....	\$12.00
<i>Registration</i> —Payable before registration	
For 6 units or less.....	2.00
For over 6 units.....	5.00
<i>First half</i> payable on or before October 2nd, along with	
Alma Mater Fee.....	13.00
Caution Money.....	5.00
<i>Second Half</i> payable on or before January 10th.	

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 16th.	
<i>Second Half Unit Fees</i> payable on or before January 10th.	

FOR GRADUATES

<i>Registration</i> —Payable before registration	
For 6 units or less.....	\$ 2.00
For over 6 units.....	5.00
<i>Caution Money</i> —Payable October 16th.....	5.00
<i>Course Fees</i> (payable at \$12.00 per unit for courses taken)	125.00
Course fees due in any session may be paid in two equal instalments, on October 16th and January 10th.	

FOR BACHELOR OF EDUCATION

<i>Registration</i> —Payable before registration	
For 6 units or less.....	\$ 2.00
For over 6 units.....	5.00
<i>Caution Money</i> —Payable October 16th.....	5.00
<i>Course Fees</i> (payable at \$12.00 per unit for courses taken)	150.00
Course fees due in any session may be paid in two equal instalments, on October 16th and January 10th.	

*NOTE.—Students transferring credit from the Occupational to the Degree Course in Agriculture must pay the difference in fees.

LATE REGISTRATION

See page 35 \$ 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 2nd shall pay their fees at the time of registration, failing which they become subject to the provisions of the preceding regulation.

Students borrowing books from the University Library for preparatory reading courses will be required to make the usual deposit of \$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 37.)

MEDALS, SCHOLARSHIPS, PRIZES, BURSARIES, AND LOANS FOR 1944-45

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 will 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.

If the invested funds do not produce the revenue required for the amount of scholarships and bursaries as named in the Calendar, these scholarships and bursaries will be correspondingly reduced.

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 that 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 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. Honours 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 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 1944-45 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

*See paragraph 1, page 41.

winning of this scholarship will not preclude the holder from enjoying the proceeds of a further award.

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 graduate studies and who is proceeding in the following year to 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 graduate study in this or any other approved university.

The Dr. F. J. Nicholson Scholarship*

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.

*See paragraph 1, page 41.

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

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

The John and Annie Southcott Memorial Scholarship*

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

The Native Daughters of 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 1943-44. 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

*See paragraph 1, page 41.

one Faculty in one year. Applications must be made on forms available at the Registrar's office.

The Standard Oil Co. 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 and Science 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 1943-44. 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

*See paragraph 1, page 41.

Mining Company Limited. 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 Powell River Company Limited Scholarship*

For research in wood chemistry, the Powell River Company Limited offers annually a scholarship of \$700, open to Honours graduates in Chemistry in the Faculty of Arts and Science, 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 Powell River Company. Recipients must be qualified in respect of scholarship, research ability, personality, and health to undertake graduate and research work.

Furthermore, if special aptitude is shown in carrying out this work, an equal amount may be offered for further graduate study and research in wood chemistry, in this or any other approved university.

The British Columbia Electric Railway Company Limited Research Scholarship*

The British Columbia Electric Railway Company Limited offers a scholarship of \$500 for research related to electrical and mechanical engineering problems. An additional amount not to exceed \$100 will be available for special equipment, for other expenses, or for extension of the research beyond the close of the Second Term. The scholarship is open to graduates in the Electrical and Mechanical Engineering courses in the Faculty of Applied Science. The topic of research will be chosen after consultation with the Dean of the Faculty, the Head of the Department, and the donors. The award will be made by Senate on the recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries, after consultation with the Dean of the Faculty.

The Consolidated Mining and Smelting Company of Canada Limited Fellowship*

The Consolidated Mining and Smelting Company of Canada Limited offers annually a fellowship of \$750 for research related to non-ferrous metals, fertilizers, and chemicals. An additional amount not to exceed \$450 will be available for special equipment or for other expenses or for the extension of the research beyond

*See paragraph 1, page 41.

the close of the Second Term. The Fellowship is open to graduates in the Faculty of Arts and Science, Applied Science, or Agriculture, in this or in any other recognized university, provided that in the Faculty of Arts and Science their major undergraduate work has been in the field of the sciences. The topic of research will be chosen after consultation with the Deans of the Faculties and with the donors. The award will be made by Senate on the recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries. Applications for the fellowship must be made to the Registrar not later than April 15th.

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 85.) 2. To the student standing highest with majors in group (2). (See page 85.) 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 examinations 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.

†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.

*See paragraph 1, page 41.

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.

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 1 or 2 in the Second Year in Arts and Science, and proceeding to a higher year.

The Imperial Order Daughters of the Empire Scott Memorial Scholarship*

This Scholarship of \$100, derived from an endowment founded by the Imperial Order Daughters of the Empire of the City of Vancouver, in memory of Captain Robert Falcon Scott, R.N., the Antarctic explorer, who sacrificed his life in the cause of science, will be awarded to a student who combines high standing in Biology 2 with promise of service in the Empire. The award will be made by the Joint Faculty Committee on Prizes and Scholarships in consultation with the Head of the Department of Biology and Botany. Applications should be submitted to the Registrar not later than the last day of the final examinations on forms provided for the purpose.

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,

*See paragraph 1, page 41.

†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.

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 Mr. I. J. Klein, 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 John and Annie Southcott Memorial Scholarship*

As on page 45.

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-session 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-session classes, or reading courses, and must continue in his Fourth Year at the University of British Columbia.

*See paragraph 1, page 41.

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 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.

*See paragraph 1, page 41.

†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 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.

The R. Randolph Bruce Scholarship

Out of the proceeds of a fund bequeathed to the University of British Columbia by the late Honourable R. Randolph Bruce in memory of his term as Official Visitor, a scholarship of \$200 will be offered annually to the undergraduate student standing highest in the Metallurgical Engineering course of the Fourth Year in Applied Science and proceeding to the Fifth Year.

The British Columbia Electric Railway Company Limited Scholarships

Two scholarships given by the British Columbia Electric Railway Company Limited will be available as follows:

- (1) the sum of \$200 will be awarded to the undergraduate student standing highest in the Electrical Engineering course of the Fourth Year in Applied Science, and proceeding to the Fifth Year;
- (2) the sum of \$200 will be awarded to the undergraduate student standing highest in the Mechanical Engineering course of the Fourth Year in Applied Science, 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.

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) the part of the Lower Mainland in the Fraser Harbour area, (5) the Fraser Valley, (6) Yale, (7) the 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) the Kootenays.

*See paragraph 1, page 41.

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 Dorothy and William Dorbils Prize in Canadian Literature

A cash prize of \$50 offered by Dorothy and William Dorbils will be awarded annually to the registered undergraduate or graduate student who writes the best essay on a subject in Canadian Literature. The subject will be set or approved by the Head of the Department of English, and the prize will be awarded on his recommendation. The essay must be 3000 words or more in length and must be typed; a copy of the winning essay must be forwarded to the donors of the prize.

If in any year no essay of sufficient merit is presented, the sum of \$50.00 will be used, or funded for use, in purchasing for the University an item or items of Canadiana, the selection to be made by the Head of the Department of English and the University Librarian.

*See paragraph 1, page 41.

2. IN ARTS AND SCIENCE

Frances Willard Prize*

A prize of \$50, given by the Woman's Christian Temperance Union of British Columbia, will be awarded to Third or Fourth Year undergraduates 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 1944-45 on recommendation of the Head of the Department of Philosophy and Psychology, essays to be submitted by April 10th, 1945.

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.

The Ahepa Prize

A prize 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 Fourth Year who has shown the greatest promise in Greek studies. If possible, the award will be made to an Honours student, but if there is no outstanding Honours student the scholarship may be given to a Pass student.

The Dorothy and William Dorbils Prize in Bacteriology and Preventive Medicine

A cash prize of \$50 offered by Dorothy and William Dorbils will be awarded to the student in the graduating year of the Faculty of Arts and Science whose work as an Honours student in Bacteriology and Preventive Medicine is regarded as outstanding. The award will be made on the recommendation of the Head of the Department of Bacteriology and Preventive Medicine. If no Honours student presents work of sufficient calibre, the prize may be awarded at the discretion of the Department to the best student majoring in Bacteriology and Preventive Medicine who has a First Class average in the advanced courses offered by the Department.

*See paragraph 1, page 41.

The Dorothy and William Dorbils Prize in Zoology

A cash prize of \$50 offered by Dorothy and William Dorbils will be awarded to the student in the graduating year of the Faculty of Arts and Science whose academic work and promise of research ability in the Honours course in Zoology have been outstanding. The award will be made on the recommendation of the Head of the Department of Zoology.

If no Honours student presents work sufficiently outstanding, the sum of \$50 will be used to purchase for the Library special research literature in zoology, the selection to be made by the Head of the Department of Zoology.

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, will be awarded for the best engineering thesis submitted by any Fifth Year student in the Faculty of Applied Science. This prize is given in memory of the late Walter Moberly, pioneer engineer and explorer, discoverer of the Yellowhead Pass through the Rocky Mountains, whose work in railway location has influenced so greatly the development of the Province of British Columbia.

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 Association. 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 Association.

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 Prizes*

Prizes of the value of \$100, \$50, and \$25, given by the British Columbia Lumber and Shingle Manufacturers' Association, will be awarded to the students enrolled in the course Structural Design 1 (C.E. 9) who submit the designs judged to be the best, of a wooden roof truss. The awards 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 with the donor. Applications should be forwarded to the Registrar not later than January 15th.

The William N. Kelly Prize

A prize of \$15 offered by Mr. William N. Kelly, M.E.I.C., Consulting Engineer and Marine Surveyor, Vancouver, will be awarded to the student entering the Fourth Year of the Faculty of Applied Science who obtains the highest standing in Mechanical Engineering 30, Machine Shop Practice. Skill in the use of hand tools will receive special consideration. The award will be made on the recommendation of the Head of the Department of Mechanical and Electrical Engineering.

The Timber Preservers Limited Prizes*

Prizes of the value of \$60, \$25, and \$15, given by the Timber Preservers Limited, will be awarded to the students registered in the Fifth Year of the Civil Engineering course in the Faculty of Applied Science who submit plans and specifications judged to be

*See paragraph 1, page 41.

the best of a structure of treated timber. The awards 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 with the donors.

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 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 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.

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.

*See paragraph 1, page 41.

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 the University.

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

The American Woman's Club Bursary*

A bursary of \$100, given by the American Woman's Club of Vancouver, will be available for the session 1944-45 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 \$200, 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, in memory of Mrs. Mildred Brock, wife of the late R. W. Brock, Dean of the Faculty of Applied Science, whose personal charm and high ideals were an inspiration to the students who greatly benefited by her sympathetic understanding and generosity, 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.

*See paragraph 1, page 41.

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 the session 1944-45 to assist a woman undergraduate who has completed at least one year in Arts and Science with high standing in English, and who could not otherwise continue her course. The award will be made on the recommendation of the Dean of Women, to whom applications should be sent not later than September 1st on forms available in the Registrar's office.

The Lady Laurier Club Bursary*

A bursary of the value of \$75, 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 \$25 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 September 15th.

The Faculty Women's Club Bursary*

A bursary of the value of \$75, 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.

*See paragraph 1, page 41.

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 Colonel and Mrs. W. G. Swan in memory of their son, William MacKenzie Swan, an outstanding all-round undergraduate student and popular athlete who died July 28th, 1937, as a result of injuries received in a fall from the Pattullo Bridge at New Westminster on which he was engaged as Assistant Engineer, will be awarded to a student or students registered in the Third, Fourth, or Fifth Year of the Faculty of Applied Science, requiring financial assistance to enable him or them to continue studies at the University. In making the award, consideration will be given to the academic record of the applicant and to his participation in undergraduate affairs. Applications on forms available in the Registrar's office must be filed with the Registrar not later than September 15th. 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 \$87.50 to be awarded to the student who has passed University Entrance or Senior Matriculation with the highest

*See paragraph 1, page 41.

standing and 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 \$50.00 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 \$60.00 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.

Delta Gamma Bursary for the Blind*

A bursary of \$100.00 will be awarded to a blind student requiring financial assistance to enable him or her to enter the University or to proceed to further studies. The award will be made by the Senate upon recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries acting in consultation with the Principal of the B. C. School for the Deaf and Blind, the Superintendent of the Canadian National Institute for the Blind of Vancouver, and an accredited representative of Delta Gamma fraternity. Applications should be in the hands of the Registrar by September 15th.

The Geldart Riadore Bursary*

A sum of \$175 will be awarded to a student who has completed at least one year of work in the Faculty of Agriculture, who is proceeding to a higher year in the Faculty, and who has given evidence of possessing those qualities necessary for community leadership. The award is to be made on the recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries in consultation with the Dean of the Faculty of Agriculture.

The Flying Officer Reverend George Robert Pringle Memorial Bursary*

A bursary of the annual value of \$200, endowed by friends and associates, in memory of the late Flying Officer Reverend George Robert Pringle, a much beloved graduate of outstanding Christian character and athletic ability who was killed on January 24th, 1943, while on Active Service overseas, will be awarded to a student who has completed his Third Year in any Faculty and is proceeding to his Fourth Year. To be eligible for this award the student

*See paragraph 1, page 41.

must show evidence of academic ability, sterling unselfish character, and active participation and leadership in University sport. 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 Alberta Meat Company Bursary*

A bursary of \$50, given by the Alberta Meat Company of Vancouver, will be awarded annually on the basis of merit and need to an Animal Husbandry student conducting livestock feeding trials at the University Farm. The award will be made by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries, on the recommendation of the Head of the Department of Animal Husbandry. Applications should be in the hands of the Registrar by September 15th.

The J. M. Taylor Bursary in Metallurgy*

A bursary of \$150, given by Mr. J. M. Taylor, Vancouver, for research work on cobalt ore, open to a student or students registered in the Fifth Year of the Department of Metallurgy in the Faculty of Applied Science, was awarded in the Session 1943-44. The topic of research was chosen after consultation with the donor and the Department of Metallurgy of the University. The award was made by the Senate on the recommendation of the Head of the Department of Mining and Metallurgy.

The Mary C. Lipsett Bursary*

A bursary of \$200, offered annually by Mrs. Mary C. Lipsett, will be awarded to a student who has completed at least the Second Year in the Faculty of Arts and Science, and who proposes to take his major work in Sociology or Psychology. In making the award, consideration will be given to the applicant's interest in problems of social anthropology and his ability to pursue work in that field. The award will be made by Senate upon the recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries, acting in consultation with the departments concerned.

The Rotary Memorial Bursaries*

To commemorate the sacrifice and services of Rotarians and their families in the Second World War, the Rotary Club of Vancouver offers annually to students at the University five bursaries of the value of \$200 each. These bursaries are open to students in any

*See paragraph 1, page 41.

year and in any Faculty. Wherever practicable, however, the five awards will be made to students in different years. Preference will be given to those who, during the Second World War were in the Services or the Merchant Navy, or to their dependents. To be eligible for the awards, applicants are required to be of good moral character and to have a reasonable interest in extra-curricular activities and a good record of scholastic attainment. Awards will be made only to those who have limited financial ability to enter the University or proceed to a higher year. The awards will be made on the recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than September 15th.

Special Bursaries Fund*

For the Session 1944-45 a Special Bursaries Fund has been made available by the Board of Governors to enable students to attend the University who would not otherwise be able to do so. To be eligible for an award from this fund a student must have attained at least Second Class standing in the examinations last written, and must give evidence of need.

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

LOANS

General Loan Fund

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

The Wheatley Memorial Loan Fund

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

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

*See paragraph 1, page 41.

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

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 the 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 Mr. Tsutae Sato 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 Medals, Scholarships, Prizes, 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 graduate work at any university of Great Britain, and in special cases at any university on the continent of Europe, in 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.

*See paragraph 1, page 41.

2. Have reached such a stage in his course at one of the universities of Canada that he will have completed at least two years at the university in question by October 1st of the year for which he is elected.

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

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

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

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

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 Honours 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 Honours 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.

For the duration of the war no award is being made and therefore no applications are being accepted until further notice.

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 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 1944-45.

Canadian Federation of University Women Scholarships*

The Travelling Scholarship of the Canadian Federation of University Women, of the value of \$1,250, available for study or research work, is open to any woman holding a degree from a Canadian university, who is not more than 35 years of age at the time of award. In general, preference will be given to those candidates who have completed one or more years of graduate study and have a definite course of study or research in view. The award is based on evidence of character, intellectual achievement, and promise of success in the subject to which the candidate is devoting herself.

*See paragraph 1, page 41.

The Junior Scholarship of the Canadian Federation of University Women, of the value of \$850, is open to any woman holding a degree from a Canadian university, who is not more than 25 years of age at the time of award. Preference will be given to students who have studied in only one university and who desire to continue their studies in another.

The proposed place and plan of study or research must be approved by the Scholarship Committee.

Application blanks and further information may be obtained from the Convener of the Scholarship Committee, Dr. Cecilia Krieger, University of Toronto, Toronto, Ont. Applications and recommendations must be received not later than February 1st.

1944-45

THE
FACULTY
OF
ARTS AND SCIENCE

THIRTIETH SESSION
1944-1945

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 233	Botany 4		Biology 2 a	Ap 101	
	Biology 3	Ap 237	Botany 7 a	Ap 235	Biology 2 b, Lab.		
	Botany 6 e	Ap 101	Chemistry 2 Lab.		Biology 3	Ap 237	
	Economics 6	Ag 100	Chemistry 18		Economics 6	Ag 100	
	Education 9		Commerce 9 (Econ. 7)	A 204	Education 9		
	English 1, Sec. 1	A 101, 106, 203, 206, 208	English 1, Sec. 3	A 100, 103, 106, 206	English 1, Sec. 1	A 101, 106, 203, 206, 208	
	English 13	A 100	French 2, Sec. 2	A 101, 104, 105	English 13	A 100	
	French 2, Sec. 1	A104, 108	German 1(a), Sec. 1	A 203	French 2, Sec. 1	A104, 108	
	Geology 4	Ap 102	German 3 c	A 201	Geology 4	Ap 102	
	Geology 11	Ap 120	Home Economics A&B	A 108	Geology 11	Ap 120	
	Geology 23	Ap 106	Home Economics 3 & 4		Latin 1, Sec. 1	A 102	
	Latin 1, Sec. 1	A 102	Latin 2, Sec. 1	A 207	Latin 7	A 207	
	Latin 7	A 207	Latin 5	A 102	Mathematics 10	A 204	
	Mathematics 10	A 204	Physics A, Sec. 1	S 200	Physics 1, Sec. 1	S 200	
	Physics 1, Sec. 1	S 200	Physics 4	S 210	Psychology A	Ap 100	
	Psychology A	Ap 100	Social Work 2	Ap 237	Social Work 7 & 11	A 201	
	Spanish, Beg., Sec. 1	A 105	Zoology 2	Ap 101	Spanish, Beg., Sec. 1	A 105	
			Zoology 3	Ap 101			
	9.30	Bacteriology 5 Lab.		Bacteriology 1	S 400	Biology 1, Sec. A	Ap 202
		Biology 1, Sec. A	Ap 202	Bacteriology 5		Biology 2 a & b	Ap 233
Biology 2 a & b		Ap 233	Botany 3 a	Ap 101	Botany 5 a	Ap 111	
Botany 5 a & c		Ap 111	Botany 6 c	Ap 101	Chemistry 3	S 300	
Chemistry 3		S 300	Chemistry 2 Lab.		Economics 1, Sec. 1	S 400	
Economics 1, Sec. 1		S 400	Chemistry 9	S 413	Economics 13	Ap 204	
Economics 12		Ap 204	Economics 4	Ap 204	Education 12	A 206	
Education 12		A 206	English 10	A 207	English 9	A 100	
English 9		A 100	French 4 a	A 104	French 3 b	A 104	
French 3 b		A 104	Geology 2 a & b	Ap 102	French 4 b	A 105	
French 4 b		A 105	German 1(a), Sec. 2	A 203	Geography 3	Ap 102	
Geography 3		Ap 102	German 1(b)	A 208	Geology 1 a & c	Ap 100	
Geology 1 a & c		Ap 100	Government 1		Geology 6	Ap 120	
History 17		A 203	History 2	A 103	History 17	A 203	
Home Economics 5 & 6		A 201	History 25	A 105	Home Economics 5 & 6	A 201	
Mathematics 1, Sec. 1		A 106, 204 Ag 100	Latin 2, Sec. 2	A 102	Mathematics 1, Sec. 1	A 106, 204 Ag 100	
Mathematics 13		A 102	Mathematics 1, Sec. 2	A 100, 106, 206	Mathematics 13	A 102	
Mathematics 16		A 101	Mathematics 12	A 101	Mathematics 16	A 101	
Philosophy 9		A 103	Mathematics 14	A 201	Philosophy 9	A 103	
Physics 1, Sec. 2		S 200	Philosophy 4	A 108	Physics 1, Sec. 2	S 200	
Social Work 4	A 208	Physics A, Sec. 2	S 200	Social Work 4	A 208		
Sociology 7	A 207	Sociology 1	A 204	Sociology 7	A 207		
Spanish, Beg., Sec. 3	A 108			Spanish, Beg., Sec. 3	A 108		

CONSULT DEPARTMENT HEADS FOR

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
	Bacteriology 3 Lab.....	.....	Botany 1 a.....	Ap 101	Bacteriology 9.....	.....
	Biology 1, Sec. B.....	Ap 100	Chemistry 1, Sec. 3.....	S 300	Biology 1, Sec. B.....	Ap 100	
	Chemistry 1, Sec. 1.....	S 300	Chemistry 2 Lab.....	.....	Chemistry 1, Sec. 1.....	S 300
	Chemistry 7.....	S 413	Chemistry 4.....	S 400	Chemistry 7.....	S 413	
	Economics 1, Sec. 2.....	S 400	Commerce 11.....	Ag 100	Economics 1, Sec. 2.....	S 400	
	Economics 3.....	A 208	Economics 10 (Com. 5).....	A 100	Economics 3.....	A 208	
	Economics 11.....	A 203	English 19.....	A 206	Economics 11.....	A 203	
	English 18.....	A 106	French 1, Sec. 2.....	A 108 A 104	English 18.....	A 106	
	French 1, Sec. 1.....	A104,105, 108	French 3 a.....	A 208	French 1, Sec. 1.....	A 104, 105, 108	
	French 3 c.....	A 102	Government 2.....	.....	Geology 8.....	Ap 102
	Geology 8.....	Ap 102	History 13.....	A 207	German, Beg., Secs. 1 & 2.....	A103, 207	
	German, Beg., Secs. 1 & 2.....	A103,207	History 15.....	.....	History 4.....	A 201
	History 4.....	A 201	Home Economics 1 & 2.....	A 106	History 11 a.....	.....
	History 11 a.....	.....	Latin 1, Sec. 2.....	A 102	History 19.....	A 101
	History 19.....	A 101	Mathematics 2 a, Sec. 2.....	A 204	Home Economics 7 & 8.....	.....
	Home Economics 8.....	.....	Philosophy 8.....	A 201	Mathematics 2 a, Sec. 1.....	A 204
	Mathematics 2 a, Sec. 1.....	A 204	Sociology 8.....	A 101	Physics 1, Sec. 3.....	S 200	
	Physics 1, Sec. 3.....	S 200	Spanish, Beg., Sec. 2.....	A 105	Physics 5.....	S 210	
	Physics 5.....	S 210	.....	.....	Psychology 4.....	A 206
	Psychology 4.....	A 206	.....	.....	Social Work 13.....	.....
	Social Work 13.....	.....	.....	.....	Zoology 1.....	A 100
	Zoology 1.....	A 100	.....	.....	Zoology 4.....	.....
	Zoology 4.....	.....	.....	.....	Zoology 7.....	.....
	Zoology 7.....	.....	.....	.....	.....	.....
	11.30	Agricultural Economics 2.....	Ag 100	Bacteriology 1, Lab. Sec. 1.....	Agricultural Economics 2.....	Ag 100
		Biology 4.....	Botany 1 b.....	Ap 101	Bacteriology 10.....	S 413
		Biology 5.....	Ap 101	Botany 3 b and 3 c.....	Ag 102	Biology 4.....
Botany 6 d.....		Ap 233	Commerce 6.....	A 106	Biology 5.....	Ap 101	
Chemistry D.....		.....	Economics 2.....	A 100	Botany 6 b.....	Ap 235
Economics 5.....		A 106	Economics 8.....	A 201	Chemistry D.....	.....
English 1, Sec. 2.....		A 206	Eng. 1, Sec. 4.....	A 108	Economics 5.....	A 106	
English 16.....		A 203	English 17.....	A 101	English 1, Sec. 2.....	A 206	
German, Beg., Sec 3.....		A 103	Geography 4.....	Ap 102	English 16.....	A 203	
German 2, Sec. 1.....		A 105	Geology 5.....	.....	German, Beg., Sec. 3.....	A 103
German 3 a.....		A 201	German, Beg., Secs. 1, 3, 6.....	A 206 A 103, A 203	German 2, Sec. 1.....	A 105	
Greek 14.....		A 102	Latin, Beg.....	A 102	German 3 a.....	A 201	
History 10.....		A 203	Mathematics 1, Sec. 3.....	A 204	Greek 14.....	A 102	
Mathematics 3.....		A 204	Mathematics 19.....	A 208	History 10.....	A 203	
Nursing 27.....		A 101	Philosophy 20.....	.....	Mathematics 3.....	A 204
Philosophy 6.....		A 103	Spanish 1.....	A 104	Nursing 27.....	A 101	
Physics 1, Sec. 4.....		S 200	.....	.....	Philosophy 6.....	A 103
Physics 2.....		S 210	.....	.....	Physics 1, Sec. 4.....	S 200
Psychology 1.....		A 100	.....	.....	Physics 2.....	S 210
Psychology 5.....		A 207	.....	.....	Psychology 1.....	A 100
Sociology 6.....		A 104	.....	.....	Psychology 5.....	A 207
.....		.....	.....	.....	Sociology 6.....	A 104

CONSULT DEPARTMENT HEADS FOR

—Continued

Mornings

Thursday	Room	Friday	Room	Saturday	Room
Bacteriology 1, Lab. Sec. 1.....		Agricultural Economics 1.....	Ag 100	Botany 5 b Lab.....	
Bacteriology 9.....		Botany 6 d Lab.....	Ap 233	Chemistry 1, Sec. 8.....	S 300
Botany 1 a.....	Ap 101	Chemistry 1, Sec. 1.....	S 300	Commerce 2.....	Ap 102
Botany 6 b Lab.....	Ap 233	Chemistry 5 Lab.....		Commerce 11.....	Ag 100
Chemistry 1, Sec. 3.....	S 300	Economics 1, Sec. 2.....	S 400	Economics 10 (Com. 5).....	A 100
Chemistry 2 Lab.....		Economics 3.....	A 208	English 19.....	A 206
Chemistry 4.....	S 400	Economics 11.....	A 208	French 1, Sec. 2.....	A103,104,
Commerce 11.....	Ag 100	English 18.....	A 106	French 3 a.....	A 208
Economics 10 (Com. 5).....	A 100	French 1, Sec. 1.....	A 104, 105, 108	Government 2.....	
English 19.....	A 206	Geology 8.....	Ap 102	History 18.....	A 207
French 1, Sec. 2.....	A103,104,	German, Beg., Secs. 1 & 2.....	A103, 207	History 15.....	A 108
French 3 a.....	A 208	History 4.....	A 201	Latin 1, Sec. 2.....	A 102
Government 2.....		History 11 a.....		Mathematics 2 b, Sec. 2.....	A 204
History 18.....	A 207	History 19.....	A 101	Philosophy 8.....	A 201
Home Economics 1 & 2.....	A 106	Home Economics 7 & 8.....		Sociology 8.....	A 101
History 15.....	A 108	Mathematics 2 b, Sec. 1.....	A 204	Spanish, Beg., Sec. 2.....	A 105
Latin 1, Sec. 2.....	A 102	Physics 1, Sec. 3.....	S 200		
Mathematics 2 a, Sec. 2.....	A 204	Physics 5.....	S 210		
Philosophy 8.....	A 201	Psychology 4.....	A 206		
Sociology 8.....	A 101	Zoology 5.....	Ap 101		
Spanish, Beg., Sec.2.....	A 105	Zoology 6.....	Ap 101		
Botany 1 b.....	Ap 101	Agricultural Economics 2.....	Ag 100	Botany 5 b Lab.....	
Botany 3 b and 3 c.....	Ag 102	Botany 6 d Lab.....	Ap 233	Commerce 6.....	A 106
Botany 6 b Lab.....	Ap 233	Botany 6 f.....		Economics 2.....	A 100
Commerce 6.....	A 106	Economics 5.....	A 106	Economics 8.....	A 201
Economics 2.....	A 100	English 1, Sec. 2.....	A 206	English 1, Sec. 4.....	A 108
Economics 8.....	A 201	English 16.....	A 203	English 17.....	A 101
English 1, Sec. 4.....	A 108	German, Beg., Sec. 3.....	A 103	Latin, Beg.....	A 102
English 17.....	A 101	German 2, Sec. 1.....	A 105	Mathematics 1, Sec. 3.....	A 204
Geography 4.....	Ap 102	German 3 a.....	A 201	Spanish 1.....	A 104
German, Beg., Secs. 2, 4, 5.....	A 206	Greek 14.....	A 102		
Latin, Beg.....	A 103	History 10.....	A 208		
Mathematics 1, Sec. 3.....	A 102	Mathematics 3.....	A 204		
Mathematics 19.....	A 208	Philosophy 6.....	A 108		
Spanish 1.....	A 104	Physics 1, Sec. 4.....	S 200		
		Physics 2, Sec. 4.....	S 210		
		Psychology 1.....	A 100		
		Psychology 5.....	A 207		
		Sociology 6.....	A 104		

10.30

11.30

SUBJECTS NOT IN THIS TIME TABLE

TIME TABLE

Afternoons

	Monday	Room	Tuesday	Room	Wednesday	Room
1.30	Botany 3 a Lab.....	.....	Bacteriology 1 Lab., Sec. 2.....	.....	Botany 3 a Lab.....	.....
	Botany 4 Lab.....	.....	Biology 1 Lab., Sec. 1.....	.....	Botany 4 Lab.....	.....
	Botany 5 a & c Lab.....	.....	Botany 6 e Lab.....	Ap 233	Botany 5 c Lab.....	.....
	Botany 6 c Lab.....	Ap 233	Chemistry 4 a Lab., Sec. a.....	.....	Botany 6 c Lab.....	Ap 233
	Chemistry 1, Sec. 2.....	S 300	Chemistry 5 Lab.....	.....	Chemistry 1, Sec. 2.....	S 300
	Chemistry D Lab.....	.....	Chemistry 9 Lab.....	.....	Economics 12 Lab., Sec. B.....	.....
	Chemistry 5.....	.....	Commerce 1.....	A 100	English 2.....	A 100, Ap 100
	Chemistry 7 Lab.....	.....	Economics 13 Lab.....	.....	French 1, Sec. 3.....	A 104, 105, 206
	Economics 12 Lab., Sec. A.....	.....	English 20.....	A 207	Geology 7 Lab.....	Ap 106
	English 2.....	A 100, Ap 100	French 3 c.....	A 105	German, Beg., Secs. 4 & 6.....	A 103 A 208
	French 1, Sec. 3.....	A 104, 105, 206	Geology 1 b & d Lab., Sec. 1.....	Ap 120	Latin 3.....	A 207
	Geology 11.....	Ap 102	Geology 7 Lab.....	Ap 106	Mathematics 1, Sec. 3.....	A 204
	German, Beg., Secs. 4 & 6.....	A 103 A 208	German, Beg., Sec. 5.....	A 108	Mathematics 5.....	A 101
	Latin 3.....	A 207	Latin 8, Sec. b.....	A 201	Philosophy 2.....	A 201
	Mathematics 11.....	A 101	Mathematics 1, Sec. 1.....	A 106, 204 Ag 100	Social Work 2.....	A 102
	Philosophy 2.....	A 201	Physics 4 Lab., Sec. 1.....	.....	Spanish, Beg.....	A 106
	Physics 5 Lab.....	.....	Psychology 2.....	A 104	Zoology 5 Lab.....	.....
	Social Work 2.....	A 102	Spanish, Beg.....	A 208	Zoology 6 Lab.....	.....
	Zoology 5.....	.....	Zoology 2 Lab.....	.....	
	Zoology 6.....	.....	Zoology 3 Lab.....	.....	
		Zoology 4 Lab.....	.....		
		Zoology 7 Lab.....	.....		
2.30	Bacteriology 3.....	.....	Bacteriology 1 Lab., Sec. 2.....	.....	Bacteriology 10 Lab.....	.....
	Botany 3 a Lab.....	.....	Biology 1 Lab., Sec. 1.....	.....	Botany 3 a Lab.....	.....
	Botany 4 Lab.....	.....	Botany 6 e Lab.....	Ap 233	Botany 4 Lab.....	.....
	Botany 5 a & c Lab.....	.....	Chemistry 2 Lab.....	.....	Botany 5 c Lab.....	.....
	Botany 6 c Lab.....	Ap 233	Chemistry 4 a Lab., Sec. a.....	.....	Botany 6 c Lab.....	Ap 233
	Chemistry 1, Sec. 4.....	S 300	Chemistry 5 Lab., Sec. a.....	.....	Chemistry 1, Sec. 4.....	S 300
	Chemistry D Lab.....	.....	Chemistry 9 Lab.....	.....	Commerce 1, Lab.....	Ap 208
	Chemistry 7 Lab.....	.....	Economics 13 Lab.....	.....	Economics 12 Lab., Sec. B.....	.....
	Commerce 2.....	Ap 120	Education 10.....	A 204	English 1, Sec. 5.....	A 208
	Economics 12 Lab., Sec. A.....	.....	English 1, Sec. 3 & 4.....	A 100, 108, 106, 108, 206	French 2, Sec. 3.....	A 104, 105,
	Education 10.....	A 204	English 1, Sec. 5.....	A 208	Geology 7 Lab.....	Ap 106
	French 2, Sec. 3.....	A 104 A 105	Geology 1 b & d Lab., Sec. 1.....	Ap 120	Geography 1.....	Ap 102
	Geography 1.....	Ap 102	Geology 7 Lab.....	Ap 106	German, Beg., Sec. 5.....	A 103
	German, Beg., Sec. 5.....	A 103	Physics 4 Lab., Sec. 1.....	.....	German 2, Sec. 2.....	A 203
	German 2, Sec. 2.....	A 203	Psychology 2 Lab.....	.....	History 1.....	A 100
	History 1.....	A 100	Zoology 2 Lab.....	.....	History 14.....	A 101
	History 14.....	A 101	Zoology 3 Lab.....	.....	Philosophy 1.....	Ag 100
	Philosophy 1.....	Ag 100	Zoology 4 Lab.....	.....	Social Work 3.....	A 102
	Physics 5 Lab.....	.....	Zoology 7 Lab.....	.....	Zoology 5 Lab.....	.....
	Zoology 1 Lab., Sec. 3.....	.....			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.....	.....		
Biology 1 Lab., Sec. 3.....	.....	Chemistry 1, Sec. 2.....	S 300			
Botany 3 b & 3 c Lab., Chemistry 3 Lab., Sec. b.....	Ag 104	Chemistry 3 Lab., Sec. a.....	.....		
Commerce 1.....	Ag 100	Chemistry 4a Lab., Sec. b.....	.....		
Economics 13 Lab.....	.....	Economics 12 Lab., Sec. C.....	.....		
English 20.....	A 207	English 2.....	A 100, Ap 100			
French 3 c.....	.....	French 1, Sec. 3.....	A 104, 103, 206			
Geology 1 b & d Lab., Sec. 2.....	Ap 120	Geology 2 Lab.....	.....		
Geology 9.....	Ap 112	German, Beg., Secs. 4 & 6.....	A 108 A 208			1.30
Latin 8, Sec. a.....	A 201	Latin 3.....	A 207			
Mathematics 1, Sec. 2.....	A100, 105, 106, 206	Mathematics 11.....	A 101			
Physics 4 Lab., Sec. 2.....	.....	Philosophy 2.....	A 201			
Psychology 2.....	A 104	Social Work 2.....	A 102			
Spanish, Beg., Zoology 1 Lab., Sec. 1.....	A 208	Zoology 11 Lab.....	.....		
Zoology 2 Lab.....	.....				
Bacteriology 1 Lab., Sec. 2.....	.....	Bacteriology 3 Lab.....	.....		
Biology 1 Lab., Sec. 3.....	.....	Biology 1 Lab., Sec. 5.....	.....		
Botany 3 b & 3 c Lab., Chemistry 2 Lab.....	Ag 104	Biology 3 Lab.....	.....		
Chemistry 3 Lab., Sec. b.....	.....	Chemistry 1, Sec. 4.....	S 300			
Economics 13 Lab.....	.....	Chemistry 3 Lab., Sec. a.....	.....		
English 1, Secs. 1 & 2.....	A100, 105, 106, 203, 206	Chemistry 4 a Lab., Sec. b.....	.....		
English 1, Sec. 5.....	A 208	Economics 12 Lab., Sec. C.....	.....		
English 20.....	.....	Education 10.....	A 204			
Geology 1 b & d Lab., Sec. 2.....	Ap 120	English 1, Sec. 5.....	A 208			
Geology 9.....	Ap 112	French 2, Sec. 3.....	A 104 A 105			2.30
Physics 4 Lab., Sec. 2.....	.....	Geology 2 Lab.....	.....		
Philosophy 20.....	A 207	Geology 8.....	Ap 120			
Zoology 1 Lab., Sec. 1.....	.....	German, Beg., Sec. 5.....	A 103			
Zoology 2 Lab.....	.....	German 2, Sec. 2.....	A 203			
		History 14.....	A 101			
		Philosophy 1.....	A 100			
		Social Work 3.....	A 102			
		Zoology 11 Lab.....	.....		

SUBJECTS NOT IN THIS TIME TABLE

TIME TABLE

Afternoons

	Monday	Room	Tuesday	Room	Wednesday	Room
3.30	Bacteriology 3 Lab..... Biology 5 Lab..... Botany 1 a Lab..... Botany 4 Lab..... Botany 7 a Lab..... Chemistry 1 Lab., Sec. a..... Chemistry D Lab..... Chemistry 7 Lab..... Commerce 2..... Nursing 5..... Physics 5 Lab..... Psychology 10..... Zoology 1 Lab., Sec. 3..... Zoology 5 Lab..... Zoology 6 Lab.....	_____ Ap 233 _____ _____ _____ _____ _____ _____ Ap 120 S 400 _____ A 104 _____ _____	Bacteriology 2 Lab..... Biology 1 Lab., Sec. 2..... Botany 6 e Lab..... Chemistry 1 Lab., Sec. b..... Chemistry 2 Lab..... Chemistry 4 a Lab., Sec. a..... Chemistry 5 Lab., Sec. a..... Chemistry 9 Lab..... Geology 7..... Physics 4 Lab., Sec. 1..... Psychology 2 Lab..... Zoology 2 Lab..... Zoology 3 Lab..... Zoology 4 Lab..... Zoology 7 Lab.....	_____ Ap 233 _____ _____ _____ _____ _____ _____ Ap 106 _____ _____ _____ _____ _____ _____	Bacteriology 10 Lab..... Botany 4 Lab..... Commerce 1 Lab..... Psychology 10.....	_____ _____ Ap 208 A 104
4.30	Bacteriology 3 Lab..... Biology 5 Lab..... Botany 1 a Lab..... Botany 7 a Lab..... Chemistry 1 Lab., Sec. a..... Chemistry 7 Lab..... Zoology 5 Lab..... Zoology 6 Lab.....	_____ Ap 233 _____ _____ _____ _____ _____ _____	Bacteriology 2 Lab..... Biology 1 Lab., Sec. 2..... Botany 6 e Lab..... Chemistry 1 Lab., Sec. b..... Chemistry 2 Lab..... Chemistry 4 a Lab., Sec. a..... Chemistry 9 Lab..... Zoology 2 Lab..... Zoology 3 Lab..... Zoology 4 Lab..... Zoology 7 Lab.....	_____ Ap 233 _____ _____ _____ _____ _____ _____	Bacteriology 10 Lab.....	_____
5.30	Chemistry 1 Lab., Sec. a.....	_____	Chemistry 1 Lab., Sec. b..... Chemistry 9 Lab.....	_____ _____		_____

CONSULT DEPARTMENT HEADS FOR

—Continued

Afternoons

Thursday	Room	Friday	Room			
Bacteriology 2 Lab.....		Bacteriology 3 Lab.....				
Biology 1 Lab., Sec. 4.....		Biology 1 Lab., Sec. 6.....				
Biology 4 Lab.....		Biology 3 Lab.....				
Botany 1 b Lab.....		Chemistry 1 Lab.,				
Botany 3 b & 3 c Lab..	Ag 104	Sec. d.....				
Chemistry 1 Lab.,		Chemistry 2, Sec. 2.....	S 300			
Sec. c.....		Chemistry 3 Lab.,				
Chemistry 2 Lab.....		Sec. a.....				
Chemistry 3 Lab.,		Chemistry 4a Lab.,				3.30
Sec. b.....		Sec. b.....				
English 21.....	A 201	English 24 b.....	A 103			
Geology 6 Lab.....	Ap 120	Geography 1 Lab.....	Ap 120			
Physics 4 Lab., Sec. 2.....		Psychology 10.....	A 104			
Philosophy 20.....	A 207	Social Work 3.....	A 102			
Zoology 1 Lab., Sec. 2.....		Zoology 11 Lab.....				
Bacteriology 2, Lab.....		Biology 1 Lab., Sec. 6.....				
Biology 1 Lab., Sec. 4.....		Biology 3 Lab.....				
Biology 4 Lab.....		Chemistry 1 Lab.,				
Botany 1 b Lab.....		Sec. d.....				
Botany 3 b & 3 c Lab..	Ag 104	Chemistry 3 Lab.,				
Chemistry 1 Lab.,		Sec. a.....				
Sec. c.....		Chemistry 4a Lab.,				
Chemistry 2 Lab.....		Sec. b.....				4.30
Chemistry 3 Lab.,		English 24 b.....	A 103			
Sec. b.....		Geography 1 Lab.....	Ap 120			
English 21.....	A 201	Zoology 11 Lab.....				
Geology 6 Lab.....	Ap 120					
Zoology 1 Lab., Sec. 2.....						
Chemistry 1 Lab.,		Chemistry 1 Lab.,				
Sec. c.....		Sec. d.....				
Chemistry 3 Lab.,		Chemistry 3 Lab.,				5.30
Sec. b.....		Sec. a.....				

SUBJECTS NOT IN THIS TIME TABLE

1944-45

FACULTY OF ARTS AND SCIENCE

The degrees offered in this Faculty are Bachelor of Arts (B.A.), Bachelor of Commerce (B.Com.), Bachelor of Education (B.Ed.), Bachelor of Home Economics (B.H.E.), and Master of Arts (M.A.).

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

In the Session of 1944-45 the first three years of the course leading to the degree of Bachelor of Home Economics will be given.

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., and B.Com. 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 1, or Geography 1, or Geology 1, or Physics A, or Physics 1 | 3 |
| (f) Three courses—not already chosen—selected from the following: | |

Bacteriology 1, Biology 1, Botany 1 (a), Botany 1 (b), 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, 1936-1937)**, History 1, History 2, History 3, History 4, †Beginners' Latin, Latin 1, Latin 2, Mathematics 2, Mathematics 3, Mathematics 4, Philosophy 1, Physics A, Physics 1, Physics 2, Physics 4, Psychology A, Psychology 1, Sociology 1, Beginners' Spanish, Spanish 1, Zoology 1..... 9

NOTES

Bacteriology 1, Botany 1 (a), Zoology 1, Geology 1 and 2, Economics 1, Commerce 5, History 4, Philosophy 1, Psychology 1, and Sociology 1 are not open to First Year students.

*For credit that can be given for Senior Matriculation standing, complete or partial, see page 83.

†See regulations 2, 7, and 8.

‡See regulations 4, 5, 7, and 8.

**These courses are offered only by Victoria College.

History 2 is open to First Year students only if they are preparing for entrance to the Normal School. 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 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 or Beginners' Spanish, to be followed respectively by German 1 and German 2 or Greek 1 and Greek 2 or Latin 1 and Latin 2 or Spanish 1 and Spanish 2 (when offered) 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, German 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, German 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, except as provided in Sections 7 and 8, 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.

7. Students offering four science courses (12 units) in the First and Second Years may fulfil the language requirement indicated above in section 1 (*b*) by taking any two of the following:

French 1, French 2; Beginners' Latin, Latin 1, Latin 2; Beginners' German, German 1, German 2; Beginners' Greek, Greek 1, Greek 2, Greek A (see Calendar, 1935-36)*, Greek 2 (see Calendar, 1936-37)*, Beginners' Spanish, Spanish 1.

Only one beginners' course may be selected.

8. Students offering six science courses (18 units) in the First and Second Years may postpone the second course in a language under section 7 until the Third or Fourth Year.

The science courses in sections 7 and 8 may be selected from the following:

Bacteriology, Biology, Botany, Chemistry, Geography, Geology, Physics, Zoology.

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, Biology and 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),

*These courses are offered only by Victoria College.

†Those who intend to enter the Teacher Training Course should consult section 3, page 111.

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 and Botany, Chemistry, English, French, Geography, German, Greek, History, Latin, Mathematics, Physics, Zoology.

Work in the First or Second Year is required in each of the major subjects, except in Education, Government, 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*, Geology 1, Geology 2, German 2 if preceded by Beginners' German and German 1, Greek 2 if preceded by Beginners' Greek and Greek 1, History 4, 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 84.

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.

*See prerequisite for Chemistry 4.

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 1944-45. 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 and Preventive Medicine

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 and Botany

Prerequisites: Biology 1, Chemistry 1, Botany 1 (*a*).

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

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

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

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

Biology and Botany (Forestry Option)

Prerequisites: First Year, Biology 1; Second Year, Botany 1 (a), Civil Engineering 2; Zoology 1, Physics 1*, and Chemistry 1 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 2 (b, c), 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 15 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 and Botany (Genetics Option)

Prerequisites: Biology 1; Chemistry 1, 3; one of Botany 1 (a), Zoology 1, Biology 4. (Where possible both Botany 1 and Zoology 1 should be taken.)

Course: Biology 2 (a), 2 (b), 2 (c), 2 (d). Six units of more advanced courses in Biology, Botany, Zoology. Three to six units from Agronomy 6, 21, 50; Genetics 2; Animal Husbandry 23; Poultry Husbandry 14. Thesis (three units).

Biology and Botany (Physiology Option)

Prerequisites: Biology 1; Botany 1(a) or Zoology 1 (both should be taken where possible); Chemistry 3.

Required Courses: Biology 3; Botany 3(a), 3(b) (Horticulture 41); problem; thesis.

Optional Courses: At least 9 units from the following: Botany 4; Zoology 2, 5; Chemistry 9(a), 19; Bacteriology 9; Agronomy 15; Animal Husbandry 21, 22; Dairying 4(b); Poultry Husbandry 19(a).

Biology and Botany (Plant Pathology Option)

Prerequisites: Biology 1; Botany 1(a); Zoology 1; Chemistry 1, 3.

Required Courses: Botany 3(a), 4, 6(c), 6(e), 6(d); Zoology 4, 7; thesis.

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

Optional Courses: In consultation with the Department, students in Arts and Science will select at least 8 units from the following: Agronomy 2, 11; Horticulture 13, 17, 41, 42; Agricultural Economics 1; Botany 5(a), 6(f). Students in agriculture are required to select 12 units, from three departments in the Faculty of Agriculture (see p. 295).

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, 25.

Classics

Prerequisites: Greek 2, Latin 2.

Course: Greek 8 and Latin 8 (in both years); any three of Greek 3, 5, 6, 7; any three of Latin 3, 4, 5, 6; and either Greek 9 or Latin 7.

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

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

Economics

Prerequisites: A reading knowledge of French or German.

Course: Economics 2, if not already taken, any 15 further units in the Department, to include Economics 4, 8 or 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 (a) and (b) (the seminars, of which 24 (b) must be attended in both years), 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

Prerequisites: French 2.

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

Prerequisite: (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

Prerequisite: Latin 2.

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 of Mathematics 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19, and Physics 4 and 5. A final Honours examination, written or oral, is required.

Philosophy

Prerequisites: Philosophy 1, Psychology 1.

Course: Psychology 2 or 20, and 15 units chosen from Philosophy 2, 3, 4, 5, 6, 7, 8, 9, 20.

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, 8, 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 (b), Physics A or 1.

Course: Philosophy 8, and 15 units chosen from Psychology 2, 3, 4, 5, 6, 7, 8, 9, 20.

Sociology

Prerequisite: A reading knowledge of French or German.

Course: A minimum of nine and a maximum of twelve units selected from Sociology 2, 3, 4, 5, 6, 7, 8 and a minimum of six and maximum of nine additional units selected from Economics 2, 3, 4, 5, 6, 9, 12, 13, to a total of not more than eighteen units.

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.

Zoology

Prerequisites: Biology 1, Chemistry 1, Zoology 1.

Physics 1*, 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.

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.

COMBINED HONOURS COURSES

(*a*) Any two of:

Bacteriology and Preventive Medicine, Biology and Botany, Chemistry, Geology, Mathematics, Physics, Zoology.

(*b*) Any two of:

Economics, English, French, German, History, Latin or Classics, Philosophy, Political Science, Psychology, Sociology.

(*c*) Other combinations not listed above may be taken with the consent of Faculty.

The requirements in each of these subjects in such combinations are as follows:

Bacteriology and Preventive Medicine

Prerequisites: Bacteriology 1, Biology 1, Chemistry 1.

Course: Bacteriology 2, 5, 9, and 10, and a thesis.

Biology and Botany

Prerequisites: Biology 1, Chemistry 1, Botany 1 (*a*).

Course: Twelve units to be selected in consultation with the Head of the Department.

Chemistry

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

Course: To be arranged in consultation with the Head of the Department.

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

Classics

Prerequisites: Greek 2, Latin 2.

Course: Latin 8 (in both years); any two of Greek 3, 5, 6, 7; any two of Latin 3, 4, 5, 6.

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, 8 or 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 may be oral.

French

Prerequisite: French 2.

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.

Geology

Prerequisite: Geology 1.

Course: Twelve units to be selected in consultation with the Head of the Department. Geography 4 may be taken as a course in Geology.

German

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

Course: German 3 (a), 3 (c), and any two of 3 (b), 4 (a), 4 (b), 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

Prerequisite: Latin 2.

Course: Latin 8 (in both years) 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.

Mathematics

Prerequisite: Mathematics 2.

Course: Any twelve units of Mathematics 10, 11, 12, 13, 14, 15, 16, 17, 18, 19.

Philosophy

Prerequisites: Philosophy 1, Psychology 1.

Course: Twelve units chosen from Philosophy 2, 3, 4, 5, 6, 7, 8, 9, 20.

Physics

Prerequisites: Mathematics 2, Physics 1.

Course: Physics 4, 5, and 8 and four units from the following: Physics 6, 7, 11, 12, and 13.

Political Science

Prerequisite: A reading knowledge of French or German.

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

Psychology

Prerequisite: Psychology 1, Philosophy 1.

Course: Twelve units chosen from Psychology 2, 3, 4, 5, 6, 7, 8, 9, 20.

Sociology

Prerequisite: A reading knowledge of French or German.

Course: Twelve units selected from Sociology 2, 3, 4, 5, 6, 7, 8.

Zoology

Prerequisites: Chemistry 1 and 2, Biology 1, Zoology 1.

Course: Zoology 2, 3, 5, and 6.

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 courses leading to the degrees of B.Com. and B.S.F., and B.Com. and B.S.A., 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.

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.

Students proceeding to the degree of B.Com. are required so to arrange their courses that they will be registered in Commerce subjects over a period of at least two years. Any departure from this regulation must have the approval of the Head of the Department of Commerce and the Dean.

First Year

A course in First Year Arts and Science or the equivalent.

Second Year

The following courses comprising 15 units:

English 2 or English 3 and 4.

Mathematics 2 or 3, or an additional course in the language taken in the First Year. Students who contemplate taking advanced work in Statistics (Economics 13) should take Mathematics 2.

Economics 1.

Commerce 5.

Elective, 3 units, preferably Commerce 1.

Students will not be permitted to register for the Third Year in Commerce unless they have secured a standing of 60 per cent in Economics 1.

In view of the importance which rightly attaches to the capacity for adequate and clear expression in writing, Regulation 12, on page 252 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:

Economics 4.

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

Commerce 6.

Commerce 1, if not already taken.

Electives, three or six units to be chosen from the elective list in consultation with the Head of the Department and the Dean.

Fourth Year

The following courses comprising 15 units:

Economics 6, if not already taken.

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.

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 2.

Commerce 3.

Commerce 11.

Commerce 13.

Economics 3.

Economics 5.

Economics 11.

Economics 13.

Agricultural Economics 1.

English (3 units).

Government 1.

Government 4.

Government 5.

Language (3 units).

Mathematics 2, 3.

Mining (3 units).

Psychology 1, 3, 7, or 9.

COURSE LEADING TO THE DEGREE OF B.H.E. FIRST AND SECOND YEARS

Courses must be chosen in conformity with the following requirements. Units

(1) <i>Required course</i>	24
(a) English 1 in the First Year.....	3
(b) Chemistry 1 in the First Year.....	3
(c) Chemistry C (prerequisite: Chemistry 1).....	3
(d) Biology 1	3
(e) Physics A or Physics C or Physics 1.....	3
(f) Home Economics A (First Term).....	1½
Required only if the student does not have credit in Home Economics (A) III or Home Economics (CC) III or equivalent.	
(g) Home Economics B (Second Term).....	1½
Required only if the student does not have credit in Home Economics (B) III or Home Economics (CC) III or equivalent.	
(h) Home Economics 1 (First Term).....	1½
Prerequisite: Home Economics A or equivalent.	
(i) Home Economics 2 (Second Term).....	1½
(j) Home Economics 3 (First Term).....	1½
Prerequisite: Home Economics B or equivalent.	
(k) Home Economics 4 (Second Term).....	1½
Prerequisite: Home Economics 1.	
(2) <i>Three courses from the following:</i>	
Agriculture 1, Bacteriology 1, Botany 1(a), Commerce 5, Economics 1 or Economics 2, English 2 or English 3 and 4, Geography 1, History 1 or History 2 or History 3, Language: Beginners', 1, 2 (maximum 6 units), Mathematics 1, Mathematics 2 or Mathematics 3, Philosophy 1, Psychology 1, Sociology 1, Zoology 1.....	9

Notes

1. Bacteriology 1, Botany 1 (a), Commerce 5, Economics 1, Philosophy 1, Psychology 1, Sociology 1, and Zoology 1 are not open to First Year students.

2. Bacteriology 1, Economics 1, and Psychology 1 are required courses for the degree in Home Economics and are to be taken

in the Second or Third Year. Students should elect Economics 1 and Psychology 1 in the Second Year where possible.

3. If the student has presented Home Economics (CC) III for University Entrance, Home Economics 1 and 2 are to be taken in the First Year and Home Economics 3 and 4 in the Second Year.

If the student has presented Home Economics (A) III for University Entrance, Home Economics 1, 2, and B are to be taken in the First Year and Home Economics 3 and 4 in the Second Year.

If the student has presented Home Economics (B) III for University Entrance, Home Economics A and 2 are to be taken in the First Year and Home Economics 1, 3, and 4 in the Second Year.

If the student has not the required Home Economics standing from the high schools, Home Economics A, B, and 2 are to be taken in the First Year and Home Economics 1, 3, and 4 in the Second Year.

If the student enters with Home Economics (CC) IV taken as a Senior Matriculation subject, 3 units will be credited toward the First Year in Home Economics.

4. Students wishing to carry on advanced work in nutrition or textiles should substitute certain other Chemistry courses for Chemistry C, such substitutions to be arranged after consultation with the Acting Head of the Department of Home Economics.

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.

In the Third Year the following courses are required: Bacteriology 1, Biology 5, Chemistry D, Home Economics 5, 6, 7, and 8.

In the Fourth Year, the course is provisionally as follows. Home Economics 17, 18, and 19 are required of all Home Economics students. In addition, those wishing to train as dietitians must take Home Economics 13, 14, 15, and 16, and those planning to enter the teaching profession must take Home Economics 9, 10, and 12.

COURSE LEADING TO THE DEGREE OF B.Ed.

1. Prerequisites:

- (a) A bachelor's degree in Arts, Agriculture, or Applied Science, or an equivalent, from a recognized university.
- (b) At least one year's teaching experience before beginning the courses listed under 2 (b) below.

- (c) A permanent teaching certificate, which must be obtained before the degree is conferred.
2. *Course:* The B.Ed. degree represents fifteen units as follows:
 - (a) Six units for the completion of the Teacher Training Course or its equivalent.
 - (b) Nine units—not already chosen—from Education 20 to 39 inclusive.
3. With the approval of the Dean and the Head of the Department, three units in a subject other than Education may be included in the fifteen units required.
4. Candidates must have their courses approved by the Head of the Department and by the Dean.
5. Standings will be First Class, Second Class, and Pass. The B.Ed. with First or Second Class standing will be awarded to candidates who (a) have obtained First or Second Class standing respectively in the Teacher Training Course or its equivalent, and (b) have obtained an average First or Second Class standing respectively in the nine units required under 2 (b) above, with First or Second Class standing in at least six of these units. Other successful candidates will be awarded the B.Ed. with Pass standing.

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 departments see pages 103-110.

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

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

offered in the Third and Fourth Years, or from graduate or reading courses.

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

The thesis shall count from three to six units.

There will be a general examination on the major field.

Examinations may be written or oral or both.

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

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

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

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

8. Graduate students who are assistants, giving not more than four hours a week of tutorial instruction, are permitted to qualify for the M.A. degree after one regular Winter Session of University attendance, provided they have done, in the summer vacation, research work of a nature and extent satisfactory to the head of the department concerned. Such students must be registered as graduate students and must have secured the approval of the head of the department concerned and of the Faculty before entering upon the research in question. Other graduate students doing tutorial work will not be allowed to come up for final examination in less than two academic years after registration as M.A. students.

The following special requirements are prescribed by different departments.

Bacteriology and Preventive Medicine

Prerequisites:

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

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

M.A. Course:

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

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

Biology and Botany*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.

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, 8 or 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 at least three must be in Education) chosen from the following: Education 9, 10, 12, 16, 20 to 39 inclusive; 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 chosen from Education 9, 10, 12, 16, 20 to 39 inclusive.

Major: Nine units chosen from Education 20 to 39 inclusive and a thesis (3 units).

NOTES. 1. The Teacher Training Course may not be counted as a minor if Education is taken as the major.

2. With the consent of the Head of the Department graduate students may substitute Psychology 6, 9, or 20 for one of the Education courses named above.

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 25 inclusive.

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

M.A. Course:

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

Major: Two related courses (six units) to be chosen from History 10 to 25 inclusive, or the equivalent in reading courses, and a thesis embodying original work to which 3 units of credit are given. All candidates for a major in History who have not already done so must attend the Honours seminar in historical method, and the M.A. seminar, History 23, or submit to an examination on a parallel reading course approved by the Department.

Mathematics

Prerequisites:

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

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

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

M.A. Course:

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

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

Philosophy

Prerequisites:

Minor: Six units chosen from Philosophy 2, 3, 4, 5, 6, 7, 8, 9, 20.

Major: Psychology 1 or its equivalent, and nine units chosen from Philosophy 2, 3, 4, 5, 6, 7, 8, 9, 20. 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, 20.

Major: Philosophy 1 and 8, and nine units chosen from Psychology 2, 3, 4, 5, 6, 7, 8, 9, 20. 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.

With the consent of the Head of the Department, graduate students may substitute three units chosen from Education 21, 28, 30, 31, 33 for three units of Psychology.

Sociology

(Minor only)

Prerequisites:

Minor: A minimum of fifteen units of work regularly offered in the Department of Economics, Political Science, and Sociology.

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

M. A. Course:

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

Major: Nine units of work regularly offered in Sociology 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.

Zoology*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.

TEACHER TRAINING COURSE

Candidates qualifying for the Academic A Certificate (given by the Provincial Department of Education, Victoria, on the completion of the Teacher Training Course) take the courses prescribed in section 4 of page 154.

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 A 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.

- (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 twelve units of credit in Agriculture in addition to Agriculture 1, 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 either 2, or 3 and 4, 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 3 or 4, and Physics 3.	12
8. Psychology A or 1.	3
9. Two electives from Third and Fourth Year subjects.	6
	30
Total	60

Thus candidates will be admitted to the Teacher Training Course who have (a) completed the course for high school teachers of science, or (b) obtained Honours in Biology, Chemistry, or Physics, or (c) obtained credit in nine units of Third and Fourth Year courses in any two of these sciences. But candidates who choose one of the last two alternatives are advised to take at least one course in each of the three sciences mentioned.

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 86, 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.

PROFESSIONAL COURSE IN SOCIAL WORK

Requirements for Entrance

The courses in Social Work are professional and technical in nature and are designed for those students who have a bachelor's degree or the equivalent. In addition, on the basis of recommendations and a personal interview, the admissions committee must be satisfied that the applicant is personally suited to the field of social work. The Diploma in Social Work will be granted upon the completion of fifteen units of class work and a minimum of six hundred hours of supervised field work. Each student must submit also an acceptable original study done in conjunction with courses in social research and field work.

Special Course

Because the present need of social agencies for personnel is so great, certain mature persons who lack the necessary academic entrance requirements but who have shown an aptitude for social work and who have completed at least University Entrance will be admitted to a special eight months' course. This course will be flexible in requirements, but a definite plan will be outlined over the year to meet the needs of the individual student. Those who finish this shorter course and who subsequently complete the work for the Bachelor's degree will be given credit toward the Diploma. The special course will not be continued after the present emergency has passed but may be set up later for returned service men and women.

Length of Courses

The normal time for the completion of requirements for the Diploma is twelve months. A few part-time students will be admitted to either the Diploma or the Special Course who will plan to meet requirements over a longer period of time.

Pre-Professional Curriculum

Undergraduate students who look forward to entering the Professional Course in Social Work are strongly advised to come prepared with an adequate background in the social sciences.

Courses in Biology and Psychology, in addition to Economics, Government, Sociology, and History, are to be emphasized, and special attention is called to Economics 3, Labour Problems; Economics 5, Government Finance; Economics 12, Statistics; Sociology 4, Social Problems and Social Policy; Sociology 6, Introduction to Social Work; History 17, World Economic History.

Fees

The total fee for the Social Work course is \$150. This full fee for the Winter Session will cover the work of Diploma students in the Summer Session as well.

Date of Application

Applications for admission to the Professional Course in Social Work should be in the hands of the Director not later than July 1 for the following year.

Field Work Training

Actual practical work under supervision is made possible for the students through the following agencies in Vancouver and Victoria: Children's Aid Society of Vancouver; Catholic Children's Aid Society; Child Welfare Branch, Department of the Provincial Secretary; Provincial Psychiatric Services; Division of T.B. Control; Family Welfare Bureau; Social Service Department, City of Vancouver; Young Women's Christian Association; Victoria Children's Aid Society; Victoria Family Welfare Association; Canadian Institute for the Blind.

Ordinarily a student will spend fifteen hours a week during the regular session in one social agency and thirty hours a week for ten or twelve weeks during the intersession and summer in a second agency. In some instances a student may do all of his practice work in one agency.

PRE-MEDICAL COURSES

Candidates who plan to enter Medicine at other universities can, in certain cases, 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, Zoology 1. 18 units.

Second Year:

English 2, Physics 2, Chemistry 2, Zoology 2; and an elective, preferably Chemistry 3. 15 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 15th.

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 98, and in reference to admission to Second Year Applied Science, page 85, note under section 8.)

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

Associate Professor: D. C. B. Duff.

Assistant Professor: Lawrence E. Ranta.

Instructor:

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: 9.30-10.30, Friday.

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 antiseptics; 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 2.30-4.30, Friday.

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

Prerequisite: Bacteriology 1.

Four hours a week. First Term. 1½ units.

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

Prerequisite: Bacteriology 1.

Four hours a week. Second Term. 1½ units.

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: Zinnser, Enders, and Fothergill, *Immunity*, 1940, Macmillan; Marrack, Medical Research Council Special Report No. 230, latest edition, 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: 9.30-10.30, Tuesday and Thursday.

Laboratory: 9.30-11.30, Monday.

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

6. *Soil Bacteriology*.—(This course is the same as Agronomy 12, and is given by the Department of Agronomy.)

Prerequisite: Bacteriology 1.

Five hours a week. 3 units.

7. *Advanced Dairy Bacteriology*.—(This course is the same as Dairying 7, and is given by the Department of Dairying.)

Prerequisites: Bacteriology 1 and 4 (a).

One lecture and two laboratories per week. 3 units.

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.

Four hours a week. First Term. 1½ units.

Lectures: 10.30-11.30, Wednesday and Thursday.

Laboratory: 8.30-10.30, Friday.

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; Rosenau, *Preventive Medicine and Hygiene*, latest edition, Appleton-Century.

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: 11.30-12.30, Wednesday.

Laboratory: 2.30-5.30, Wednesday.

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

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

Prerequisites: Bacteriology 1 with at least Second Class standing, and Bacteriology 2, with which this course may be taken concurrently. 3 units.

Department of Biology and Botany

Professor and Head of the Department: A. H. Hutchinson.

Professor: Frank Dickson.

Associate Professor: John Davidson.

Associate Professor: John Allardyce.

Instructor: Miss Ruth E. Fields.

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;

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 will consist of problems, examination of illustrative material, and experiments with *Drosophila*.

Prerequisite: Biology 2 (a).

One lecture and four hours laboratory a week. Second Term. 1½ units.

Lectures: 8.30-9.30, Friday.

Laboratory: 8.30-10.30, Monday and Wednesday.

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).

Three hours a week. 3 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).

Three hours a week.

3 units.

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. (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.

5. *Basic Physiology*.—This course is designed primarily for students in Home Economics and in the Teacher's Science option. It may be elected also by students taking a major in biological subjects, and not proceeding to Honours in this field.

This course deals with the physiology of digestion and absorption of foods; the liberation and utilization of energy; and the control of the equilibria of life processes.

Prerequisites: Biology 1, Chemistry 1. The Department should be consulted further.

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

1½ units.

Lectures: 11.30-12.30, Monday and Wednesday.

Laboratory: 3.30-5.30, Monday.

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*.—As in Applied Science.

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.

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*, McGraw-Hill; Fritsch, *The Structure and Reproduction of the Algae*, Vol. I, Macmillan; Tilden, *The Algae and Their Life Relations*, 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*, 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.

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

Prerequisite: Botany 1 (a).

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.

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.

Prerequisite: Botany 1 (a).

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.

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

Prerequisite: Botany 5 (a).

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: 11.30-12.30, Wednesday.

Laboratory: 10.30-12.30, Thursday.

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, Monday and Wednesday.

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).

One lecture and four hours laboratory a week.

3 units.

Lectures: 11.30-12.30, Monday.

Laboratory: 8.30-12.30, 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).

One lecture and four hours laboratory a week. Credit will be given for a collection of fungi made during the summer preceding the course.

3 units.

Lectures: 8.30-9.30, Monday.

Laboratory: 1.30-5.30, Tuesday.

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).

Lectures: 11.30-12.30, Friday.

1 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 and Head of the Department: R. H. Clark.
Professor: W. F. Seyer.
Professor: M. J. Marshall.
Associate Professor: William Ure.
Associate Professor: J. Allen Harris.
Assistant Professor: J. Gilbert Hooley.
Lecturer: Lionel A. Cox.

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.

(Not given in 1944-45.)

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;
Section 4, 2.30- 3.30, Monday, Wednesday, Friday.

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 and Swift, *Qualitative Analysis*, Macmillan.

References: Hammett, *Solutions of Electrolytes*, McGraw-Hill; Engelder, *Calculations of Qualitative Analysis*, Wiley.

Prerequisite: Chemistry 1.

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

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

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

Prerequisite: Chemistry 1.

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

3 units.

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

Lectures: Section 1: 9.30-10.30, Friday; Section 2: 3.30-4.30, Friday.

Laboratory: 8.30-11.30, Tuesday and Thursday; 2.30-5.30, Tuesday and Thursday.

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.

(Not given in 1944-45.)

C. *Organic Chemistry*.—A study of carbon compounds with especial emphasis upon the compounds to be dealt with later in courses on food-stuffs, nutrition, and textile fibres.

Open only to students taking Home Economics.

Text-book: Lowy-Harrow, *An Introduction to Organic Chemistry*, Wiley.

Two lectures and three hours laboratory a week.

3 units.

D. *Biochemistry*.—This course will be open to students in Home Economics only, and will deal with the chemistry of digestion, absorption, and the fate of foodstuffs in the body.

Prerequisite: Chemistry C.

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

1½ units.

Lectures: 11.30-12.30, Monday and Wednesday.

Laboratory: 1.30-4.30, Monday.

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: Conant, *The Chemistry of Organic Compounds*, Macmillan; 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: Gucker and Meldrum, *Physical Chemistry*, American Book Company.

References: Millard, *Physical Chemistry for Colleges*, McGraw-Hill; Noyes and Sherrill, *Chemical Principles*, Macmillan.

Laboratory text-books: Sherrill, *Laboratory Experiments on Physico-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.

Reference: Noyes and Bray, *Qualitative Analysis of the Rarer Elements*, Macmillan.

(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. 3 units.

Lectures: 1.30-2.30, Monday.

Laboratory: 1.30-4.30, Tuesday; 8.30-11.30, Friday.

6. *Introduction to Chemical Engineering*. — As in Applied Science.

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: Glasstone, *A Text-Book of Physical Chemistry*, Van Nostrand. Reference: Noyes and Sherrill, *Chemical Principles*, Macmillan.

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) As in Applied Science.

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, purine derivatives, alkaloids, and enzyme action.

Two lectures and one laboratory period a week. First Term.
1½ units.

(b) The various types of organic reactions, with certain theoretical conceptions, will be presented. The terpenes, various commercial

plastics, including the synthetic rubbers, synthetic textile fibres, and synthetic protective and decorative coatings, will be considered.

Reference: 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.

PRIMARILY FOR GRADUATE STUDENTS

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.

(May be given in 1944-45 and alternate years.)

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-books: Steiner, *Introduction to Chemical Thermodynamics*, McGraw-Hill; Lewis & Randall, *Principles of Thermodynamics*, McGraw-Hill.

Prerequisite: Chemistry 7.

One lecture a week. 1 unit.

(Given in 1945-46 and alternate years.)

18. *Advanced Inorganic Chemistry*.—The properties of the elements are considered in relation to the periodic table and atomic structure. The course includes a study of the rarer elements.

Prerequisites: Chemistry 2 and 4.

Two lectures a week. First Term. 1 unit.

Lectures: 8.30-9.30, Tuesday and Thursday.

(Given in 1944-45 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 1945-46 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 1944-45 and alternate years.)

25. *The Chemistry of Munitions*.—This course, which replaces Chemistry 10 for the duration of the war, is open to any student who has taken or is taking Chemistry 9.

(May not be given in 1944-45.)

Department of Classics

Professor and Head of the Department: O. J. Todd.

Associate Professor: Louis A. MacKay.

Assistant Professor: Geoffrey B. Riddehough.

Instructor: Patrick C. F. Guthrie. (On leave of absence.)

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: Chase and Phillips, *A New Introduction to Greek*, Edwards.

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 Vincetus*, 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, *Republica*, Burnet, Oxford; Aristotle, *Ethica Nicomachea*, Bywater, Oxford.

Three hours a week. 3 units.

8. (a) and (b) *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.

References: Botsford and Robinson, *Hellenic History*, Macmillan; 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 1945-46 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.

(May not be given in 1944-45.)

(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, *Oedipus the King* and one other play, 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.

PRIMARYLY 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: To be announced.

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 selections from some of the representative poets of the late Republic and the early Empire. There will be practice in composition, and reading in the history of Rome.

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

Texts: Livy, *Book XXV*, Monro, Oxford; *A Book of Latin Poetry*, Neville, Jolliffe, Dale, and Breslove, Macmillan.

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 Greece.

Text-book: Robertson and Robertson, *The Story of Greece and Rome*, chap. I-XXXII, 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 1944-45 and alternate years.)

NOTE. All students are advised to provide themselves with Allen and Greenough, *New Latin Grammar*, Ginn. Honours students will be expected to take additional reading in the Third and Fourth Years in connection with at least two of the courses numbered 3, 4, 5, and 6.

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 1945-46 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 1944-45 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.

Text: *The Oxford Book of Latin Verse*, Garrod, Oxford.

Three hours a week. 3 units.

8.30-9.30, Tuesday, Thursday, and Saturday.

(Given in 1945-46 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.

References: Cary, *A History of Rome Down to the Reign of Constantine*, Macmillan; Wells and Barrow, *A Short History of the Roman Empire*, Methuen; Parker, *A History of the Roman World from A.D. 138 to 337*, Methuen.

A knowledge of Latin is not prerequisite for this course.

Three hours a week. 3 units.

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

(Given in 1944-45 and alternate years.)

8. (a) and (b) *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. *Roman Comedy*. 3 units.

24. Vergil, *Aeneid*. 3 units.

Department of Commerce

Professor and Head of the Department: Ellis H. Morrow.

Associate Professor: A. W. Currie.

Lecturer in Accountancy: Frederick Field.

Lecturer in Commercial Law:

Lecturer in Commercial Law:

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 announced.

Four hours a week. Mr. Morrow.

3 units.

Lectures: 1.30-2.30, Tuesday and Thursday.

Laboratory: 2.30-4.30, Wednesday.

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: Paton, *Advanced Accounting*, Macmillan.

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.

Text-book: Lawrence, *Cost Accounting*, revised edition, Prentice-Hall.

Prerequisites: Commerce 1, 6, 11.

Three hours a week.

3 units.

(Not given in 1944-45.)

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.

3 units.

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. Reports are required of students.

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

Three hours a week. Mr. Currie, Mr. Warren.

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

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

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: Folts, *Introduction to Industrial Management*, 1940, McGraw-Hill.

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

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

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

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.

(Not given in 1944-45.)

Department of Economics, Political Science, and Sociology

Professor and Head of the Department: H. F. Angus. (On leave of absence.)

Acting Head of the Department: Daniel Buchanan.

Professor: G. F. Drummond.

Associate Professor: C. W. Topping.

Associate Professor: Joseph A. Crumb.

Associate Professor of Social Work: Miss Marjorie J. Smith.

Assistant Professor of Social Work: Miss Mary C. Gleason.

Part-time Lecturers

Miss Marjorie Bradford, B.Sc. (Alberta).

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

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

Gordon Hearn, B.A. (Man.), M.Sc. (George Williams College).

Honorary Lecturers

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

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

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

NOTE. 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.

Agricultural Economics 1, 2, 50, and 51 and Commerce 5 may be counted as courses in Economics.

Economics

1. *Principles of Economics*.—An introductory study of the principles of production, value, distribution, money and banking, international exchange, and government finance, and an analysis of the problems of labour and social reform.

Text-book: Logan and Inman, *A Social Approach to Economics*, 1939, University of Toronto.

References: Fairchild, Furniss, and Buck, *Outlines of Economics* (2 vols.), 3rd edition, Macmillan; Garver and Hansen, *Principles of Economics*, 1937, Ginn; *Canada Year Books*, Dominion Bureau of Statistics.

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

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: Heaton, *Economic History of Europe*, Harpers; Knowles, *Industrial and Commercial Revolutions*, Dutton; Mantoux, *The Industrial Revolution in the Eighteenth Century*, Cape; Faulkner, *American Economic History*, Harpers; Currie, *Canadian Economic Development*, Nelson; 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, cooperation, arbitration and conciliation, scientific management, labour legislation, and socialism.

Text-books: Watkins and Dodd, *Labour Problems*, Crowell; Taft, *Economics and Problems of Labor*, Stackpole.

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

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

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-book: James, *The Economics of Money, Credit and Banking*, Ronald.

References: Crumb, *Lessons in Money and Banking*; Willis and Beckhart, *Foreign Banking Systems*, Holt; Hayek, *Prices and Production*, Cape; Haberler, *Prosperity and Depression*, Columbia; 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: Fagan and Macy, *Public Finance*, Longmans.

Readings: Lutz, *Public Finance*, Appleton-Century; 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.

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*.—See Commerce 9.

8. *Advanced Economic Theory*.—The field of theoretical economics, with emphasis on the basic principles of the science; the approach and contributions of contemporary authorities, including Joan Robinson, J. R. Hicks, and J. M. Keynes.

Text-book: Boulding, *Economic Analysis*, Harpers.

Readings: Keynes, *General Theory of Employment, Interest and Money*, 1936, Harcourt, Brace; Chamberlain, *The Theory of Monopolistic Competition*, 1933, Harvard; Robinson, *The Economics of Imperfect Competition*, 1933, Macmillan; Atkins and others, *Economic Behavior*, 1939, Houghton Mifflin; Homan, *Contemporary Economic Thought*, 1928, Harpers; Hicks, *The Theory of Wages*, 1935, Macmillan; Kierstead, *Essentials of Price Theory*, University of Toronto.

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

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

(Given in 1944-45 and alternate years.)

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; Whitaker, *A History of Economic Ideas*, Longmans.

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

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

(Given in 1945-46 and alternate years.)

10. *Commercial Geography*.—See Commerce 5.

11. *Transportation*.—A comprehensive study of the fundamentals of transportation by land, sea, and air, 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. Mr. Currie. 3 units.

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

12. *Statistics 1*.—Statistical methods in relation to economic and social investigations; statistical groups; types of average; statistical series in time; trend and fluctuation; index numbers; methods of measuring correlation; elementary probabilities and the normal curve of error; problem of sampling.

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

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

Lectures: 9.30-10.30, Monday.

Laboratory (Statistics Laboratory, Vocational Guidance Building):

Section A, 1.30-3.30, Monday;

Section B, 1.30-3.30, Wednesday;

Section C (if required), 1.30-3.30, Friday.

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: Croston and Crowden, *Applied General Statistics*, Prentice-Hall; Ezekiel, *Methods of Correlation Analysis*, Wiley.

References: 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.

Assigned references.

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

Lectures: 9.30-10.30, Wednesday and Friday.

Laboratory (Statistics Laboratory, Vocational Guidance Building): 1.30-3.30, Tuesday or Thursday.

14. *Honours Seminar*.—Third and Fourth Year Honours and M.A. students in the Department are required to take this course.

Two hours a week, to be arranged.

Agricultural Economics

For courses in Agricultural Economics (1, 2, 50, 51) open to students in the Faculty of Arts and Science see page 299 under the Faculty of Agriculture.

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

(The courses in Government may not be given in 1944-45.)

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. 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.

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.

3 units.

4. *Problems of the Pacific*.—A course on the problems of the Pacific Area discussed at the conferences of the Institute of Pacific Relations. Each problem will be related to its economics and political background.

Readings to be assigned.

Three hours a week.

3 units.

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

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.

3 units.

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

6. *Public International Law*.—The nature, sources, and sanctions of international law; the notion of nationhood, with particular reference to the status of the British Dominions; jurisdiction, nationality, normal relations between states; settlement of international disputes; war; organization of peace after the present conflict.

Text-books: Hudson, *Cases on International Law*; Keith, *The Dominions as Sovereign States*.

Three hours a week.

3 units.

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

Sociology

1. *Introduction to Sociology*.—The approach to the study of society is by way of the local community and its institutions. An evaluation of the importance of the geographic, the biological, the psychological, and the cultural factors in the determination of the rise, growth, and functioning of groups will be undertaken. There will be an attempt to discover fundamental principles and to trace

these principles in their interrelations. Several of the problems resulting from group contacts will be studied.

Text-books: Pendell, *Society Under Analysis*, Cattell; Gillin and Gillin, *An Introduction to Sociology*, Macmillan.

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

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

2. *Social Anthropology*.—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*, Farrar and Rinehart; Goldenweiser, *Anthropology*, Crofts.

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

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

(May be given in 1944-45.)

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: Queen and Thomas, *The City*, McGraw-Hill; List and Halbert, *Urban Society*, 2nd edition, Crowell.

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

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

(Given in 1945-46 and alternate years.)

4. *Social Problems and Social Policy*.—A detailed study of significant modern Canadian social problems, together with a statement and evaluation of the more promising suggested solutions for these problems.

Readings to be assigned.

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

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

(Given in 1945-46 and alternate years.)

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: McCormick, *Elementary Social Statistics*, 1941, McGraw-Hill.

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 1944-45.)

6. *Introduction to Social Work*.—A general survey of the field of professional social work for students preparing to enter the graduate course in Social Work. The various types of social agencies will be studied with case illustrations of the work such agencies do and a general historical background will be reviewed in order to demonstrate how social agencies originated to meet existing needs.

Text-book: Fink, *The Field of Social Work*, Holt.

Three hours a week. Miss Smith. 3 units.

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

7. *The Dynamic Family*.—The genetic rise of the family will be traced and its modern forms described. Various statements on the functions of the family will be evaluated while the interrelations of religion, science, education, public opinion, law, and social change with the dynamic family are being sketched. An analysis of causation in family break-up will be made and recommendations for facilitating family life and for rehabilitating the broken family will be considered.

Text-books: Baber, *Marriage and the Family*, McGraw-Hill; Folsom, *The Family and Democratic Society*, Wiley.

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

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

(Given in 1944-45 and alternate years.)

8. *Criminology*.—The theoretic and scientific basis of criminology will be sketched through a study of opinions, cases, and institutions. An analysis of contemporary findings concerning causation in juvenile delinquency and in adult crime will be made. Reformist programmes will be evaluated and suggestions for a modern scientific system of treatment for Canadian criminals will be invited.

Text-books: Barnes and Teeters, *New Horizons in Criminology*, Prentice-Hall; Sutherland, *Principles of Criminology*, Lippincott; Topping, *Canadian Penal Institutions*, revised edition, Ryerson;

Report on the Penal System of Canada, 1938, King's Printer, Ottawa.

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

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

(Given in 1944-45 and alternate years.)

PROFESSIONAL COURSE IN SOCIAL WORK

Courses Open Only to Candidates for the Diploma

1. *History of Social Welfare.*

(Not given in 1944-45.)

2(a). *Social Case Work.*—An introductory course describing the philosophy of social case work, case work methods, and the types of problems to which case work can make a contribution.

Three hours a week. First Term. 1½ units.

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

2(b). *Social Case Work.*—A continuation of 2(a) with elaboration of methods and techniques through the study of case records.

Three hours a week. Second Term. Miss Smith. 1½ units.

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

3. *Problems of Child Welfare.*—An introductory course in which methods of caring for dependent, neglected, and delinquent children are presented and discussed.

Three hours a week. Second Term. Miss Harvey. 1½ units.

Lectures: 2.30-3.30, Wednesday; 2.30-4.30, Friday.

4. *Medical Information.*—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 Johnston and special lecturers.

2 units.

Lectures: 9.30-10.30, Monday and Wednesday.

5. *Advanced Case Work.*—Discussion of case material from specialized fields of practice designed to deepen the students' understanding of people and to increase the students' skills in case work practice.

Summer Session.

1½ units.

7. *Introduction to Social Group Work*.—This course furnishes an appreciation of the value and function of group work in the general field of social work. Specific attention is given to the group process; group work objectives; programme planning; leadership.

Three hours a week. First Term. Mr. Hearn. 1½ units.

Lectures: 8.30-9.30, Wednesday; 8.30-10.30, Friday.

9. *Beginning Field Work*.

Fifteen hours a week. 3 units.

Tuesday and Thursday.

10. *Advanced Field Work*.

Thirty hours a week. 3 units.

May, June, and July.

11. *Community Organization*.—An examination of the problem of identifying social needs in the community and of developing programmes to meet them. An analysis of the functions of the co-ordinating agencies in the community and of the professional social worker in the process of social planning.

Two hours a week. Second Term. Miss Bradford. 1 unit.

Lectures: 8.30-9.30, Wednesday and Friday.

12. *Social Work and the Law*.—The principles of law with which the social worker should become familiar; those defects in judicial administration that especially affect persons with low incomes; the structure of the court system; legal aid societies and their work.

Summer Session. 1½ units.

13(a). *Public Welfare*.—A descriptive study of public welfare organization with an emphasis upon Canadian developments of the past and present and a consideration of future plans.

Two hours a week. First Term. Mr. Creighton. 1 unit.

Lectures: 10.30-11.30, Monday and Wednesday.

13(b). *Public Welfare*.—Problems of administration in the field of public welfare.

Two hours a week. Second Term. Miss Smith. 1 unit.

Lectures: 10.30-11.30, Monday and Wednesday.

20. *Seminar in Social Research*.—Discussion of and practice in research methods. Preparation of studies.

Two hours a week.

During Intersession and Summer Session.

Nursing 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.

Department of Education

Professor and Head of the Department: G. M. Weir (On leave of absence.)

Professor and Acting Head of the Department: M. A. Cameron.

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

Lecturer: C. B. Wood.

Lecturers in Methods:

Professors: A. C. Cooke, L. A. MacKay.

Special Lecturers: Miss S. M. Boyles, Mrs. I. V. Green, T. R. Hall, A. R. Lord, Miss M. McManus, Miss G. Moore, Miss Anne Mossman, C. H. Scott, Miss D. Somerset, M. Van Vliet.

NOTES

1. Psychology 4, 6, and 9 may be counted as courses in Education.
2. 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.
3. Six units chosen from Education 9, 10, 12, 16, 20 to 39 may be taken for undergraduate credit but only by students who have completed their normal school training.
4. The Teacher Training Course consists of Education 9 to 15 inclusive.

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: To be announced.

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: Pressey and Robinson, *Psychology and the New Education*, Harpers.

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. (a) *Methods*.

1. *Elementary School Subjects*.

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

Two of these courses are required, 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.

3. *Additional Subjects*.—Art, Music, Health and Physical Education, Librarianship, Guidance, Speech, Dramatics.

(b) *Observation and Practice*.

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.

16. *High School Methods*.—In this course, which will be given by reading, methods of teaching two high school subjects will be studied. Not open to students in the Teacher Training Course nor to students who have not taken normal school training.

1½ units.

20. *History of Education.*—The development of educational theory from the time of ancient Greece to the present day, with special attention to the period since 1800.

3 units.

21. *Advanced Educational Psychology.*—A survey of recent psychological theories and a critical analysis of their implications for education.

3 units.

22. *Philosophy of Education.*—A study of current trends in educational philosophy; the social implications of contemporary educational theories.

3 units.

23. *Problems in Education.*—An investigation and report of an educational problem.

3 units.

24. *Methods of Educational Research.*—The scientific method in education; discovering educational problems; types of educational research; standards in thesis writing; critical study of published research. This course may be successfully taken with Education 28.

1½ units.

25. *Administration of School Systems.*—Dominion participation in education; the Provincial Department of Education; centralization and decentralization; school finance; the local unit of administration.

1½ units.

26. *Administration of the Elementary School.*—The organization of the elementary school; the work of the principal; participation of staff in administration.

1½ units.

27. *Administration of the Secondary School.*—The administrative staff and their duties; office routine; administration of guidance programme; assemblies; co-curricular activities; construction of the time table. Applications to British Columbia circumstances will be stressed throughout.

1½ units.

28. *Educational Statistics.*—The frequency distribution; measures of central tendency; measures of variability; the normal probability curve and its applications; sampling; reliability; correlation, its meaning and application; partial and multiple correlation.

1½ units.

29. *The Secondary School*.—A foundation for this course will be laid by a study of the basic principles of secondary education. Consideration will be given to some of the more important modern developments in the light of these principles both in Canada and in other countries of the world.

1½ units.

30. *Psychology of Adolescence*.—The junior and senior high school pupil as an individual and as a member of social groups; the physical, mental, social, emotional, and religious development typical of adolescence; the interests of teen-age boys and girls and their problems in personal relations, in the home, in the school, and in the community.

1½ units.

31. *Psychology of Childhood*.—The mental, social, emotional, and physical characteristics of pre-school and elementary school pupils; their interests and their problems; implications for organization and administration of school systems.

1½ units.

32. *Psychology of the School Subjects*.—This course aims to cover that part of educational psychology which is directly concerned with classroom subject-matter activities. It considers the research findings in the various elementary and secondary school fields and applies them to teaching and learning procedures.

1½ units.

33. *Psychology of Exceptional Children*.—The physical, mental, social, and emotional characteristics of exceptional children (gifted, backward, crippled, hard-of-hearing, etc.); factors in their growth and development; educational provisions suited to their needs.

1½ units.

34. *Diagnostic and Remedial Instruction*.—This course is intended to help teachers in their work with seriously retarded pupils. It includes a study of the diagnostic point of view in education, types and causes of subject-matter disabilities, and possible remedies of difficulties. Disabilities in spelling, reading, and arithmetic will be studied chiefly, and over half the course will be devoted to reading. Some opportunity will be given teachers to specialize on primary, intermediate, or secondary school levels of work.

1½ units.

35. *Guidance*.—The objectives of guidance; gathering and using information concerning students; counselling with students; articu-

lation of the different forms of guidance; contributions of teachers, principal, and specialists in guidance; analysis of guidance programmes in secondary schools.

1½ units.

36. *Supervision*.—A study of techniques for the improvement of instruction. Responsibilities of inspectors, supervisors, and principals.

1½ units.

37. *Comparative Education*.—Types and systems of schools in some of the principal nations. Study will be mostly but not entirely of England, France, Germany, the United States, and Canada.

1½ units.

38. *Evaluation*.—The basic principles of evaluation; tests and measuring instruments for the determination of the outcomes of instruction; analyzing the results of evaluation.

1½ units.

39. *Teaching in the Secondary School*.—This course on modern techniques of secondary school teaching will include a study of such matters as socialized procedures and provision for individual differences through unit methods. Some opportunity for specialization according to subject will be provided.

1½ units.

Department of English

Professor and Head of the Department: G. G. Sedgewick.

Professor: W. L. MacDonald.

Professor: F. G. C. Wood.

Professor: Thorleif Larsen.

Associate Professor: Miss Dorothy Mawdsley.

Assistant Professor: H. C. Lewis.

Assistant Professor: Mrs. Dorothy Blakey Smith.

Assistant Professor: Edmund Morrison.

Assistant Professor: F. E. L. Priestley.

Assistant Professor: John H. Creighton.

Instructor: G. P. V. Akrigg.

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 1944-45: An anthology of short stories to be announced; 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*; an anthology of contemporary poetry.

Two hours a week.

(b) *Composition*.—Elementary forms and principles of composition.

Text-books: Foerster and Steadman, *Writing and Thinking*, new edition, Houghton Mifflin; 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;

Section 4, 11.30-12.30, Tuesday, Thursday, Saturday, and 2.30-3.30, Tuesday;

Section 5, 2.30-3.30, Tuesday, Wednesday, Thursday, and Friday.

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 1944-45 9 (b) will be given as follows:

- i. A detailed study of the text of *A Midsummer Night's Dream*; *Henry IV, Part I*; *Othello*; *Antony and Cleopatra*; *Coriolanus*.
- ii. Lectures on Shakspeare's development, on his use of sources, and on his relation to the stage and the dramatic practice of his time.

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

Three hours a week. Mr. Sedgewick. 3 units.
Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

9. (a) (Given in 1945-46 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; *The Chief Elizabethan Dramatists*, ed. Neilson, Houghton Mifflin; *Shakespeare*, Shakespeare Head Press, or the *Cambridge Shakespeare*, ed. Neilson and Hill, 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, Smollet, and Sterne through Goldsmith, Mrs. Radcliffe, Jane Austen, Scott, C. Brontë, Dickens, Thackeray, and George Eliot to Trollope, Meredith, Stevenson, Hardy, and a few representative novelists now living.

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

Three hours a week. Mr. Wood. 3 units.
Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

14. *Eighteenth Century Literature*.—This course aims to give a view, as comprehensive as possible, of the main currents of English

thought and literature during the period 1660-1800. It is concerned mainly with the work of such men as Dryden, Pope, Swift, Addison, Steele, Johnson, Goldsmith, Burke, and Burns.

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

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

(Not given in 1944-45.)

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

Texts: Students should provide themselves with the poems of the authors listed above. The Oxford editions are recommended, but are not required.

References: Bernbaum, *Guide Through the Romantic Movement*, Nelson; Elton, *A Survey of English Literature 1780-1830*, Macmillan.

Three hours a week. Mrs. Smith. 3 units.

Lectures: 11.30-12.30, 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; Stephens, Beck, and Snow, *Victorian and Later English Poets*, American Book Company.

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

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

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

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

Huxley, ed. Rinaker, 1934, Harcourt, Brace; Butler, *Erewhon*, Everyman.

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

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

19. *Contemporary Literature*. — Some tendencies of English literature of the present generation, in poetry and the essay and the novel, will be studied in this course.

Texts: Noyes, *Readings in the Modern Essay*, Houghton Mifflin; Sanders and Nelson, *Chief Modern Poets of England and America*, Macmillan.

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

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

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.

Lectures: 1.30-3.30, Tuesday and Thursday.

21. *Anglo-Saxon*.—Moore & Knott, *The Elements of Old English*, edition of 1940 or later, Wahr.

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

Lectures: 3.30-5.30, Thursday.

22. *The History of the English Language*.—The study of the vocabulary, syntax, accidence, and phonology of the English language from the historical point of view. A brief introduction to philological method; the ancestry of English; the language in the Old and Middle English periods, with illustrative readings; the development of modern English.

Prerequisite: English 21.

Two hours a week. Mrs. Smith. 2 units.

Lectures: To be arranged.

24. (a) and (b) *Seminars*.

(a) *Bibliography and General Method*.—Third Year Honours students in English are required to take this course.

One hour a week. Mrs. Smith.

Lectures: To be arranged.

(b) *Practice with Problems of Criticism and Investigation*.—All Honours students in English, whether of the Third or

the Fourth Year, are required to take this course. The subject for 1944-45 will be announced later.

Hours: 3.30-5.30, Friday. 2 units.

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.

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 and Head of the Department: 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.

Assistant Professor: Vladimir J. Okulitch.

Lecturer: Mrs. Gwendolen O'Brien.

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 and to Jan. 31. 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 may 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 and to Jan. 31. 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 from Feb. 1. Mr. Williams.

Lectures: 9.30-10.30, Monday and Wednesday.

(d) *Laboratory Exercises in Historical Geology*, including the study of index fossils representative of the periods of geological time.

Two hours laboratory a week. Second Term from Feb. 1. Mr. Williams and assistants.

Laboratory: 1.30-3.30, Tuesday or Thursday.

Text-book: Longwell, Knopf, Flint, Schuchert, Dunbar, *Outlines of Geology*, 1941, Wiley.

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

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. The course includes practice in graphical methods for solving various 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. *History of the Earth Sciences and Geological Theories*.—A brief study of the development of the geological sciences and theories employed in geological interpretations.

References: Geikie, *The Founders of Geology*, Macmillan; Merrill, *The First One Hundred Years of American Geology*, Yale; Adams, *The Birth and Development of the Geological Sciences*, Williams and Wilkins.

Prerequisite: Geology 1.

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

Lectures: 11.30-12.30, Tuesday.

NOTE. Geology 5 may be counted as a course in Geography.

6. *Palaeontology*.—A study of invertebrate and vertebrate fossils, their classification, identification, and geological distribution.

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. For students majoring or taking Honours in Zoology, a reading course in historical geology may be substituted for Geology 1.

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

Lectures: 9.30-10.30, Wednesday and Thursday.

Laboratory: 3.30-5.30, Thursday.

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: 3.30-4.30, Tuesday, and 9.30-10.30, 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: Bateman, *Economic Mineral Deposits*, 1942, Wiley.

Prerequisites: Geology 2, 4, and 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.

Text-book: Lahee, *Field Geology*, 4th ed., 1941, McGraw-Hill.

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

Prerequisites: Geology 2 and 4.

Two hours a week in the Second Term by arrangement and ten days in the field at the close of examinations in the spring. Mr. Gunning.

1½ units.

11. *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. 3 units.

Lectures: 8.30-9.30, Monday and Wednesday; 1.30-2.30, Monday.

COURSES FOR GRADUATE STUDENTS

20. *Sedimentation.*

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

Prerequisites: Geology 2 and 11.

Two seminars 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

NOTE. Commerce 5 (as a Second Year course) and Geology 5 (as a Third or Fourth Year course) may be taken as courses in 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 only 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.

As geography is a study of man in relation to his environment, the lectures involve a consideration of earth relations and the principal occupations of man, and a brief introduction to man and his response to geographical environment. The laboratory portion of the course includes elementary map making and map reading; a study of the common minerals, rocks, and fossils; a consideration

of population responses to varying conditions of temperature, humidity, and food as illustrated by experiments with *Drosophila*, and some elementary soil analyses. The role of bacteria in soils may also be demonstrated. The rate of growth of wheat seedlings or bacteria as affected by temperature, hydrogen-ion concentration, and the presence of toxic substances, may be shown.

Geography 1 is prerequisite for all other courses in Geography except Geography 2 and is a prerequisite for any student wishing to take Geography as either a Major or a Minor subject.

Text-books: Klimm, Starkey & Hall, *Introductory Economic Geography*, 2nd edition, Harcourt, Brace, chapters 1-31 inclusive; Stamp, *An Intermediate Commercial Geography, Part I, Commodities and World Trade*, Longmans, chapters 1-12 inclusive.

References: James, *An Outline of Geography*, Ginn; Case and Bergsmark, *College Geography*, Wiley.

An atlas is requisite; failing a large, comprehensive atlas, one of the following inexpensive 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.

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

Lectures: 2.30-3.30, Monday and Wednesday.

Laboratory: 3.30-5.30, Friday.

2. (a) *Weather*.—Introduction to the study of weather phenomena.

Text-book: Trewartha, *An Introduction to Weather and Climate*, McGraw-Hill.

References: Blair, *Weather Elements*, Prentice-Hall; Pettersen, *Introduction to Meteorology*, McGraw-Hill.

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

Lectures: To be arranged.

Laboratory: To be arranged.

(Given in 1945-46 and alternate years.)

2. (b) *Climate*.—A study of climatic classification and description and distribution of climatic types.

Text-book: Trewartha, *An Introduction to Weather and Climate*, McGraw-Hill.

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

Lectures: To be arranged.

Laboratory: To be arranged.

(Given in 1945-46 and alternate years.)

3. *Human and Regional Geography*.—A study of man and his physical environment treated regionally.

Reference: Newbigins, *A New Regional Geography of the World*, Harcourt, Brace.

Prerequisite: Geography 1.

Three hours a week.

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.

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

Prerequisite: Geography 1 or Geology 1.

Two lectures and two hours laboratory a week.

3 units.

Lectures: 11.30-12.30, Tuesday and Thursday.

Laboratory: To be arranged.

Department of History

Professor and Head of the Department: W. N. Sage.

Professor: F. H. Soward. (On leave of absence.)

Associate Professor: A. C. Cooke.

Instructor: Miss Sylvia Thrupp. (On leave of absence.)

Lecturer: Miss Margaret A. Ormsby.

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 86, 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.*

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 First World War, The First 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, Britain and France between the Wars, The New Balkans, The Little Entente and Poland, Nationalism and Imperialism in the Far East, The United States and World Peace, The Road to the Second World War.

Text-books: Bennis, *Europe Since 1914*, Crofts, or Langsam, *The World Since 1914*, Macmillan; Schmitt, *Triple Alliance and Triple Entente*, Oxford; Carr, *Conditions of Peace*, Macmillan (for upper year credit).

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. Miss Ormsby. 3 units.

Lectures: 2.30-3.30, Monday and Wednesday.

The third hour will be devoted to group discussions.

2. *The History of Canada*.—Geographical factors; exploration and early settlements; the French Régime; constitutional development, 1759-1867; economic and social progress to Confederation; development of the Dominion of Canada since 1867; Canada in the Commonwealth; Canada in the world.

Text-books: Wittke, *A History of Canada*, McClelland and Stewart; Wrong, *The Canadians*, Macmillan; Scott, *Canada Today*, Oxford; Sage, *Canada from Sea to Sea*, University of Toronto; Currie, *Canadian Economic Development*, Nelson; *Report of the Royal Commission on Dominion-Provincial Relations, Book I, Canada, 1867-1939*, King's Printer, Ottawa.

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 1944-45 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; Howay, Sage, and Angus, *British Columbia and the United States*, Ryerson.

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 1945-46 and alternate years.)

THIRD AND FOURTH 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: Stephenson, *Mediaeval History*, revised edition, Harpers..

Essays are assigned throughout the session. This course is open also to Second Year students.

Three hours a week. 3 units.

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

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 1688*.—This course aims at an interpretation of the political, constitutional, economic, and religious development of the British Isles from the earliest times to the Revolution of 1688.

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 1944-45, and alternate years, 11 (a) will be given, which deals with British colonial policy, the development of the Dominions, and problems of the Commonwealth.

Text-book: Knaplund, *The British Empire, 1815-1939*, Harpers.

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.

3 units.

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

(Not given in 1944-45.)

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

Text-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: Garrett, *European History, 1500-1815*, Heath; Dorn, *Competition for Empire*, Harpers; 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: 10.30-11.30, Tuesday, Thursday, and Saturday.

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; Hall and Davis, *The Course of Europe Since Waterloo*, Appleton-Century.

Essays will be assigned throughout the session.

Three hours a week. Miss Ormsby.

3 units.

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

16. *Social and Economic History of Mediæval 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 Mediæval Europe*, and *Mediæval Cities and the Revival of Trade*, Kegan Paul. Further reading assigned.

Essays will be assigned throughout the session.

3 units.

(Not given in 1944-45.)

17. *World Economic History, 1850-1943*.—A comparison of the means by which industrial progress has been achieved in Western Europe, the Americas, Japan, Russia, and India, and a study of the social changes involved. Regular reading will be required, but no essays.

Three hours a week.

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 1944-45.)

19. *Great Britain Since 1688*.—This course aims at an interpretation of the constitutional, political, economic, and religious development of the British Isles since 1688.

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.

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.

3 units.

(Not given in 1944-45.)

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.

(b) Fourth Year: *Problems of Modern British History*. Mr. Sage.

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

24. *History of Latin America*.

3 units.

(Not given in 1944-45.)

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.

3 units.

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

Greek 9. *Greek History to 14 A.D.* (See under Classics, page 137.)

Latin 7. *Roman History*. (See under Classics, page 140.)

Department of Home Economics

Associate Professor and Acting Head of the Department: Miss Dorothy P. Lefebvre.

Assistant Professor: Miss Stella Beil.

Assistant Professor: Miss Charlotte S. Black.

The following courses are open only to students of the degree course in Home Economics except by permission of the Faculties concerned.

A. Introduction to Foods and Nutrition.—An introductory course designed to give basic principles of food preparation and of nutrition.

Text-books: Sherman and Lanford, *Essentials of Nutrition*, 2nd edition, Macmillan; Wilmot and Batjer, *Food for the Family*, Lippincott.

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

1½ units.

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory: 2.00-5.00, Thursday.

B. Introduction to Textiles and Clothing.—An introductory course designed to give basic principles of textile selection and of clothing construction by using commercial patterns.

Text-book: Erwin, *Practical Dress Design*, Macmillan.

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

1½ units.

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory: 3.15-6.15, Thursday.

1. *Foods and Nutrition.*—Lectures are devoted to a study of human nutrition with emphasis on the requirements of the normal adult. The preparation of various types of food is presented from the experimental viewpoint in the laboratory hours.

Text-books: To be announced.

Prerequisite: Home Economics A or equivalent.

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

1½ units.

Lectures: 10.30-11.30, Tuesday and Thursday.

Laboratory: Section 1, 2.00-5.00, Tuesday; Section 2, 8.30-11.30, Saturday.

2. *Principles of Design.*—The study and application of fundamental art principles to problems in design. Application of design principles to dress. Wardrobe planning.

Text-book: Goldstein, *Art in Everyday Life*, 3rd edition, Macmillan.

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

Lectures: 10.30-11.30, Tuesday and Thursday.

Laboratory: Section 1, 3.15-6.15, Tuesday; Section 2, 8.30-11.30, Saturday.

3. *Clothing*.—Development of foundation patterns. Flat pattern designing. Consumer problems in relation to ready-to-wear.

Text-book: Latzke and Quinlan, *Clothing*, Lippincott.

Prerequisite: Home Economics B or equivalent.

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

1½ units.

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory: Section 1, 3.15-6.15, Tuesday; Section 2, 3.15-6.15, Thursday; Section 3, 8.30-11.30, Saturday.

Fourth hour to be arranged.

4. *Food Management*.—Food buying and utilization, food legislation, brands and grades. Meal planning and table service. Advanced food preparation related to food service. Group preparation and service of at least one meal.

Text-book: Wilmot and Batjer, *Food for the Family*, Lippincott.

Prerequisite: Home Economics 1.

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

1½ units.

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory: Section 1, 2.00-5.00, Tuesday; Section 2, 2.00-5.00, Thursday; Section 3, 8.30-11.30, Saturday.

5. *Household Equipment and Furnishings*.—A study of house plans, furnishings, and equipment. Problems of selection and care of equipment and furnishings.

Text-books: To be announced.

Prerequisite: Physics A or Physics C or Physics 1.

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

1½ units.

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

Laboratory: 9.30-11.30, Saturday.

6. *Economics of the Household*.—Family expenditures and standards of living. Budgeting of time, energy, and family funds.

Text-books: To be announced.

Prerequisite: Economics 1.

Two lectures and two hours discussion a week. Second Term.

1½ units.

Lectures: 9.30-10.30, Monday and Wednesday.

Discussion: 9.30-11.30, Saturday.

7. *Experimental Cookery*.—Experimental procedure applied to food preparation. Each student will undertake the solution of a cookery problem.

Text-book: Lowe, *Experimental Cookery*, 3rd edition, Wiley.

Prerequisite: Home Economics 1.

One lecture and five hours laboratory a week.

This course may be taken in either term. 1½ units.

Lectures: First Term, 10.30-11.30, Wednesday; Second Term, 10.30-11.30, Friday.

Laboratory: First Term, 2.00-5.00, Wednesday; 2.00-4.00, Friday; Second Term, 2.00-5.00, Wednesday; 10.30-12.30, Thursday.

8. *Advanced Nutrition and Dietetics*.—Food requirements of the healthy infant, child, adolescent, and adult. These requirements applied to the planning of adequate dietaries at various cost levels. Students will be expected to present oral and written reports of recent advances in the science of nutrition.

Reference: Sherman, *Chemistry of Food and Nutrition*, 6th edition, Macmillan.

Prerequisite: Home Economics 1.

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

1½ units.

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: 2.00-5.00, Friday.

9. *Textiles*.—A study of textile construction, finish, and design. Identification of fibers. Problems of textile consumers.

Text-books: To be announced.

Prerequisite: Chemistry C.

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

(Not given in 1944-45.)

10. *Advanced Clothing*.—Development of dress design by means of draping. A study of the social significance of fashion.

Text-books: To be announced.

Prerequisite: Home Economics 3.

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

(Not given in 1944-45.)

11. *Advanced Foods*.—A course in advanced food preparation with emphasis placed upon the more difficult techniques of preparation and service. Students will devote considerable time to the planning and presentation of food demonstrations.

References: To be announced.

Prerequisite: Home Economics 4.

One lecture and five hours laboratory a week. First Term.
1½ units.

(Not given in 1944-45.)

12. *Interior Decoration*.—Application of design principles to furnishing and decorating homes.

Text-books: To be announced.

Prerequisite: Home Economics 2.

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

(Not given in 1944-45.)

13. *Diet Therapy*.—A discussion of the relation of normal nutrition to certain diseases and the part that diet therapy may play in their treatment. Special diets are calculated and prepared in the laboratory

Text-books: To be announced.

Prerequisite: Home Economics 8.

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

(Not given in 1944-45.)

14. *Quantity Cookery*.—Experience in the preparation of food in large quantities.

- Text-books: To be announced.
Prerequisite: Home Economics 4.
One lecture and five hours laboratory a week. Second Term. 1½ units.
(Not given in 1944-45.)
15. *Institution Administration*.—Discussion of the organization and administration problems of food departments of institutions.
Text-books: To be announced.
Open only to Third and Fourth Year students.
Two lectures and four hours laboratory a week. First Term. 1½ units.
(Not given in 1944-45.)
16. *Institution Buying*.—Discussion of problems of purchasing food in large quantities and of the selection, arrangement, and care of equipment for large quantity food service.
References: To be announced.
Open only to Third and Fourth Year students.
Three lectures a week. Second Term. 1½ units.
Field trips to be arranged.
(Not given in 1944-45.)
17. *Home Management*.—(To be arranged.)
Open only to Fourth Year students.
First or Second Term. 1½ units.
(Not given in 1944-45.)
18. *Child Development*.—The physical, mental, social, and emotional development of the infant and pre-school child. Discussion of care and problems of training.
Text-books: To be announced.
Prerequisite: Psychology 1.
Two lectures and three hours observation a week. Second Term. 1½ units.
(Not given in 1944-45.)
19. *Family Relations*.—A study of the dynamic relations of family members to one another and to the community.
Text-books: To be announced.
Open only to Fourth Year students.
Three lectures a week. First Term. 1½ units.
(Not given in 1944-45.)

Department of Mathematics

Professor and Head of the Department: Daniel Buchanan.
 Professor: F. S. Nowlan.
 Professor: Ralph D. James.
 Professor:
 Professor: Walter H. Gage.
 Associate Professor: S. A. Jennings.
 Instructor: Miss May L. Barclay.

FOR FIRST YEAR STUDENTS

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: Nowlan, *Analytic Geometry*, McGraw-Hill; Rider, *Plane and Spherical Trigonometry*, Macmillan; Hedrick, *Logarithmic and Trigonometric Tables*, revised edition, Macmillan.

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, Wednesday.

PRIMARILY FOR SECOND YEAR STUDENTS

2. *Algebra, Calculus, and Geometry*.—Induction, complex numbers, Horner's method, series, undetermined coefficients, determinants; introduction to differential and integral calculus, with various applications; review of conics, introduction to solid analytic geometry.

Text-books: Nowlan, *College Algebra*; Nowlan, *Analytic Geometry*, McGraw-Hill.

Calculus text to be announced.

Three hours a week. 3 units.

Lectures:

- Section 1, 10.30-11.30, Monday, Wednesday, Friday. Mr. James.
- Section 2, 10.30-11.30, Tuesday, Thursday, Saturday. Mr. Nowlan.

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. 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 1945-46 and alternate years.)

5. *Spherical Trigonometry*.—An introductory course.

Text-book: Hammond, *Concise Spherical Trigonometry*, Houghton Mifflin.

One hour a week. 1 unit.

Lectures: 1.30-2.30, Wednesday.

PRIMARILY FOR THIRD YEAR STUDENTS

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. *Mathematical Analysis*.—A study of mathematical principles which are of importance in pure and applied mathematics. Applications to specific problems in mathematics, chemistry, and physics.

Text-book: To be announced.

Two hours a week. Mr. James. 2 units.
Lectures: 1.30-2.30, Monday and Friday.

12. *Differential Equations*.—Ordinary and partial differential equations with various applications to geometry, mechanics, physics, and chemistry.

Text-book: Murray, *Differential Equations*, Longmans.

This course may be taken concurrently with Mathematics 10.

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

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

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 1944-45 and alternate years.)

PRIMARYLY FOR FOURTH YEAR STUDENTS

15. *Higher Algebra*.—Postulational treatment of various algebraical systems, including groups, rings, and fields; elementary divisibility properties of the rational integers, including Fermat's theorem and the Euler function.

Text-book: To be selected.

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

Two hours a week. 2 units.

Lectures: 11.30-12.30, Tuesday and Thursday.

(Given in 1945-46 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, successive integration, elliptic integrals, harmonic analysis, and Fourier series.

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

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

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

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

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, Mathematics 12.

Text-book: Synge and Griffith, *Principles of Mechanics*, McGraw-Hill.

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

This course may be taken either as an undergraduate or as a graduate course.

(Given in 1944-45 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.

1 unit.

19. *Advanced Geometry*.—An introduction to projective and metric geometry, including a brief discussion of non-euclidean geometries. Fundamentals of differential geometry in two and three dimensions.

Prerequisites: Mathematics 12, 13.

Text-book: To be announced.

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

Lectures: 11.30-12.30, Tuesday and Thursday.

(Given in 1944-45 and alternate years.)

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: Birkhoff and MacLane, *Survey of Modern Algebra*.
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 and Head of the Department: D. O. Evans.
 Professor of French: A. F. B. Clark.
 Professor of German: Miss Isabel MacInnes.
 Assistant Professor of French: Miss Janet T. Greig.
 Assistant Professor of French: Miss Dorothy Dallas.
 Assistant Professor of German: Miss Joyce Hallamore.
 Assistant Professor of German: Charles E. Borden.
 Assistant Professor of Spanish: C. V. Brooke.
 Instructor in French: Madame Y. Darlington.
 Lecturer: Miss Ethel Harris.

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, *L'Avare* (Larousse), Dent, *Les Cent meilleurs poèmes lyriques*, Gowans & Gray; Barton and Sirich, *French Review Grammar and Composition*, Crofts.

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, *César Birotteau*, Nelson; Anatole France, Nelson. Independent reading to include Balzac, *Le Père Goriot*; Anatole France, *Le Crime de Sylvestre Bonnard*, Holt; and the author listed under *Summer Reading*.

Composition in French based on the above readings, and from Ratner and Sorokin, *French Review Grammar*, Gage.

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 *Les Femmes Savantes*, Didier, or *L'Avare*, Manchester University; *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 diction and imagery from 1820 onwards.

Texts: Berthon, *Nine French Poets*, Macmillan; Victor Hugo, *Selections*, Manchester University; Charles Marc des Granges, *Les poètes français 1820-1920*, Hatier.

Independent readings to include Vigny, *Eloa*. See also, under *Summer Reading*, Chateaubriand and Rivarol.

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 Fourmestraux, *French Intonation Exercises*; Basean, *Manuel pratique de prononciation et de lecture*, Dent.

Three hours a week.

3 units.

4. (a) *The Romantic Movement*.—Romanticism, lyrical and social, in French literature; its significance in poetry and life.

Texts: Victor Hugo, *Hernani*, Nelson; *Ruy Blas*, Delagrave; Alfred de Vigny, *Chatterton*, Oxford; Alfred de Musset, *Three Plays*, Nelson. Independent readings include the plays of Marivaux, Voltaire, Sedaine, and Banville listed under *Summer Reading*.

Reference: Stewart and Tilley, *The Romantic Movement in French Literature*, Cambridge.

Prerequisites: French 3 (a) and (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) 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; Rabelais, *Gargantua* xiv, xv,

xxi, xxiii, xxiv, *Pantagruel* viii, Jouaust; Montaigne, *Essais* i, xxv; 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.

Text: *Anthologie de la nouvelle poésie française*, Kra.

Lectures expliquées from Valéry, *Variété* i, Gallimard; Gide, *Pages de Journal*, Gallimard; Valery 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.

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. 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;

Sections 4 and 6, 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, Thursday, or Saturday.

1. (a) Texts: Chiles, *German Composition and Conversation*, Part I, Ginn; Appelt and Funke, *Modern German Prose*, Heath; Kästner, *Drei Männer im Schnee*, Crofts; 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 and 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.

Three hours a week.

3 units.

Lectures:

Section 1, 11.30-12.30, Monday, Wednesday, and Friday;

Section 2, 2.30-3.30, Monday, Wednesday, and Friday.

3. (a) *The Classical Period*.—Lectures on the development of 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: 11.30-12.30, 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 nineteenth 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.

Spanish

Beginners' Course.—Grammar, composition, translation, conversation.

Texts: House and Mapes, *Essentials of Spanish*, Ginn; Hills, *Spanish Tales*, Holt; Oteyza, *El Diablo Blanco*, Macmillan.

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

Lectures:

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

Section 2, 9.30-10.30, Monday, Wednesday, and Friday;

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

Fourth hour to be arranged.

1. Review of grammar, composition, translation, conversation.

Texts: To be announced.

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

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

Department of Philosophy and Psychology

Professor and Head of the Department: John Allan Irving.
 Associate Professor: Thomas G. Henderson. (On leave of absence.)
 Associate Professor: Joseph E. Morsh.
 Associate Professor: Alexander P. Maslow.
 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. During 1944-45 the philosophical issues involved in the war will be discussed. This course may be counted for credit as a Second, Third, or Fourth Year subject.

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. *Ancient and Mediaeval 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; the development of mediaeval philosophy to the Renaissance.

Text-books: Nahm, *Selections from Early Greek Philosophy*, Crofts; Plato, *Republic*, Macmillan; Edman, ed., *The Philosophy of Plato*, The Modern Library; Aristotle, *Selections*, ed. Ross, Scribners; Clark, *Selections from Hellenistic Philosophy*, Crofts; St. Augustine, *Confessions*, Everyman.

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

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

(Given in 1944-45 and alternate years.)

3. *Early 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; the Kantian philosophy.

Text-books: Burt, *The English Philosophers from Bacon to Mill*, The Modern Library, Random House; Descartes, *Selections*, Scribners; Spinoza, *Selections*, Scribners; Leibniz, *Discourse on Metaphysics*, Open Court; Kant, *Prolegomena*, Open Court.

Three hours a week.

3 units.

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

(Given in 1945-46 and alternate years.)

4. *Recent European and American 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: Rand, *Modern Classical Philosophers*, Houghton Mifflin. This will be supplemented by reading assignments in other recent original sources.

Three hours a week. Mr. Maslow.

3 units.

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

(Given in 1944-45 and alternate years.)

5. *Ethics*.—The development of ethical thought within the history of civilization. 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. The interrelation between individual and social morality will be stressed.

Text-book: Dewey and Tufts, *Ethics*, revised edition, Holt.

Three hours a week.

3 units.

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

(Given in 1945-46 and alternate years.)

6. *Aesthetics*.—The investigation of the nature of the aesthetic experience. Art and its place in the normal life of the individual and society. A brief survey of aesthetic theory with a more detailed study of the main trends of modern thought in aesthetics. The

views of contemporary philosophers, psychologists, and artists will be stressed. Illustrations will be drawn largely from literature and the visual arts.

Text-books: Tolstoy, *What is Art?* Oxford; Rader, *A Modern Book of Aesthetics*, Holt.

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

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

7. *Philosophy of Education*.—A course of lectures and discussions dealing with educational movements since the beginning of the nineteenth 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*.

Three hours a week. 3 units.

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

(Not given in 1944-45.)

8. *Logic and Scientific Method*.—A general course in the fundamental problems of logic and scientific method, for students of the natural and social sciences as well as philosophy. The function of reason in the discovery and systematization of scientific knowledge will be emphasized throughout the course.

Text-books: Cohen and Nagel, *An Introduction to Logic and Scientific Method*, Harcourt, Brace; Lenzen, *Procedures of Empirical Science*, University of Chicago.

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

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

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. Contemporary social and political philosophy in China and in Japan. Proposals for social reconstruction in the post-war period.

Text-book: MacIver, *The Modern State*, Oxford.

Three hours a week. Mr. Irving. 3 units.
 Lectures: 9.30-10.30, Monday, Wednesday, and Friday.
 (Given in 1944-45 and alternate years.)

20. *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.
 Seminar: 2.30-4.30, Thursday.
 (Given in 1944-45 and alternate years.)

Psychology

Psychology 1 is a prerequisite for all courses in Psychology numbered 2-20, which are open only to Third and Fourth Year students.

A. *Introduction to Psychology*.—The beginnings of psychology; psychology among the sciences and the pseudo-sciences; the fields of psychology; adjustment to college and life; learning and study; applications of psychology. Open to First Year students.

Text-book: To be announced.
 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 coordination,

attention, learning, memory, and reasoning. Open to Third and Fourth Year students by permission of the instructor.

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

References: Bills, *Experimental Psychology*, Longmans; Boring, *Sensation and Perception in the History of Experimental Psychology*, Appleton-Century; Murchison, ed., *The Foundations of Experimental Psychology*, Clark University.

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, rumors in wartime, crowd behaviour, social movements, leadership, the psychological effects of air-raids, and civilian morale in wartime.

Text-book: Katz and Schanck, *Social Psychology*, Wiley.

Prerequisite: Psychology 1.

Three hours a week. Mr. Irving.

3 units.

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

(Given in 1945-46 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.

5. *Abnormal Psychology*.—The study of abnormal behaviour and mental processes as an approach to the understanding of human nature. The lectures will be supplemented with field trips and case studies.

Text-book: Dorcus and Shaffer, *Abnormal Psychology*, 2nd edition, Williams and Wilkins.

Prerequisite: Psychology 1.

Three hours a week. Mr. Morsh.

3 units.

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

6. *Statistics*.—Statistical methods applied to psychological investigations; measures of central tendency and variability; correlation; the normal curve of error; sampling and reliability; the analysis of variance and covariance; factor analysis.

Text-book: To be announced.

Prerequisite: Psychology 1.

Three hours a week. Mr. Tyler.

3 units.

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

(Given in 1945-46 and alternate years.)

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: To be announced.

Prerequisite: Psychology 1.

Three hours a week.

3 units.

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

(Not given in 1944-45.)

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.

Three hours a week. Mr. Irving.

3 units.

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

(Not given in 1944-45.)

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: To be announced.

Prerequisite: Psychology 1.

Three hours a week. Mr. Morsh.

3 units.

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

(Not given in 1944-45.)

10. *Mental Measurement and Psychological Tests.*—

(a) The principles underlying the construction and interpretation of various psychological measuring instruments; intelligence tests, personality inventories, questionnaires, and application blanks.

(b) The use and interpretation of standardized psychological measuring instruments, including the administration of the Stanford-Binet intelligence examination, personality questionnaires, interest tests, and attitude scales.

It is suggested that students should take Psychology 6 before Psychology 10.

Text-book: Thurstone, *The Reliability and Validity of Tests*, Edwards.

Prerequisite: Psychology 1.

Three hours a week. Mr. Tyler.

3 units.

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

(Given in 1944-45 and alternate years.)

20. *Psychology Seminar: The Learning Process.*—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.

Prerequisite: Psychology 1.

Three hours a week. Mr. Morsh.

3 units.

Lectures: 11.30-12.30, Monday.

Seminar: 2.30-4.30, Thursday.

(Given in 1945-46 and alternate years.)

Department of Physics

Professor and Head of the Department: Gordon Merritt Shrum.
 Professor: A. E. Hennings.
 Associate Professor: Harold D. Smith.
 Assistant Professor: A. M. Crooker. (On leave of absence.)
 Assistant Professor: Kenneth C. Mann. (On leave of absence.)
 Assistant Professor: George Michael Volkoff. (On leave of absence.)
 Lecturer: R. Eric Langton.
 Lecturer: William Petrie.
 Lecturer: R. Keith Brown.
 Lecturer: J. H. L. Watson.
 Lecturer: Kenneth O. Wright.

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:

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

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

C. *Elementary Physics*.—An elementary course in general physics for students taking courses in the Department of Home Economics. The course will cover mechanics, molecular physics, heat, sound, light, electricity, and modern physics without stressing their mathematical aspect. Topics which are of particular interest in home economics will be given special emphasis.

Text-book: To be announced.

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

1. *Elementary Physics*.—A study of general college physics suitable for those students who have obtained credit for University Entrance Physical Sciences 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 Physical Sciences 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;
Section 3, 10.30-11.30, Monday, Wednesday, Friday;
Section 4, 11.30-12.30, 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.

References: Robertson, *Radiology Physics*, Van Nostrand; Stuhlman, *Introduction to Biophysics*, Wiley.

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; Allen and Maxwell, *Text-book of Heat*, Macmillan.

Prerequisite: Physics 1.

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

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

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.

Text-book: Loeb, *Fundamentals of Electricity and Magnetism*, 2nd ed., Wiley.

Prerequisite: Physics 1.

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

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

Laboratory: 1.30-4.30, Monday.

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 hydrodynamics.

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. *Physical Optics*.—A study of geometrical and physical optics supplemented by laboratory work, covering spectroscopy, aberration theory, optical instruments, optical glass, photography, interference, diffraction, polarization, reflection theory, magneto-optics, electro-optics, and experiments on ether drift.

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

References: Hardy and Perrin, *The Principles of Optics*, McGraw-Hill; Wood, *Physical Optics*, Macmillan.

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.

Text-book: Brown, *Fundamentals of Modern Physics*, Wiley.

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

Prerequisite: Physics A or 1.

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.

References: Hardy and Perrin, *The Principles of Optics*, McGraw-Hill; Gibb, *Optical Methods of Chemical Analysis*, 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 various branches of physics which have most directly contributed to the present status of our knowledge of atomic structure. The topics treated include cathode and positive rays, radioactivity, the photoelectric effect, atomic and molecular spectra, X-rays, cosmic rays, and nuclear physics.

Text-book: Richtmyer and Kennard, *Introduction to Modern Physics*, McGraw-Hill.

Prerequisites: Physics 4 and 5, and Mathematics 10.

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 excitation, observation, and theory of optical spectra. This includes such subjects concerning the origin of atomic and molecular spectra as spectral series, atomic and molecular energy states, Zeeman, Paschen-Back, and Stark Effects, etc. Also one or more lectures may be given on spectrographic methods in chemical and metallurgical analysis.

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. *Electromagnetic Theory*.—A study of the classical work of Maxwell, Hertz, Lorentz, and others; the application of the theory of relativity to electrodynamics; and recent advances.

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.

1 unit.

27. *The Theory of Relativity*.—An introductory course to the theory of relativity.

One lecture a week. 1 unit.

28. *Quantum Mechanics*. — An introduction to the theory of quantum mechanics, and the application of wave mechanics to atomic problems.

One lecture a week. 1 unit.

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

One lecture a week. 1 unit.

40. *Methods in High School Physics*. — This course is offered primarily for students in the Teacher Training Course and does not carry undergraduate credit. Readings to be assigned.

Department of Zoology

Professor and Head of the Department: W. A. Clemens.

Associate Professor: G. J. Spencer.

Assistant Professor: I. McT. Cowan.

NOTE. Biology 1 is prerequisite to all courses in Zoology, except for students proposing to take pre-medical courses.

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, Macmillan; or Storer, *General Zoology*, McGraw-Hill.

References: Buchsbaum, *Animals Without Backbones*, University of Chicago; Romer, *Man and the Vertebrates*, University of Chicago.

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.

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*, Mac-

millan; Imms, *A General Text-book of Entomology*, 4th edition, Dutton; Essig, *College Entomology*, Macmillan.

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 strains; 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: Huettnner, *Comparative Embryology of the Vertebrates*, Macmillan.

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; Metcalf and Flint, *Destructive and Useful Insects*, 2nd edition, McGraw-Hill.

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

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: Loey, *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, *Historical 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 or taking Honours in Zoology may take the courses Biology 2 and 3 and Geology 6 in fulfilment of credit requirements upon the approval of the Head of the Department of Zoology. As a prerequisite for Geology 6, a reading course in historical geology may be substituted for Geology 1 and may be taken concurrently with Geology 6.

Students are referred to pages 87 and 89 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; Sverdrup, *The Oceans*, Prentice-Hall.

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. *Economic Vertebrate Zoology*.—Lectures, seminar, and laboratory study of the economically important birds and mammals of British Columbia, particularly with respect to their parasites, diseases, food habits, and biology, and the principles involved in the intelligent use of these resources.

Text-book: Leopold, *Game Management*, Scribners.

Prerequisite: Zoology 11.

Lectures, seminar, and laboratory, four hours a week, throughout the year. Hours to be arranged. Mr. Cowan. 3 units.

1944-45

THE
FACULTY
OF
APPLIED SCIENCE
(ENGINEERING; NURSING AND HEALTH)

THIRTIETH SESSION
1944-1945

TIME TABLE

FACULTY OF

Key to Buildings: A, Arts; Ag. Agriculture; Ap, Applied

	Monday	Section* or Course	Room	Tuesday	Section* or Course	Room	Wednesday	Section* or Course	Room
8.30	Math. 2	a, b, c	Ap 204	Math. 8	a, b, c	Ap 204	Phys. 4	b	S 212
	Math. 3	d, e, f	Ap 202	Math. 4	d, e, f	Ap 202	C.E. 30	d, e, f	Ap 208
	Eng 4	a, b	S 210	C.E. 81	a, b, c, d	Ap 100	Chem. 2(b)	a, b, c, d	S 800
	F.E. 1(c)	c	Ap 235	C.E. 10(a)	1, 2, 3, 4	Ap 208	F.E. 1(c)	c	Ap 235
	Geol. 4	5, 8	Ap 120	C.E. 18	6, 7, 8	Ag 100	E.E. 1	1, 7, 8	Me 111
	M.E. 8†	6	Me 111	C.E. 16§	2, 3, 5	Ap 235	E.E. 2	3, 6	Me 109
	M.E. 5§	6	Me 111	Bot. 7(a)†	4	Ap 235	Geol. 4	5, 8	Ap 120
	M.E. 6	2, 7, 8	Me 132	F.E. 16§	4	Ap 235	C.E. 10(a)	1	Ap 210
	Chem. 16(a)	1	S 413				C.E. 22	2	Ap 216
	C.E. 23	2	Me 109				Geol. 11	5	Ap 102
	F.E. 16§	4	Ap 205				M.E. 15	3, 6	Me 208
	Geol. 11	5	Ap 102				Met. 7	7	M 204
	M.E. 15	3, 6	Me 208						
	Met. 2(a)	7	M 204						
9.30	C.E. 30	a, b, c	Ap 208	Phys. 4	a, b, c	Ap 100	Phys. 4	b	S 212
	Eng. 8	d, e, f	S 210	Eng. 4	d, e, f	Ap 202	C.E. 30	d, e, f	Ap 208
	Geol. 1	a, b, c, d	Ap 100	C.E. 8	c, d	Ap 216	Geol. 1	a, b, c, d	Ap 100
	Chem. 8	1	S 800	E.E. 3	2, 4	Me 109	Chem. 3	1	S 800
	M.E. 6	2, 7, 8	Me 132	E.E. 8	3, 6	Me 109	C.E. 8	2, 4	Ap 210
	M.E. 7	3, 6	Me 109	Geol. 2	1, 5, 7, 8	Ap 102	E.E. 5	3	Me 109
	Chem. 16(a)	1	S 413	F.E. 14	4	Ap 235	M.E. 8†	6	Me 111
	C.E. 22	2	Ap 216	Chem. 9	1	S 413	M.E. 5§	6	Me 111
	F.E. 6†	4	Ap 235	C.E. 19	2	Ap 237	Mining 1	5, 7, 8	M 206
	F.E. 10§	4	Ap 235	M.E. 15	3, 6	Me 208	Chem. 16(a)	1	S 413
	E.E. 11	3	Me 208	Met. 2	5, 7, 8	M 204	C.E. 24†	2	Ap 237
	E.E. 14	6	Me 210				C.E. 29§	2	Ap 216
	Met. 2	5, 7, 8	M 204				E.E. 11	3	Me 208
							E.E. 14	6	Me 210
						Geol. 6	5	Ap 120	
						Met. 8(b)	7		
						Mining 4	8	M 204	
						F.E. 6†	4	Ap 235	
						F.E. 10§	4	Ap 235	
10.30	C.E. 30	a, b, c	Ap 208	Math. 4	a, b, c	Ap 204	Phys. 4	b	S 212
	Math. 6	d, e, f	Ap 202	Math. 2	d, e, f	Ap 202	C.E. 4	d, e, f	Ap 208
	Biol. 1	5	Ap 100	Math. 7	a, b, c, d	S 200	Math. 6	a, b, c, d	Ap 202
	M.E. 4	3, 6	Me 109	Chem. 4	1, 5, 7	S 400	Biol. 1	5	Ap 100
	M.E. 6	2, 7, 8	Me 132	C.E. 14	2	Ap 216	M.E. 6	2, 7, 8	Me 111
	Phys. 10	1	S 413	E.E. 5	3	Me 109	M.E. 7	3, 6	Me 109
	Chem. 7	1	S 413	F.E. 2(c)†	4	Ap 235	Chem. 7	1	S 413
	C.E. 22	2	Ap 216	M.E. 3†	6	Me 111	C.E. 25†	2	Ap 237
	E.E. 12	3	Me 208	M.E. 5§	6	Me 111	C.E. 29§	2	Ap 216
	F.E. 8§	4	Ap 235	Mining 1	5, 7, 8	M 206	E.E. 12	3	Me 208
	F.E. 11†	4	Ap 235	Chem. 8	1	S 413	F.E. 8§	4	Ap 235
	Geol. 8	5, 8	Ap 120	C.E. 23	2	Ap 237	F.E. 11†	4	Ap 235
	M.E. 19	6	Me 210	E.E. 9	3	Me 208	Geol. 8	5, 8	Ap 120
				F.E. 8§	4		M.E. 16	6	Me 210
			F.E. 11†	4		Met. 3(b)	7		
			M.E. 16	6	Me 210				
			Mining 4	8	M 204				
11.30	C.E. 3	a, b, c	Ap 100	Bot. 1(b)	c	Ap 101	Eng. 3	a, b, c	Ap 100
	C.E. 6	d, e, f	Ap 202	Eng. 3	d, e, f	Ap 100	C.E. 4	d, e, f	Ap 208
	C.E. 11	2, 4	Ap 237	Phys. 5	a, b, c, d	S 200	C.E. 6	a, b, c, d	Ap 202
	Math. 8	1, 3, 6, 7p	Ap 204	M.E. 7	2, 7, 8	Me 111	C.E. 17	2	Ap 216
	M.D. 1	5, 7, 8	M 206	M.E. 6	3, 6	Me 109	Math. 8	1, 3, 6, 7p	Ap 204
	C.E. 17	2	Ap 216	Geol. 5	5	Ap 106	Met. 1(c)§	6, 7	Me 109
	F.E. 3†	4	Ap 235	Chem. 6	1	S 413	C.E. 29§	2	Ap 216
	F.E. 5§	4	Ap 235	C.E. 22	2	Ap 216	F.E. 7†	4	Ap 235
	E.E. 13	3	Me 208	F.E. 5§	4	Ap 235	Bot. 6(b)§	4	Ap 235
	M.E. 19	6	Me 210	F.E. 7†	4	Ap 235	Geol. 6§	5	Ap 102
	Mining 3	5, 7c, 8	M 204	Geol. 12	5	Ap 102	Mining 5†	5, 8	M 204
				E.E. 8†	3	Me 208	Mining 7§	8	M 204
				M.E. 14§	3	Me 208			
				Mining 2	5, 8	M 204			

* † § See footnote at end of Time Table.

--- 1944 - 1945

APPLIED SCIENCE

Science: M, Mining; Me, Mechanical; S, Science.

Thursday	Section* or Course	Room	Friday	Section* or Course	Room	Saturday	Section* or Course	Room
Math. 2.....	a, b, c	Ap 204	Math. 3.....	a, b, c	Ap 204	Phys. 4.....	c	S 212
Math. 4.....	d, e, f	Ap 202	Math. 2.....	d, e, f	Ap 202	Chem. 2(a).....	d, e, f	S 811, 815
C.E. 81.....	a, b, c, d	Ap 100	C.E. 5.....	a, b	Ap 212	Chem. 5.....	1	S 415
C.E. 10(a).....	1, 2, 3, 4	Ap 208	Phys. 5.....	d	S 205	C.E. 8†.....	2, 4	Ap 287
C.E. 18.....	6, 7, 8	Ag 100	F.E. 1(c).....	c	Ap 235	E.E. 2†.....	3, 6	
	2, 3, 5		E.E. 1.....	1, 7, 8	Me 111	E.E. 8§.....	3, 6	
	6, 7, 8		Math. 8.....	1, 3, 6, 7p	Me 109	Met. 5†.....	5, 7, 8	
Bot. 7(a)†.....	4	Ap 235	C.E. 25†.....	2	Ap 237	Met. 6§.....	5, 7, 8	
F.E. 16§.....	4	Ap 235	F.E. 10§.....	4	Ap 205	Chem. 8(b).....	1, 7	S 118
			M.E. 14§.....	3	Me 208	F.E. 15†.....	4	Ap 205
			M.E. 17.....	6	Me 210	M.E. 12.....	6	Me 210
			Mining 3.....	5, 7c, 8	M 204			
Phys. 4.....	a, b, c	Ap 100	Phys. 4.....	a, b, c	Ap 100	Phys. 4.....	c	S 212
C.E. 9.....	d, e, f	Ap 210	C.E. 5.....	d, e, f	Ap 212	Chem. 2(a).....	d, e, f	S 811, 815
E.E. 3.....	3, 6	Me 109	Phys. 5.....	d	S 205	C.E. 1.....	a, b	Ap 212
Geol. 2.....	1, 5, 7, 8	Ap 102	C.E. 12(a).....	2, 3, 4, 5, 6, 7, 8	Ap 202	C.E. 31.....	c, d	Ap 208
Chem. 9.....	1	S 413	Chem. 16(b).....	1	S 118	Chem. 5.....	1	S 415
C.E. 24†.....	2	Ap 237	C.E. 25.....	2	Ap 216	C.E. 8†.....	2, 4	Ap 287
E.E. 13.....	3	Me 208	F.E. 6†.....	4	Ap 235	F.E. 2(b)§.....	3, 6	Ap 205
F.E. 6†.....	4	Ap 235	F.E. 10§.....	4	Ap 235	E.E. 2†.....	3, 6	
F.E. 10§.....	4	Ap 235	E.E. 9.....	3	Me 208	Met. 5†.....	5, 7, 8	
Geol. 6.....	5	Ap 120	Geol. 7.....	5	Ap 106	Met. 6§.....	5, 7, 8	
M.E. 18§.....	6	Me 210	M.E. 12.....	6	Me 210	Chem. 8(b).....	1, 7	S 118
Met. 3(a).....	7	M 204	Met. 4.....	7		F.E. 15†.....	4	Ap 205
						M.E. 12.....	6	Me 210
Math. 4.....	a, b, c	Ap 204	Eng. 3.....	a, b, c	Ap 100	Phys. 4.....	c	S 212
Math. 8.....	d, e, f	Ap 202	C.E. 30.....	d, e, f	Ap 208	Chem. 2(a).....	d, e, f	S, 811, 815
Math. 7.....	a, b, c, d	S 200	C.E. 5.....	a, b	Ap 212	C.E. 1.....	a, b	Ap 212
Chem. 4.....	1, 5, 7	S 400	Phys. 5.....	d	S 205	C.E. 81.....	c, d	Ap 208
M.E. 31.....	3	Ap 210	E.E. 2.....	3, 6	Me 109	Chem. 6.....	1	S 415
M.E. 8†.....	6	Ap 210	Met. 1(a)†.....	5, 6, 7, 8,	Me 111	C.E. 8†.....	2, 4	Ap 237
M.E. 5§.....	6	Ap 210	Met. 1(b)§.....	5, 7, 8	M 204	C.E. 2†.....	4	Ap 205
M.D. 1.....	5, 7, 8	M 206	Chem. 16(b).....	1	S 118	F.E. 2(b)§.....	4	
Chem. 8.....	1	S 413	C.E. 25†.....	2	Ap 216	E.E. 2†.....	3, 6	
Bot. 6(b)§.....	4	Ap 205	E.E. 7.....	3	Me 208	E.E. 8§.....	3, 6	
C.E. 28.....	2, 2, 4	Ap 237	F.E. 11†.....	4	Ap 235	Met. 5†.....	5, 7, 8	
E.E. 8†.....	3	Me 208	F.E. 8§.....	4		Met. 6§.....	5, 7, 8	
M.E. 11.....	6	Me 210	Geol. 8.....	5, 8	Ap 120	Chem. 8.....	1, 7	S 418
			M.E. 18§.....	5, 8	Me 210	C.E. 27.....	2	
			Met. 4.....	7		F.E. 15†.....	4	
						M.E. 12.....	6	Me 210
Bot. 1(b).....	c	Ap 101	Chem. 2(a).....	a, b, c	S 300	C.E. 31.....	a, b	Ap 208
Chem. 2(a).....	d, e, f	S 300	C.E. 30.....	d, e, f	Ap 208	C.E. 1.....	c, d	Ap 212
Phys. 5.....	a, b, c, d	S 200	Math. 6.....	a, b, c, d	Ap 202	F.E. 2(b)§.....	4	Ap 205
M.E. 31.....	3	Ap 235	C.E. 14.....	2, 4	Me 111	Chem. 6.....	1	S 418
F.E. 2(c)†.....	4	Ap 235	M.E. 4.....	3, 6	Me 109	C.E. 27.....	2	
M.E. 3†.....	6	Ap 210	Geol. 4.....	5, 8	Ap 120			
M.E. 5§.....	6	Ap 210	Met. 1(c)§.....	7	M 116			
Met. 1(a)†.....	5, 6, 7, 8	Me 109	Chem. 16(b).....	1	S 118			
Met. 1(b)§.....	5, 7, 8	M 206	C.E. 25†.....	2	Ap 216			
Chem. 6.....	1	S 413	M.E. 11.....	6	Me 210			
C.E. 17.....	2	Ap 216	E.E. 12.....	3	Me 208			
F.E. 3†.....	4	Ap 235	F.E. 5§.....	4	Ap 235			
F.E. 8†.....	4	Ap 205	Met. 4.....	7				
Bot. 6(b)§.....	5	Ap 102						
Geol. 12.....	6	Ap 102						
Mining 2.....	8	M 206						

8.30

9.30

10.30

11.30

TIME TABLE

	Monday	Section* or Course	Room	Tuesday	Section* or Course	Room	Wednesday	Section* or Course	Room
1.30	M.E. 1	d, e, f	Ap 208	C.E. 4	a, b, c	Ap 208	Chem. 2(a)	a, b, c	S 811, 315
	Chem. 2(b)	a, b	S 311	Phys. 5	a	S 205	Phys. 4	d	S 212
	C.E. 5	c, d	Ap 212	Geol. 1	c, d	Ap 120	Phys. 5	b	S 205
	Chem. 5	1	S 413	Chem. 4	1	S 411	C.E. 1	c, d	Ap 212
	C.E. 12	2, 3, 4, 5	Ap 202	C.E. 10 a-b	2, 3, 4		C.E. 14	2, 4	Ap 214
	C.E. 17	6, 7, 8		Biol. 1	5		Geol. 10§	5	
	Chem. 7	2	Ap 216	Chem. 9	1	S 816	E.E. 1	1, 7, 8	
	F.E. 2(c) †	4	S 411	C.E. 29§	2	Ap 216	C.E. 25†	2	Ap 216
	F.E. 18§	4	Ap 205	F.E. 6†	4	Ap 205	C.E. 17§	2	Ap 216
	Geol. 11	5	Ap 205	F.E. 8§	4	Ap 205	Geol. 7	5	Ap 106
	M.E. 16	6	Ap 102	Geol. 7	5	Ap 106	Met. 8	7	
	M.D. 3	7, 8	Me 210	M.E. 10	6	Me 132	Met. 1(c) §	6b	M 116
	Met. 1(c) §	6a	M 116	M.D. 3	7, 8		Zool. 10†	4	Ap 105
E.E. 12	3	El 120	E.E. 11	3		F.E. 15§	4	Ap 205	
						Geol. 3†	8	Ap 120	
2.30	Phys. 4	a	S 212	C.E. 4	a, b, c	Ap 208	Chem. 2(a)...	a, b, c	S 811, 315
	M.E. 1	d, e, f	Ap 208	Phys. 5	a	S 205	Phys. 4	d	S 212
	Chem. 2(b)	a, b	S 311	Geol. 1	c, d	Ap 120	Phys. 5	b	S 205
	C.E. 5	c, d	Ap 212	Chem. 4	1	S 411	C.E. 1	c, d	Ap 212
	Chem. 5	1	S 415	Biol. 1	5		Geol. 10§	5	Ap 120
	C.E. 12	2, 3, 4, 5	Ap 202	C.E. 10 a-b	2, 3, 4		E.E. 1	1, 7, 8	
	C.E. 17	6, 7, 8		Chem. 9	1	S 816	C.E. 25†	2	Ap 216
	C.E. 17	2	Ap 216	E.E. 11	3		Geol. 7	5	Ap 106
	Chem. 7	1	S 411	F.E. 6†	4	Ap 205	Met. 1(c) §	6b	M 116
	E.E. 12	3	El 120	F.E. 8§	4	Ap 205	Met. 8	7	
	F.E. 2(c) †	4	Ap 205	Geol. 7	5	Ap 106	Zool. 10†	4	Ap 105
	F.E. 18§	4	Ap 205	M.E. 10	6	Ap 106	C.E. 17§	2	Ap 216
	M.E. 16	6	Me 210	M.D. 3	7, 8	Me 132	F.E. 15§	4	Ap 205
M.D. 3	7, 8					Geol. 3†	8	Ap 120	
Met. 1(c) §	6a	M 116							
3.30	Phys. 4	a	S 212	C.E. 30	a, b, c	Ap 208	Chem. 2(a)...	a, b, c	S 811, 315
	M.E. 1	d, e, f	Ap 208	Phys. 5	a	S 205	Phys. 4	d	S 212
	Chem. 2(b)	a, b	S 311	Chem. 4	1	S 411	Phys. 5	b	S 205
	C.E. 5	c, d	Ap 212	C.E. 10 a-b	2, 3, 4		C.E. 1	c, d	Ap 212
	Chem. 5	1	S 415	Chem. 9	1	S 816	C.E. 25†	2	Ap 216
	C.E. 12	2, 3, 4, 5	Ap 202	E.E. 11	3		F.E. 15§	4	Ap 205
	C.E. 12	6, 7, 8		E.E. 11	3		Met. 1(c) §	6b	
	Bot. 7(a) †	4	Ap 205	F.E. 6†	4	Ap 205	Met. 8	7	
	Chem. 7	1	S 411	F.E. 8§	4	Ap 205	Zool. 10†	4	Ap 105
	C.E. 17	2	Ap 216	Geol. 7	5	Ap 106	C.E. 17§	2	Ap 216
	E.E. 12	3	El 120	M.E. 10	6	Me 132			
	F.E. 18§	4	Ap 205						
	M.E. 16	6	Me 210						
M.D. 3	7, 8								
Met. 1(c) §	6a	M 116							
4.30	Phys. 4	a	S 212	C.E. 30	a, b, c	Ap 208			
	Chem. 5	1	S 415	C.E. 10b†	2, 3, 4,	Ap 202			
	C.E. 12	2, 3, 4, 5,	Ap 202		6, 7, 8				
	E.E. 12	6, 7, 8		Chem. 9	1	S 816			
	Bot. 7(a) †	4	El 120	F.E. 8§	4	Ap 205			
	M.E. 16	6	Ap 205	M.E. 10	6	Me 132			
M.D. 3	7, 8	Me 210							
C.E. 17§	2	Ap 216							

* Sections—Second Year—a, b, c, d, e, f.
Third Year—a, b, c, d.

† First term only.

§ Second term only.

Note.—Second Year Forest Engineering students register in Section c.

Third Year Forest Engineering students register in Section c.

Thursday	Section* or Course	Room	Friday	Section* or Course	Room				
Phys. 4.....	<i>e</i>	S 212	M.E. 1.....	a, b, c	Ap 208				
Geol. 1.....	<i>a, b</i>	Ap 120	Phys. 4.....	<i>f</i>	S 212				
Phys. 5.....	<i>c</i>	S 205	C.E. 31.....	<i>a, b</i>	Ap 212				
Chem. 3.....	<i>1</i>	S 318	Chem. 2(b).....	<i>c, d</i>	S 311				
C.E. 9.....	<i>2, 4, 8</i>	Ap 210	C.E. 11.....	<i>2, 4</i>	Ap 237				
M.E. 7.....	<i>3a, 6a</i>	Me 132	E.E. 2†.....	<i>3, 6</i>					
M.E. 31.....	<i>6b</i>		E.E. 3§.....	<i>3, 6</i>					
Met. 5†.....	<i>5, 7, 8</i>		Geol. 2(a)†.....	<i>1, 5, 7, 8</i>	Ap 110				
M.D. 2§.....	<i>5, 7, 8</i>		Geol. 2(b)§.....	<i>1, 5, 7, 8</i>	Ap 110				
C.E. 24.....	<i>2</i>	Ap 216	Chem. 16(b).....	<i>1</i>	S 118				
Chem. 16(b).....	<i>1</i>	S 118	E.E. 7.....	<i>3</i>	Me 208				
E.E. 14.....	<i>6</i>		F.E. 10§.....	<i>4</i>	Ap 205				
F.E. 2(a)†.....	<i>4</i>	Ap 205	F.E. 11†.....	<i>4</i>	Ap 205				
F.E. 5§.....	<i>4</i>	Ap 205	Geol. 8.....	<i>3</i>	Ap 120				
Geol. 9.....	<i>5, 7c</i>	Ap 110	Met. 4.....	<i>7</i>					
E.E. 10.....	<i>3</i>	Me 208	M.E. 32.....	<i>6a</i>					
Met. 9.....	<i>7p</i>	M 116							
Phys. 4.....	<i>e</i>	S 212	M.E. 1.....	a, b, c	Ap 208				
Geol. 1.....	<i>a, b</i>	Ap 120	Phys. 4.....	<i>f</i>	S 212				
Phys. 5.....	<i>c</i>	S 205	C.E. 31.....	<i>a, b</i>	Ap 212				
Chem. 3.....	<i>1</i>	S 318	Chem. 2(b).....	<i>c, d</i>	S 311				
C.E. 9.....	<i>2, 4, 8</i>	Ap 210	C.E. 13†.....	<i>2, 4</i>	Ap 210				
M.E. 7.....	<i>3a, 6a</i>	Me 132	C.E. 15§.....	<i>2, 4</i>	Ap 210				
M.E. 31.....	<i>6b</i>		E.E. 2†.....	<i>3, 6</i>					
Met. 5†.....	<i>5, 7, 8</i>		E.E. 3§.....	<i>3, 6</i>					
M.D. 2§.....	<i>5, 7, 8</i>		Geol. 2(a)†.....	<i>1, 5, 7, 8</i>	Ap 110				
C.E. 24.....	<i>2</i>	Ap 216	Geol. 2(b)§.....	<i>1, 5, 7, 8</i>	Ap 110				
Chem. 16(b).....	<i>1</i>	S 118	Chem. 16b.....	<i>1</i>	S 118				
E.E. 10.....	<i>3</i>	Me 208	E.E. 7.....	<i>3</i>	Me 208				
E.E. 14.....	<i>6</i>		F.E. 10§.....	<i>4</i>	Ap 205				
F.E. 2(a)†.....	<i>4</i>	Ap 205	F.E. 11†.....	<i>4</i>	Ap 205				
F.E. 5§.....	<i>4</i>	Ap 205	Geol. 8.....	<i>5, 8</i>	Ap 120				
Geol. 9.....	<i>5, 7c</i>	Ap 110	M.E. 32.....	<i>6a</i>					
Met. 9.....	<i>7p</i>	M 116	Met. 4.....	<i>7</i>					
Bot. 1(b).....	<i>c</i>	Ap 101	M.E. 1.....	a, b, c	Ap 208				
Phys. 4.....	<i>e</i>	S 212	Phys. 4.....	<i>f</i>	S 212				
Phys. 5.....	<i>c</i>	S 205	C.E. 31.....	<i>a, b</i>	Ap 212				
Chem. 3.....	<i>1</i>	S 318	Chem. 2(b).....	<i>c, d</i>	S 311				
C.E. 9.....	<i>2, 4, 8</i>	Ap 210	C.E. 13†.....	<i>2, 4</i>	Ap 210				
M.E. 7.....	<i>3b, 6b</i>	Me 132	C.E. 15§.....	<i>2, 4</i>	Ap 210				
M.E. 31.....	<i>6a</i>		E.E. 2†.....	<i>3, 6</i>					
Met. 5†.....	<i>5, 7, 8</i>		E.E. 3§.....	<i>3, 6</i>					
M.D. 2§.....	<i>5, 7, 8</i>		Met. 1(c)§.....	<i>7</i>					
Chem. 16(b).....	<i>1</i>	S 118	Chem. 16(b).....	<i>1</i>	S 118				
C.E. 24.....	<i>2</i>	Ap 216	E.E. 7.....	<i>3</i>	Me 208				
E.E. 14.....	<i>6</i>		F.E. 10§.....	<i>4</i>	Ap 205				
F.E. 2(a)†.....	<i>4</i>	Ap 205	F.E. 11†.....	<i>4</i>	Ap 205				
F.E. 5§.....	<i>4</i>	Ap 205	Met. 4.....	<i>7</i>					
Geol. 9.....	<i>5, 7c</i>	Ap 110	M.E. 32.....	<i>6b</i>					
Geol. 6.....	<i>5</i>	Ap 120							
Met. 9.....	<i>7p</i>	M 116							
Bot. 1(b).....	<i>c</i>	Ap 101	C.E. 13†.....	<i>2, 4</i>	Ap 210				
C.E. 9.....	<i>2, 4, 8</i>	Ap 210	C.E. 15§.....	<i>2, 4</i>	Ap 210				
M.E. 7.....	<i>3b, 6b</i>	Me 132	C.E. 15§.....	<i>2, 4</i>	Ap 210				
M.E. 31.....	<i>6a</i>		Met. 1(c)§.....	<i>7</i>					
Met. 5†.....	<i>5, 7, 8</i>		Chem. 16(b).....	<i>1</i>	S 118				
M.D. 2§.....	<i>5, 7, 8</i>		E.E. 7.....	<i>3</i>	Me 208				
Chem. 16(b).....	<i>1</i>	S 118	F.E. 10§.....	<i>4</i>	Ap 205				
Geol. 6.....	<i>5</i>	Ap 120	F.E. 11†.....	<i>4</i>	Ap 205				
C.E. 24§.....	<i>2</i>	Ap 216	M.E. 32.....	<i>6b</i>					

1.30

2.30

3.30

4.30

* Courses—1 Chemical Engineering.
 2 Civil Engineering.
 3 Electrical Engineering.
 4 Forest Engineering.
 5 Geological Engineering.
 6 Mechanical Engineering.
 7 Metallurgical Engineering.
 8 Mining Engineering.

Fifth year course numbers shown in italics.

1944-45

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 32-34.

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 Faculty reserves the right of selection and admission of the students entering the Second Year of the Combined Course and the Third Year of the Double Course in Nursing. 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 pages 242 and 248.

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 232.)

Master of Applied Science (M.A.Sc.). (See page 249.)

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:

1. Chemical Engineering.
2. Civil Engineering.
3. Electrical Engineering.
4. Forest Engineering.
5. Geological Engineering.
6. Mechanical Engineering.
7. Metallurgical Engineering.
8. Mining Engineering.
9. 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 223. 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 225) 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 251.

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 pages 243-244; 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 pages 317-318. 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 the course in Physical Sciences in University Entrance is 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 Beginners' German*.

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 either Biology or 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 and Solid Geometry.....	270	2	.....	2	.....
Math. 3 Algebra.....	270	2	.....	2	.....
Math. 4 Calculus.....	270	2	.....	2	.....
M.E. 1 Drawing 1.....	271	.....	3	.....	3
Physics 4(a) Mechanics.....	286	3	3	.....	.....
Physics 4(b) Heat.....	286	.....	.....	3	3
*Chem. 2(a) Qual. Analysis.....	253	1	3	1	3
C.E. 2 Surveying.....	256	Field Work		.....	.....
C.E. 3 General Engineering.....	256	1	.....	1	.....
C.E. 4 Graphical Statics.....	256	.....	2	.....	2
C.E. 30 Engineering Problems.....	262	.....	4	.....	4
English 3 Composition.....	263	2	.....	2	.....
†Bot. 1(b) General Forest Botany.....	253	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 week.	Lectures per week.	Laboratory hours per week.
Essay.....	225	.....	.....	.....	.....
Math. 6 Calculus.....	270	3	.....	3	.....
Math. 7 Geometry.....	271	2	.....	2	.....
*Chem. 2(b) Quan. Analysis.....	254	1	3	1	3
Physics 5 Electricity.....	286	2	3	2	3
C.E. 1 Descriptive Geometry.....	256	.....	3	.....	3
C.E. 5 Mapping.....	256	.....	3	.....	3
C.E. 6 Surveying.....	257	2	.....	2	.....
†C.E. 7 Surveying.....	257	Field Work		.....	.....
C.E. 31 Mechanics and Engineering Problems.....	262	2	3	2	3
Geology 1 General.....	268	2	2	2	2
‡M.E. 2 Mechanical Drawing.....	271	Summer Term			
‡M.E. 30 Machine Shop Practice.....	275				
English 4 Technical Writing.....	263	1	.....	1	.....
§F.E. 1(c) General Forestry.....	264	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, and Mining Engineering are required to take Civil Engineering 7 (see page 257) immediately after the spring examinations.

‡Students entering Chemical, Electrical, Mechanical, and Metallurgical Engineering are required to take M.E. 2 and M.E. 30 (see pages 271 and 275) 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, however, may 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 Second 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. In the Final Year, students in Nursing and Health will be required to submit a graduating essay, or to present a seminar, covering an original study based upon experiences gained during the academic and professional years, and developed from topics assigned by the Department early in the year. All essays must be handed in, or seminars presented, during the Second Term.

All essays, when handed in, become the property of the department concerned, and are filed for reference. A duplicate copy may be submitted 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

1. 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 not only be conversant with the chemical processes involved, but 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.....	225	.....	.....	.....	.....
Math. 8 Applied Calculus and Differential Equations.....	271	3	.....	3	.....
Geol. 2(a) Mineralogy.....	268	2	2	.....	.....
Chem. 3 Organic.....	254	2	3	2	3
Chem. 4(a) Theoretical.....	254	2	3	2	3
Chem. 5 Adv. Analysis.....	254	1	6	1	6
Chemistry 6 Introduction to Chemi- cal Engineering.....	254	2	.....	2	.....
Physics 10 Light.....	287	1	.....	1	.....
C.E. 10(a) Strength of Materials.....	258	2	1	2	1
Summer Reading.....	255	.....	.....	.....	.....

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.....	225	.....	.....	.....	.....
E.E. 1 General.....	276	2	2	2	2
Chem. 7 Physical.....	254	2	3	2	3
Chem. 8 Electro.....	254	2	3	2	3
Chem. 9 Adv. Organic.....	255	2	3	2	3
Chem. 16(a) Chemical Engineering.....	255	3	.....	3	.....
Chem. 16(b) Chemical Engineering Laboratory and Chemical En- gineering Problems.....	255	.....	6	.....	6
Thesis, Options—research or designing of chemical engineering equipment....	.....	6	hours	per	week

*Optional.

2. 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.....	225	.....	.....	.....	.....
C.E. 8 Foundations.....	257	2	3	2	.....
C.E. 9 Elementary Design.....	257	2	3	2	3
C.E. 10(a) Strength of Materials.....	258	2	3*	2	3*
C.E. 10(b) Materials Testing.....	258	1	3*	.....	3*
C.E. 11 Railways.....	258	2	.....	2	.....
C.E. 12(a) Hydraulics.....	258	1	2	1	2
C.E. 12(b) Hydraulics Laboratory.....	259	.....	2	.....	2
C.E. 13 Mapping.....	259	.....	3	.....	.....
C.E. 14 Surveying.....	259	2	.....	2	.....
C.E. 15 Drawing.....	259	.....	.....	.....	3
C.E. 16 Surveying.....	259	.....	Field	Work	.....
C.E. 28 Seminar.....	262	1	.....	1	.....
+M.E. 6 Applied Thermodynamics.....	272	2	3	2	3
†E.E. 1 Electrical Engineering.....	276	2	2	2	2
§F.E. 16 Forest Economics.....	267	3	.....	3	.....

*Alternate weeks.

†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.....	225	.....	.....	.....	.....
C.E. 17 Structural Design.....	259	2	3	2	6
C.E. 18 Engineering Economics.....	259	1	1	1	1
C.E. 19 Law—Contracts.....	260	1	.....	1	.....
C.E. 22 Municipal Engineering.....	260	2	2	2	2
C.E. 23 Highway Engineering.....	261	2	.....	2	.....
C.E. 24 Reinforced Concrete Design.....	261	2	3	.....	4
C.E. 25 Theory of Structures.....	261	2	6	.....	.....
C.E. 26 Trips.....	261	Required Saturday A.M.		.....	.....
C.E. 27 Thesis.....	262	.....	3	.....	6
C.E. 28 Seminar.....	262	1	.....	1	.....
C.E. 29 Water Power Development.....	262	.....	.....	2	2

For course for graduate students, see page 263.

3. 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.....	225	.....	.....	.....	.....
E.E. 2 Principles of D.C. Machines.....	276	2	3	2	3
E.E. 3 Principles of Alternating Currents.....	276	2		2	
E.E. 5 Electric and Magnetic Measurements and Instruments.....	276	2	.....	2	.....
Math. 8 Applied Calculus and Differential Equations.....	271	3	.....	3	.....
M.E. 4 Dynamics of Machines.....	272	2	.....	2	.....
M.E. 7 Applied Thermodynamics.....	273	3	3	3	3
C.E. 10(a) Strength of Materials.....	258	2	3*	2	3*
C.E. 10(b) Materials Testing.....	258	1	3*	.....	3*
C.E. 12(a) Hydraulics.....	258	1	2	1	2
C.E. 12(b) Hydraulics Laboratory.....	259	.....	2	.....	2
†M.E. 31 Machine Shop Practice.....	275	.....	2	.....	2

*Alternate weeks.

†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.....	225	.....	.....	.....	.....
E.E. 7 Electrical Machine Design.....	277	1	3	1	3
E.E. 8 Principles of Illuminating Engineering.....	277	2	.....	.....	.....
E.E. 9 Electric Power Transmission and Distribution.....	277	2	.....	2	.....
E.E. 10 Electrical Problems Course.....	277	.....	2	.....	2
E.E. 11 Electrical Communication.....	277	2	4	2	4
E.E. 12 Principles of A.C. Machines.....	278	3	4	3	4
E.E. 13 Transient Phenomena.....	278	1	1	1	1
M.E. 14 Mechanical Design.....	273	.....	.....	2	.....
M.E. 15 Prime Movers.....	274	3	.....	3	.....
C.E. 18 Engineering Economics.....	259	1	1	1	1

For course for graduate students, see page 278.

4. 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 318-319), 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.

The affiliation of the Forest Products Laboratory of Canada, maintained at the University by a cooperative arrangement with the Dominion Forestry Branch, 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 Reserve

On March 1, 1943, the Provincial Government leased to the University, for twenty-one years subject to further renewal, an area of forest land of approximately 9,600 acres between Pitt Lake and the town of Haney for "forest research and demonstration purposes."

The area comprises a solid block of land about 7 miles long and $2\frac{1}{2}$ miles wide. From the standpoint of size, accessibility, variation in forest sites, and variety of timber types and age classes it is undoubtedly one of the finest school forests on the continent. Thus ample scope is provided for field work in cruising, mensuration, silviculture, logging engineering, and forest management, and for research in forestry and related sciences.

The University Forest

The Forest, which consists of a narrow belt on the southern and western sides of the University site, and which is typical of the lowland stands on the southern coast, contains the principal species of trees and shrubs of the region, including specimens of the old trees as well as young growth of different ages, and serves as a convenient demonstration and field study area for the departments of Forestry, Biology and Botany, and Zoology.

A small forest nursery has been established for experimental and demonstration work in silviculture and also to provide planting stock for the forest, which is operated on a sustained yield basis.

SECOND YEAR

The same as Second Year Applied Science (see page 224), except that F.E. 1 (b), General Forest Botany (see page 264) is taken instead of Chemistry 2 (a).

THIRD YEAR

The same as Third Year Applied Science (see page 225), except that F.E. 1 (c), General Forestry (see page 264), is taken instead of Chemistry 2 (b).

FOURTH YEAR

The same as Fourth Year Civil Engineering (see page 229), except that F.E. 2 (c), Forest Mensuration, in the First Term and F.E. 2 (b), Cruising and Stumpage Appraisal, in the Second Term (see page 265) are 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.....	225	.....	.....	.....	.....
F.E. 2(a) Log Scaling.....	264	1	2	.....	.....
F.E. 3 Forest Protection.....	265	2	.....	.....	.....
F.E. 6 Forest Management.....	265	4	3	.....	.....
F.E. 7 History.....	265	2	.....	.....	.....
†F.E. 11 Milling, Products, and Marketing.....	266	4	4	.....	.....
§Bot. 7(a) Ecology.....	253	2	2	.....	.....
Zool. 10 Forest Entomology.....	287	1	2	.....	.....
F.E. 14 Seminar.....	267	1	.....	1	.....
F.E. 15 Thesis.....	267	.....	3	.....	3
F.E. 16 Forest Economics.....	267	.....	.....	4	.....
F.E. 5 Wood Technology.....	265	.....	.....	3	3
*†F.E. 8 Silviculture.....	266	.....	.....	4	4
*†F.E. 10 Logging Engineering.....	266	.....	.....	4	4
F.E. 13 Lumber Grading.....	266	.....	.....	1	2
Bot. 6(b) Forest Pathology.....	253	.....	.....	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 and Botany (Forestry option) for the B.A. degree will take Botany 7(b) instead of Botany 7(a). (See page 253.)

5. 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, palaeontologist, 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.

NOTE. For special advantages enjoyed by engineering graduates when registering in the Association of Professional Engineers of the Province of British Columbia see page 220.

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.....	225	.....	.....	.....	.....
Geol. 2 Mineralogy.....	268	2	2	2	2
Geol. 4 Structural.....	269	3	.....	3	.....
Geol. 5 History of the Earth Sciences and Geological Theories.....	269	1	.....	1	.....
*Geol. 10 Field Geology.....	269	.....	.....	.....	2
Min. 1 Metal Mining.....	279	2	.....	2	.....
Met. 1 (a) Physical Metallurgy.....	280	2	.....	.....	.....
Met. 1 (b) Reduction Metallurgy.....	280	.....	.....	2	.....
Met. 5 Fire Assaying.....	281	.....	7	.....	.....
Met. 6 Wet Assaying.....	281	.....	.....	.....	3
Ore Dressing 1 General.....	282	2	.....	2	.....
Ore Dressing 2 Lab.....	282	.....	.....	.....	4
Biology 1.....	252	2	2	2	2
C.E. 12(a) Hydraulics.....	258	1	2	1	2
C.E. 12(b) Hydraulics Laboratory.....	259	.....	2	.....	2
C.E. 13 Mapping.....	259	.....	.....	.....	3

*Includes 10 days' field work after lectures close in the Second Term.

FIFTH YEAR

Subject	For details see page:	First Term		Second Term	
		Lectures per week.	Laboratory hours per week.	Lectures per week.	Laboratory hours per week.
Geol. 6 Palaeontology.....	269	2	2	2	2
Geol. 7 Petrography.....	269	2	4	2	4
Geol. 8 Economic Geology.....	269	4	.....	4	.....
Geol. 9 Mineralography.....	269	.....	2 or 4	.....	2 or 4
Geol. 11 Regional Geology.....	269	3	.....	3	.....
Geol. 12 Geomorphology.....	269	2	.....	2	.....
Chem. 4(b) Theoretical Chemistry.....	254	2	.....	2	.....
C.E. 18 Engineering Economics.....	259	1	1	1	1
Min. 3 Metal Mining.....	279	2	.....	2	.....
Min. 5 Surveying.....	279	1	.....	.....	.....
Met. 2 Reduction Metallurgy.....	280	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.

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

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

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

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

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

Electives: Under each of the above options, electives to the value of six units are required. These will be selected in consultation with the Department of Geology. The following subjects are recommended for consideration: selected courses from Chemistry, Physics, Metallurgy, Mineral Dressing, Biology, Botany, Zoology, Bacteriology, Agronomy 15, English, Modern Languages, Mathematics, and Economics.

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

6. 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.
Essay.....	225	.....	.....	.....	.....
C.E. 10(a) Strength of Materials.....	258	2	3*	2	3*
C.E. 10(b) Materials Testing.....	258	1	3*	.....	3*
C.E. 12(a) Hydraulics.....	258	1	2	1	2
C.E. 12(b) Hydraulics Laboratory.....	259	.....	2	.....	2
M.E. 3 Kinematics of Machines.....	272	3	2	.....	.....
M.E. 4 Dynamics of Machines.....	272	2	.....	2	.....
M.E. 5 Machine Design.....	272	.....	.....	3	2
M.E. 7 Applied Thermodynamics.....	273	3	3	3	3
E.E. 2 and 3 Principles of D.C. Machines and Alternating Currents.....	276	4	3	4	3
Math. 8 Applied Calculus and Differential Equations.....	271	3	.....	3	.....
M.E. 31 Machine Shop Practice.....	275	.....	2	.....	2

*Alternate weeks.

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.....	225	.....	.....	.....	.....
M.E. 10 Mech. Eng. Laboratory.....	273	.....	4	.....	4
M.E. 11 Heating, Ventilating, Air Conditioning, and Refrigeration.....	273	2	.....	2	.....
M.E. 12 Power Plant Design.....	273	1	3	1	3
M.E. 15 Prime Movers.....	274	3	.....	3	.....
M.E. 16 Machine Design.....	274	2	4	2	4
M.E. 17 Applied Mechanics.....	274	1	.....	1	.....
M.E. 18 Aeronautics.....	275	.....	.....	2	.....
M.E. 19 Problems in Mech. and Elect. Eng.....	275	.....	2	.....	2
E.E. 14 Alternating Current Machines.....	278	2	3	2	3
Met. 1(a) Physical Metallurgy.....	280	2	.....	.....	.....
Met. 1(c) Metallography.....	280	.....	.....	1	3
C.E. 18 Engineering Economics.....	259	1	1	1	1
M.E. 32 Machine Shop Practice.....	275	.....	2	.....	2

7. Metallurgical Engineering

The two principal branches of metallurgical engineering are chemical metallurgy, which includes milling, smelting, and refining; and physical metallurgy, which is concerned, chiefly, with the production and fabrication of alloys.

The course in the Fourth Year deals with subjects of a general nature, common to both branches, while in the Fifth Year opportunity is offered for some degree of specialization in either chemical or physical metallurgy. The development of metal manufacturing in British Columbia indicates an increasing need for graduates with specialized training in physical metallurgy.

Graduate courses leading to a Master's Degree in mineral dressing or metallurgy are available. Through the close association of the Department with the work of the British Columbia Council of

Industrial and Scientific Research, an excellent opportunity is offered to students planning to undertake graduate studies of a research character.

The laboratory equipment at present installed, while not on a large scale, is first-class and modern and has been carefully selected to give thorough and adequate training in the laboratory courses covering the methods and processes employed in chemical metallurgy, physical metallurgy, and metallography.

Students are expected to spend their vacations in practical work in connection with metallurgical operations and are required to do so between the Fourth and Fifth Years as an essential part of their course.

Students are advised to become student members of the Canadian Institute of Mining and Metallurgy.

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.....	225	.....	.....	.....	.....
C.E. 10(a) Strength of Materials.....	258	2	3*	2	3*
C.E. 10(b) Materials Testing.....	258	1	3*	.....	3*
C.E. 12(a) Hydraulics.....	258	1	2	1	2
M.E. 6 Applied Thermodynamics.....	272	2	3	2	3
Geol. 2 Mineralogy.....	268	2	2	2	2
E.E. 1 General.....	276	2	2	2	2
Min. 1 Metal Mining.....	279	2	.....	2	.....
Met. 1(a) Physical Metallurgy.....	280	2	.....	.....	.....
Met. 1(b) Reduction Metallurgy.....	280	.....	.....	2	.....
Met. 1(c) Metallography.....	280	.....	.....	1	3
Met. 5 Fire Assaying.....	281	.....	7	.....	.....
Met. 6 Wet Assaying.....	281	.....	.....	.....	3
Mineral Dressing 1.....	282	2	.....	2	.....
Mineral Dressing 2 Lab.....	282	.....	.....	.....	4

*Alternate weeks.

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.....	225	.....	.....	.....	.....
*Geol. 9 Mineralography.....	269	.....	2	.....	2
C.E. 18 Engineering Economics.....	259	1	1	1	1
Chem. 4(b) Theoretical.....	254	2	.....	2	.....
Chem. 8 Electrochemistry Laboratory.....	254	.....	3	.....	3
†Math. 8 Applied Calculus and Differ- ential Equations.....	271	3	.....	3	.....
Mineral Dressing 3 Laboratory.....	283	.....	6	.....	6
*Min. 3 Metal Mining.....	279	2	.....	2	.....
Met. 2 Reduction Metallurgy.....	280	2	.....	2	.....
Met. 3(a) Physical Metallurgy.....	280	2	.....	2	.....
Met. 3(b) Calculations.....	281	.....	2	.....	2
Met. 4 Laboratory.....	281	.....	6	.....	6
Met. 7 Base Metal Production.....	281	1	.....	1	.....
Met. 8 Process Laboratory.....	282	.....	3	.....	3
†Met. 9 Metallurgy.....	282	.....	3	.....	3

*For Students taking Chemical Metallurgy Option.

†For Students taking Physical Metallurgy Option.

8. Mining Engineering

The courses offered 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.

Coal, iron, and steel are covered in general courses and specialization is chiefly in non-ferrous mining, with particular reference to British Columbia conditions.

Students are expected to spend their vacations in practical work in connection with mining and are required to do so between the Fourth and Fifth Years 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.

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.....	225	.....	.....	.....	.....
C.E. 10(a) Strength of Materials.....	258	2	3*	2	3*
C.E. 10(b) Materials Testing.....	258	1	3*	.....	3*
C.E. 12(a) Hydraulics.....	258	1	2	1	2
C.E. 13 Mapping.....	259	.....	.....	.....	3
M.E. 6 Applied Thermodynamics.....	272	2	3	2	3
Geol. 2 Mineralogy.....	268	2	2	2	2
E.E. 1 General.....	276	2	2	2	2
Min. 1 Metal Mining.....	279	2	.....	2	.....
Met. 1(a) Physical Metallurgy.....	280	2	.....	.....	.....
Met. 1(b) Reduction Metallurgy.....	280	.....	.....	2	.....
Met. 5 Fire Assaying.....	281	.....	7	.....	.....
Met. 6 Wet Assaying.....	281	.....	.....	.....	3
Mineral Dressing 1.....	282	2	.....	2	.....
Mineral Dressing 2 Lab.....	282	.....	.....	.....	4

*Alternate weeks.

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.....	225	.....	.....	.....	.....
Geol. 3 Petrology.....	269	2	.....	2	.....
Geol. 4 Structural.....	269	3	.....	3	.....
Geol. 8 Economics.....	269	4	.....	4	.....
C.E. 9 Element. Design.....	257	2	3	2	3
C.E. 18 Engineering Economics.....	259	1	1	1	1
Met. 2 Reduction Metallurgy.....	280	2	.....	2	.....
Mineral Dressing 3 Laboratory.....	283	.....	6	.....	6
Min. 2 Coal and Placer.....	279	2	.....	2	.....
Min. 3 Metal Mining.....	279	2	.....	2	.....
Min. 4 Machinery.....	279	2	.....	2	.....
Min. 5 Surveying.....	279	1	.....	.....	.....
Min. 7 Methods.....	280	.....	.....	1	.....

MASTER OF APPLIED SCIENCE OPTIONS IN MINERAL DRESSING
AND METALLURGY

1. *Mineral Dressing*.—*Required course*: Mineral 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.

9. Nursing and Health

The University offers courses in Nursing to students who desire to receive a broader education than can be secured in 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.

A combined university and hospital course leading to the degree of B.A.Sc. (Nursing) and to the Diploma in Nursing of an associated hospital is offered. A double course leading to the degrees of B.A. and B.A.Sc. (Nursing) is also offered. Students who take the double course will receive the degree of B.A. on the successful completion of their hospital training, and the degree of B.A.Sc. on the successful completion of the specialized courses of their final year. (See *Double Courses*, page 317.)

These courses are given by the University in collaboration 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. For convenience of reference, the courses given at the University during the preclinical year and during the hospital training are designated Nursing A. (See page 242.)

After graduation from hospital, the student will select one or other of the following specialized courses:

Nursing B—Public Health Nursing. (See pages 246 and 248.)

Nursing C—Teaching and Supervision in Schools of Nursing. (See pages 247 and 248.)

Nurses who have graduated from recognized schools of nursing, and who are personally fitted for their proposed work, may apply

to take Nursing B or Nursing C. Satisfactory completion of these courses leads to a Certificate in Public Health Nursing or a Certificate in Teaching and Supervision in Schools of Nursing respectively.

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.

Nursing A—Admission

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.

The Faculty reserves the right of selection and admission of students entering the Second Year of the Combined Course and the Third Year of the Double Course in Nursing. The candidates must, in the opinion of the Department, be personally fitted for the branches of nursing to which the University nursing courses lead. (See page 220.)

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 243-244, 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 approved by the University Senate.

(3) The candidate's professional and academic 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.

(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).....	158	2	.....	2	.....
English 1(b).....	159	2	.....	2	.....
Choice of					
Latin 1.....	138	3	.....	3	.....
or French 1.....	187	3	.....	3	.....
or German (Beginners').....	190	4	.....	4	.....
Mathematics 1.....	183	4	.....	4	.....
Chemistry 1.....	129	3	3	3	3
Biology 1.....	121	2	2	2	2

A passing grade of 60 per cent in either Biology or Chemistry is required; for all other subjects a grade of 50 per cent will be accepted. (See page 224.)

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.....	159	3	.....	3	.....
Zoology 1.....	287	2	2	2	2
Physics A or Physics 1.....	200	3	2	3	2
Psychology 1.....	196	3	.....	3	.....
Nursing 1 History of Nursing.....	283	1	.....	1	.....
Nursing 2 Elementary Biochemistry.....	283	.....	.....	1	1
Nursing 3 Bacteriology in Relation to Health and Disease.....	284	1	4	1	4

Following these academic or preclinical years, the student enters the associated hospital school of nursing for a period of thirty-two months, the first four months of which are a probationary period. This professional course 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 school 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 with the course. The hospital school of nursing reserves 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 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 school of nursing. 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 partly through affiliations with other institutions or organizations. Full maintenance and such allowance as the associated hospital authorities may designate are provided, and a yearly vacation is granted at the convenience of the superintendent of the school of nursing. A registration fee may be required by the associated hospital.

The following is an outline of the course as given in the Vancouver General Hospital, which is the only hospital at present associated with the University in giving the Combined Course.

Instruction in the following Nursing subjects is given by members of the medical staff and by qualified nurse instructors: Ethics of Nursing; Principles and Practices of Nursing; Personal Hygiene; Anatomy and Physiology; Psychology; Normal Nutrition and Diet Therapy; Pharmacology and Therapeutics; Urinalysis; Introduction to Anaesthesia; Introduction to Physiotherapy, X-Ray, and Community Health and Social Needs.

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 instruction and actual nursing experience in the following departments:

Medical	Eye, Ear, Nose, and throat
Surgical	Obstetrical
Gynecological	Communicable Diseases (including Tuberculosis and Venereal Diseases)
Pediatric and Orthopedic	
Psychiatric	
Infants	Diet Kitchen
Operating Room	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 arranged with other institutions or public health organiza-

tions. 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.

The diploma of the hospital school of nursing will be granted at the completion of this period.

FINAL YEAR (ACADEMIC AND PROFESSIONAL)

The Final Year will be spent in either Nursing B or Nursing C, at the option of the student. The Department of Nursing and Health must be notified by each student of her selection of course for the Final Year; this notification must be received by July 15th of the year in which the student proposes to return to the University for the Final Year's work. Upon successful 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 225.)

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 250.)

Nursing B (Public Health)—General Outline

A course for graduate nurses, including academic work in the University, with appropriate field work under the supervision of the following public health and social welfare organizations: the Children's Aid Society of Vancouver; the Family Welfare Bureau of Greater Vancouver; the Metropolitan Health Committee of Greater Vancouver; the Provincial Department of Health, and Health Services at Abbotsford, Chilliwack, Duncan, Nanaimo, Saanich, and other centres; the Provincial Mental Hospital, Essondale; the Provincial Division of Tuberculosis Control; the Provincial Division of Venereal Disease Control; the Vancouver General Hospital, Social Service Department; and the Victorian Order of Nurses.

Subject	For Details see page:	Total hours of lectures
Nursing 4 Preventive Medicine.....	284	45
Nursing 5 Mental Hygiene.....	284	18
Nursing 7 Infant and Child Hygiene.....	284	18
Nursing 9 Sanitation.....	284	9
Nursing 11 Public Health Organization.....	284	18
Nursing 12 Vital Statistics.....	284	18
Nursing 13 Principles of Public Health Nursing.....	285	36
Nursing 14 Practice of Public Health Nursing.....	285	18
Nursing 16 Methods in Health Teaching.....	285	36
Nursing 17 Current Nursing Problems.....	285	18
Nursing 21 Social Case Work.....	285	18
Nursing 27 Sociology.....	285	18
Nursing 31 Principles and Methods of Teaching.....	285	18
Nursing 35 Essay or Seminar.....	285	18
Nursing 36 Field Work.....	286	.....

Nursing C (Teaching and Supervision in Schools of Nursing)—General Outline

A course for graduate nurses, including academic work in the University, with opportunity for practice teaching and for the observation of training school administration and ward supervision provided chiefly by the Vancouver General Hospital.

Subject	For Details see page:	Total hours of lectures
Nursing 4 Preventive Medicine.....	284	45
Nursing 5 Mental Hygiene.....	284	18
Nursing 17 Current Nursing Problems.....	285	18
Nursing 18 Teaching in Schools of Nursing.....	285	36
Nursing 19 Principles of Supervision in Schools of Nursing.....	285	36
Nursing 27 Sociology.....	285	18
Nursing 31 Principles and Methods of Teaching.....	285	18
Electives from Nursing B, from Education, or from related Science courses, to make up three units.....	.....	18
Nursing 35 Essay.....	285	18
Nursing 37 Field Work.....	286	.....

Admission to Nursing B and C Certificate Courses

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.

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 an X-ray of the chest taken within three months of submitting the application must accompany this certificate.

Candidates accepted for admission to Nursing B 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 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 page 39.

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 pages 223-224). 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 *Special Fees*, page 40), 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 Engineering 2 or 7 of the preceding summer may take Civil Engineering 5 or 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, 10 (b), 12 (b), 13; Mechanical Engineering 1, 2, 6, 7 (Lab.), 8, 9, 10 (Lab.), 30; Geology 1 (b) and 1 (d); Metallurgy 1 (c), 5, 6.

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 222.

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. Honours 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

NOTE. The following subjects may be modified during the year as the Senate may deem advisable.

Department of Biology and Botany

Professor and Head of the Department: A. H. Hutchinson.

Professor: Frank Dickson.

Associate Professor: John Davidson.

Associate Professor: John Allardyce.

Instructor: Miss Ruth E. Fields.

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 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, except as otherwise stated.

Two lectures and one period of two hours laboratory a week.

2. *Principles of Genetics*.—As in Arts. (See page 122.)

3. *General Physiology*.—As in Arts. (See page 123.)

Botany

1. (a) *General Botany*.—As in Arts. (See page 124.)
1. (b) *General Forest Botany (General Dendrology)*.—As in Arts. (See page 124.)
 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 124.)
3. *Plant Physiology*.—As in Arts. (See page 125.)
4. *Histology*.—As in Arts. (See page 125.)
5. (a) *Economic Flora*.—As in Arts. (See page 126.)
5. (b) *Dendrology*.—As in Arts. (See page 126.)
5. (c) *Descriptive Taxonomy*.—As in Arts. (See page 126.)
6. (b) *Forest Pathology*.—As in Arts. (See page 127.)
6. (c) *Plant Pathology (Elementary)*.—As in Arts. (See page 127.)
7. (a) *Forest Ecology and Geography*.—As in Arts. (See page 128.)
7. (b) *Advanced Forest Ecology*.—As in Arts. (See page 128.)

Department of Chemistry

Professor and Head of the Department: R. H. Clark.
 Professor: W. F. Seyer.
 Professor: M. J. Marshall.
 Associate Professor: William Ure.
 Associate Professor: J. Allen Harris.
 Assistant Professor: J. Gilbert Hooley.
 Lecturer: Lionel A. Cox.

1. *General Chemistry*.—As in Arts. (See page 129.)
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: Reedy, *Theoretical Qualitative Analysis*, McGraw-Hill.

Laboratory Manual: Reedy, *Qualitative Analysis*, McGraw-Hill.

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 Nostrand; or Pierce and Haenisch, *Quantitative Analysis*, Wiley.

One lecture and three hours laboratory a week.

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

3. *Organic Chemistry*.—As in Arts. (See page 131.)

4. (a) *Theoretical Chemistry*.—As in Arts. (See page 131.)

4. (b) This course is the same as Chemistry 4 (a) with the omission of the laboratory.

5. *Advanced Qualitative and Quantitative Analysis*.—As in Arts. (See page 131.)

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

Text-book: Badger and McCabe, *Elements of Chemical Engineering*, McGraw-Hill. Summer reading: Read, *Industrial Chemistry*, Wiley.

Two lectures a week.

7. *Physical Chemistry*.—As in Arts. (See page 132.)

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.

(b) Electric furnaces and electrolytic refining and deposition of metals will be studied in detail.

Text-books: Creighton & Koehler, *Principles of Electro-chemistry*, Vol. II., Wiley; Thompson, *Theoretical and Applied Electro-chemistry*, Macmillan.

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

9. *Advanced Organic Chemistry*.—As in Arts. (See page 132.)

11. *Physical Organic Chemistry*.—As in Arts. (See page 133.)
(May be given in 1944-45 and alternate years.)

12. *Colloid Chemistry*.—As in Arts. (See page 133.)

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-books: Walker, Lewis, McAdams, and Gilliland, *Principles of Chemical Engineering*, McGraw-Hill; Zemansky, *Heat and Thermodynamics*, Wiley; Jameson, *An Introduction to Fluid Mechanics*, Longmans; Jakob and Hawkins, *Elements of Heat Transfer*, Wiley.

Three lectures and six hours laboratory a week.

17. *Chemical Thermodynamics*.—As in Arts. (See page 133.)
(Given in 1945-46 and alternate years.)

18. *Advanced Inorganic Chemistry*.—As in Arts. (See page 134.)
(Given in 1944-45 and alternate years.)

21. *Chemical Kinetics*.—As in Arts. (See page 134.)
(Given in 1945-46 and alternate years.)

22. *Surface Chemistry*.—As in Arts. (See page 134.)
(Given in 1944-45 and alternate years.)

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

Department of Civil Engineering

Professor and Head of the Department: John Norison Finlayson.

Professor: J. F. Muir.

Professor: A. H. Finlay.

Associate Professor: A. Lighthall.

Assistant Professor: E. S. Pretious.

Assistant Professor: Archie Peebles.

Assistant Professor: A. Hrennikoff.

Part-time Lecturer: J. B. Alexander.

1. *Descriptive Geometry*.—Orthographic projection involving points, lines, and planes; use of auxiliary planes; interpenetrations and developments; practical applications.

Text-book: Smith, *Practical Descriptive Geometry*, 4th edition, McGraw-Hill.

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.

3. *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.

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 colour.

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.

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.

Time, same as for C.E. 2.

Mr. Finlay, Mr. Muir.

8. *Foundations and Masonry*.—(a) Soil exploration; bearing power of soils; pile and other foundations; cofferdams; caissons; open dredging; pneumatic and freezing processes.

Text-book: Jacoby and Davis, *Foundations of Bridges and Buildings*, McGraw-Hill.

C.E. 10 must either precede or be taken concurrently.

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

(b) Theory of earth pressure for cohesionless and cohesive materials; active and passive pressures; design of retaining walls; bulkheads; pressure on hoppers; stability of unretained slopes.

References: Ketchum, *Walls, Bins and Grain Elevators*; Howe, *Retaining Walls for Earth*; Cain, *Earth Pressure, Walls and Bins*.

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.

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.

Two lectures a week and one three-hour period alternate weeks.

(b) *Laboratory*.—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. Lecture course covers properties of engineering materials.

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.

One lecture a week. First Term.

One three-hour period alternate weeks. Both terms.

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.

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, Bernoulli's theorem, flow through

orifices, short tubes, nozzles, weirs, pipes, and open channels, and the dynamic action of jets.

Text-book: Russell, *Hydraulics*, 5th edition, Holt.

One lecture and one two-hour period a week. Mr. Pretious.

(b) Laboratory period includes experimental work on gauges, pipes, weirs, orifices, and hydraulic machines.

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

One two-hour period a week. Mr. Muir.

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

One three-hour period a week. Mr. Pretious.

14. *Surveying 2*.—A continuation of Civil 6. Transition curves for highways and railways; mine, hydrographic, and phototopographic surveying; Dominion and Provincial surveys; field astronomy.

Text-book: Bouehard, *Surveying*, International Textbook Co.

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

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 C.E. 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.

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

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*.—Elementary mathematics of investment; interest; annuities; financial comparison of engineering installations; organization of business enterprise; principles of

financing; bonds; stocks; graphical analysis of fixed and variable expense; elementary accounting; interpretation of financial statements; elements of statistical method.

Text-book: Woods and DeGarmo, *Introduction to Engineering Economy*, Macmillan.

References: Dewing, *Financial Policy of Corporations*, Ronald; Jordan, *Investments*, Prentice-Hall.

One lecture and one one-hour period a week. 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; 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*, University of Toronto.

One lecture a 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 of sewerage systems; physical, chemical, biological, and economic 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.

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

23. *Transportation 2. Highway Engineering*.—Development and organization; 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: Hogenotogler, *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-books: Sutherland & Reese, *Reinforced Concrete Design*, 2nd edition, Wiley; *Reinforced Concrete Design Handbook*, American Concrete Institute.

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

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 Turneaure, *Modern Framed Structures*, Vols. 1-3, Wiley.

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 C.E. 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, run-off, 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.

Two two-hour periods a week.

Mr. Finlay, Mr. Peebles.

31. *Mechanics 2*.—An extension of the subject matter of Physics 4 (a), applying the methods of the differential and integral calculus.

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.

One three-hour period a week.

Mr. Lighthall, Mr. Finlay.

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.

COURSE 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 and Head of the Department: G. G. Sedgewick.
Assistant Professor: Edmund Morrison.

2. *Literature.*—For students in Nursing. As in Arts. (See page 159.)

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.

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 and Head of the Department: J. E. Liersch. (On leave of absence.)

Associate Professor and Acting Head of the Department: F. Malcolm Knapp.

Assistant Professor: Braham G. Griffith.

Assistant Professor: Thomas G. Wright. (On leave of absence.)

Special Lecturer: J. L. Alexander.

Honorary Lecturer: R. M. Brown.

Part-time Lecturer: L. B. Dixon.

Part-time Lecturer: William Byers.

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. Second Year.

3 units.

Mr. Davidson, Mr. Dickson, Mr. Griffith, Mr. Hutchinson, Mr. Knapp.

This course is the same as Botany 1 (b). (See page 253.)

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. Mr. Griffith, Mr. Knapp.

3 units.

This course is the same as Botany 1 (c). (See page 253.)

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. Mr. Byers.

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, Fourth 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, Fourth Year. 2 units.

3. *Forest Protection*.—The fire problem, legislation, organization for prevention and control.

Text-books: Hawley, *Forest Protection*, Wiley; *Western Fire Fighters' Manual*, Western Forestry and Conservation Association, Portland.

Reference books: Various government publications.

Two lectures a week. First Term, Fourth Year. Mr. Knapp.

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. Mr. Knapp. 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. Mr. Griffith. 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. Mr. Griffith. 1 unit.

8. *Silviculture*.—Silvicultural systems; intermediate and final cuttings; natural and artificial regeneration.

Text-books: Hawley, *Practice of Silviculture*, 4th edition, Wiley; Toumey and Korstian, *Seeding and Planting in the Practice of Forestry*, 3rd edition, Wiley.

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

Four lectures and one period of four hours laboratory a week. Second Term, Fifth Year. Mr. Griffith. 3 units.

10. *Logging Engineering*.—Principles and practices of logging in the chief timber regions of North America, with 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: Matthews, *Cost Control in the Logging Industry*, McGraw-Hill; Brown, *Logging Principles and Practices*, 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. Mr. Knapp. 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.

Four lectures and one period of four hours laboratory a week. First Term, Fifth Year. Mr. Knapp. 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. Mr. Dixon. 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. Mr. Griffith, Mr. Knapp.

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. Mr. Griffith, Mr. Knapp.

2 units.

16. *Forest Economics*.—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: Buttrick, *Economics of Forestry*, Wiley, and numerous periodicals and publications.

Four lectures a week. Second Term, Fifth Year.

3 units.

**Vancouver Laboratory
Forest Products Laboratories of Canada,
Forest Service**

Department of Mines and Resources, Canada

Superintendent: R. M. Brown, B.Sc.F. (Toronto).

Assistant Engineer: R. S. Perry, B.Sc. (McGill).

Division of Timber Mechanics

Chief of Division: J. B. Alexander, M.Sc. (New Brunswick).

Forest Products Assistant, Grade 2: J. T. Lee.

Forest Products Assistant, Grade 2:

Forest Products Assistant, Grade 1: W. W. Davidson.

Forest Products Assistant, Grade 1: J. Varley.

Forest Products Assistant, Grade 1: P. E. Heaton.

Division of Timber Products

Acting Chief of Division: H. W. Eades, B.Sc.F. (Washington).

Forest Products Assistant, Grade 2: C. J. Archer, B.Sc.F. (Toronto).

Assistant in Forestry and Laboratory Research: P. J. Salisbury, B.S.A.
(Brit. Col.).

Laboratory Assistant: Miss Mary L. Mulvin, B.S.A. (Brit. Col.).

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 investigation, 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 among 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 and Head of the Department: 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.

Assistant Professor: Vladimir J. Okulitch.

Lecturer: Mrs. Gwendolen O'Brien.

Geology

1. *General Geology*.—As in Arts. (See page 163.)
2. (a) *General Mineralogy*.—As in Arts. (See page 164.)
(b) *Descriptive and Determinative Mineralogy*.—As in Arts.
(See page 165.)

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.

Text-book: Tyrrell, *The Principles of Petrology*, Dutton.

Two lectures a week. Mr. Gunning.

4. *Structural Geology*.—As in Arts. (See page 165.)

5. *History of the Earth Sciences and Geological Theories*.—As in Arts. (See page 165.)

6. *Palaeontology*.—As in Arts. (See page 166.)

7. *Petrography*.—As in Arts. (See page 166.)

8. *Economic Geology*.—As in Arts. (See page 166.)

9. *Mineralography*.—As in Arts. (See page 166.)

10. *Field Geology*.—As in Arts. (See page 167.)

11. *Regional Geology*.—As in Arts. (See page 167.)

12. *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.

(This course is identical with the lecture portion of Geography 4.)

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

Two lectures a week.

COURSES FOR GRADUATE STUDENTS

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

20. *Sedimentation*.—As in Arts. (See page 168.)

21. *Problems in Palaeontology*.—As in Arts. (See page 168.)

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, Wiley.

One lecture or seminar and four 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*.

Occasional seminars and seven, nine, or eleven hours laboratory work a week. Mr. Warren.

25. *Petrogeny*.—As in Arts. (See page 169.)

26. *Mineral Deposits*.—As in Arts. (See page 169.)

Department of Mathematics

Professor and Head of the Department: Daniel Buchanan.

Professor: F. S. Nowlan.

Professor: Ralph D. James.

Professor:

Professor: Walter H. Gage.

Associate Professor: S. A. Jennings.

Instructor: Miss May L. Barclay.

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

Text-books: Kells, Kern and Bland, *Plane Trigonometry*, McGraw-Hill; Leighton, *Solid Geometry and Spherical Trigonometry*, Van Nostrand.

Two lectures a week. Mr. James.

3. *Algebra*.—A review of simple series, permutations, and combinations; a study of complex numbers, the binomial theorem, exponential and other series, undetermined coefficients, partial and continued fractions, graphical algebra, elementary theory of equations, convergence of series, and determinants.

Text-book: Pettit and Luteyn, *College Algebra*, 2nd edition, Wiley.

Two lectures a week.

4. *Calculus*.—An introductory study of the differential and integral calculus will be made, and some of the simpler applications considered.

Text-book: Nelson, Folley, and Borgman, *Calculus*, Heath.

Two lectures a week. Mr. Gage.

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

Text-book: Nelson, Folley, and Borgman, *Calculus*, Heath.
 Three lectures a week. Mr. Gage.

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

Text-books: Young, Fort, and Morgan, *Analytic Geometry*, Houghton Mifflin; Griffin, *Introduction to Spherical Trigonometry*, Houghton Mifflin.

Two lectures a week. Mr. James.

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

Text-book: Reddick and Miller, *Advanced Mathematics for Engineers*, Wiley.

Three lectures a week. Mr. Gage.

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

Two lectures a week.

Department of Mechanical and Electrical Engineering

Professor and Head of the Department: H. J. MacLeod.

Professor of Mechanical Engineering: F. W. Vernon.

Professor of Electrical Engineering: S. C. Morgan.

Associate Professor of Electrical Engineering: W. B. Coulthard.

Associate Professor of Mechanical Engineering: W. O. Richmond.

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

Assistant Professor of Mechanical Engineering: D. W. Thomson.

Instructor: L. R. Kersey.

Mechanical Engineering

1. *Mechanical Drawing*.—Free hand lettering; geometric figures; orthographic projection; dimensioning; thread conventions; technical sketching; detail and assembly drawings of machine parts; tracing and blueprinting.

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

One three-hour period a week.

Mr. McIlroy, Mr. Thomson, and Mr. Kersey.

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 Chemical, Electrical, Mechanical, and Metallurgical Engineering.

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

Reference: Schuman, *Technical Drafting*, Harpers.

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: Guillet, *Kinematics of Machines*, 4th edition, Wiley.

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

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 and Doughtie, *Design of Machine Members*, 2nd edition, 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: V. W. and G. A. Young, *Elementary Engineering Thermodynamics*, McGraw-Hill.

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

Mr. McIlroy, Mr. Thomson.

7. *Applied Thermodynamics*.—This course deals with the application of the laws of thermodynamics to problems concerning steam cycles and steam engines, the flow and compression of air, the combustion of fuels, internal combustion engines, and refrigerating machines.

Text-book: Faires, *Applied Thermodynamics*, Macmillan.

References: A.S.M.E. *Power Test Codes*; Shoop and Tuve, *Mechanical Engineering Practice*, McGraw-Hill.

Three lectures and one three-hour laboratory period a week. Mr. Richmond, Mr. Vernon, Mr. Thomson.

10. *Mechanical Engineering Laboratory*.—The work carried out embodies the operation and testing of the various laboratory machines, illustrating the theory covered in the corresponding lecture courses. Written reports are required on the tests carried out.

One four-hour period a week. Mr. Vernon, Mr. McIlroy, Mr. Richmond.

11. *Heating, Ventilating, Air Conditioning, and Refrigeration*.—Factors affecting human comfort; calculation of building heat losses and gains; design of the various steam, hot-water, and warm-air heating systems; measurement of air flow and design of duct systems; air humidification and dehumidification; design and performance of the various refrigerating apparatus; study of refrigerants; heat transfer and flow of fluids.

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

References: Macintire, *Refrigeration Engineering*, Wiley; A.S.H.V.E. *Guide*; Allen and Walker, *Heating and Air Conditioning*, McGraw-Hill.

Two lectures a week. 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. McIlroy.

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. Second Term. Mr. Thomson.

15. *Prime Movers*.—A more advanced course in the theory of all types of prime movers, namely water turbines, steam turbines, and internal combustion engines.

Water Turbines: impulse turbines; Pelton wheel; Girard turbine; reaction turbines; Francis turbine; Kaplan turbine; specific speeds; draft tube; centrifugal pumps; reciprocating pumps; hydraulic pressure machines.

Steam Turbines: flow through nozzles; impulse turbines; De Laval, Curtis, Zoëilly, Rateau; velocity compounding; pressure compounding; reaction turbines; Parsons; velocity diagrams; re-heating of steam; the reheat cycle; the regenerative cycle; bleeding condensers and air pumps; steam consumption of turbines.

Internal Combustion Engines: a more advanced course in the thermodynamic theory, design, and performance of petrol, gas, and oil engines.

References: Goudie, *Steam Turbines*, Longmans; Stodola, *Steam and Gas Turbines*, McGraw-Hill; Moyer, *Steam Turbines*, Wiley; Lea, *Hydraulics*, Longmans; Gibson, *Hydro-electric Engineering*, Vol. 1, Blackie.

Three 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.

Text-book: Freberg and Kemler, *Elements of Mechanical Vibration*, Wiley.

References: Den Hartog, *Mechanical Vibrations*, McGraw-Hill; Timoshenko, *Strength of Materials*, Part 1 and Part 2, Van Nostrand.

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: Jones, *Elements of Practical Aerodynamics*, Wiley.

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 Chemical, Electrical, Mechanical, and Metallurgical Engineering.

31. *Machine Shop Practice*.—A continuation of M.E. 30. Required of students in Mechanical Engineering only. Optional for students in Fourth Year Electrical Engineering.

One two-hour period a week.

32. *Machine Shop Practice*.—A continuation of M.E. 31. Required of students in Fifth Year Mechanical Engineering only.

One two-hour period a week.

COURSE FOR GRADUATE STUDENTS

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.

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.

Two lectures a week and one two-hour period a week for experimental work and problems. Mr. Morgan and Mr. Kersey.

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

For Fourth Year Electrical and Mechanical students only.

Text-book: Hehre and Harness, *Electrical Circuits and Machinery*, Vol. 1, Wiley.

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

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.

For Fourth Year Electrical and Mechanical students only.

Text-book: Kerchner & Coreoran, *Alternating Current Circuits*, Wiley.

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

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.

For Fourth Year Electrical Engineering students only.

Text-book: Golding, *Electrical Measurements and Measuring Instruments*, Pitman.

Reference: Drysdale and Jolly, *Electrical Measuring Instruments*, Benn.

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: Boast, *Illumination Engineering*, McGraw-Hill.

Reference: 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.

References: 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; impedance transformation and antennae.

Text-book: Eastman, *Fundamentals of Vacuum Tubes*, McGraw-Hill.

References: Ware and Reed, *Communication Circuits*, Wiley; Everitt, *Communication Engineering*, McGraw-Hill.

Two lectures and one laboratory period of three hours a week. Mr. MacLeod and Mr. Kersey.

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 and one hour problem work a week. Mr. Coulthard.

14. *Alternating Current Machines*.—The theory and characteristics of alternating current machines. For Fifth Year students in Mechanical Engineering.

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

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

COURSE FOR GRADUATE STUDENTS

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; Ter-

man, *Radio Engineering*, McGraw-Hill; Skilling, *Fundamentals of Electric Waves*, Wiley; current journals.

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

Department of Mining and Metallurgy

Professor and Head of the Department: J. M. Turnbull.

Professor of Metallurgy: Geo. A. Gillies.

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.

Two 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: drainage; ventilation; 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.

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.

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.

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.

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.

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: Kehl, *The Principles of Metallographic Laboratory Practice*, 2nd edition, McGraw-Hill.

One lecture and three hours laboratory a week. Second Term. Mr. Forward.

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

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

Two lectures a week. Mr. Forward.

3. (a) *Physical Metallurgy*.—The crystal structure of metals and alloys; effect of alloy additions; principles of heat treatment; special alloys; atmosphere control; furnaces.

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

References: Hume-Rothery, *The Structure of Metals and Alloys*, Institute of Metals; Bain, *The Alloying Elements in Steel*, American Society for Metals; Bullens, *Steel and Its Heat Treatment*, 4th edition, Wiley; *Metals Handbook*, 1939 edition, American Society for Metals.

Two lectures a week. Mr. Forward.

3. (b) *Calculations*.—A laboratory course dealing with problems related to the fields of combustion, roasting, smelting, leaching, and refining. The course includes a discussion of fundamental features of ore-buying contracts and computation of smelter charges.

References: Richards, *Metallurgical Calculations*, McGraw-Hill; Butts, *Textbook of Metallurgical Problems*, McGraw-Hill; Spurr and Wormser, *Marketing of Metals and Minerals*, McGraw-Hill.

Two hours a week. Mr. Forward.

4. *Metallurgy Laboratory*.—Laboratory analysis of ores, alloys, and other 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.

Six hours laboratory a week. Mr. Forward.

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

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

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, copper, and iron.

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

7. *Base Metal Production*.—A study of methods of production of some base metals and the factors influencing the market for them. Students are required to prepare a report on the current production methods and economic aspects of one of the metals.

References: Spurr and Wormser, *Marketing of Metals and Minerals*, McGraw-Hill; Roush, *Strategic Mineral Supplies*, McGraw-Hill; *Mineral Economics*, American Institute of Mining and Metallurgy; Liddell, *Handbook of Non-ferrous Metallurgy*, McGraw-

Hill; Mantell, *Industrial Electrochemistry*, McGraw-Hill; current technical and statistical literature.

One lecture a week. Mr. Forward.

8. *Process Laboratory*.—The work includes a practical study of metallurgical principles; the laboratory technique employed in conducting investigations in reduction metallurgy and metallography; pyrometry.

Three hours laboratory a week. Mr. Forward.

9. *Advanced Metallography*.—A continuation of the work of Metallurgy 1(c): polishing soft metals, identification and micro-constituents, macro-etching, contact prints, and photography. For students taking the physical metallurgy option.

Three hours laboratory a week.

Mineral Dressing

1. *Mineral 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*, Macmillan; Richards and Locke, *Text-book of Ore Dressing*, Wiley; Taggart, *Handbook of Ore Dressing*, Wiley; Gaudin, *Principles of Mineral Dressing*, McGraw-Hill; Wark, *Principles of Flotation*, Australasian Institute of Mining and Metallurgy.

Two lectures a week. Mr. Gillies.

2. *Mineral 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.

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

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

Six hours a week. Mr. Gillies.

COURSES FOR GRADUATE STUDENTS

101. *Mineral Dressing*.—An advanced course in mineral dressing for graduate students, including theory and laboratory work of a research character.

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.

Twenty-one hours a week. Mr. Forward.

Department of Nursing and Health

Professor and Head of the Department: C. E. Dolman

Associate Professor: Miss H. Evelyn Mallory.

Assistant Professor: Miss Margaret E. Kerr.

Instructor: Miss Mary E. Henderson.

Instructor: Miss Pauline Capelle.

Lecturer: L. E. Ranta.

Part-time Lecturers:

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

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

Miss J. Kilburn, R.N.

T. R. Hall, B.A. (Dalhousie).

Honorary Lecturers:

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

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

Nursing

1. *History of Nursing*.—A study of the origin and history of nursing.

One hour a week. Second Year. Miss Henderson.

Lectures: 1.30-2.30, Tuesday.

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

Two hours a week. Second Year, Second Term. Mr. Allardyce.

Lectures: 10.30-11.30, Tuesday and Friday.

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.

One lecture and four hours laboratory a week. Dr. Ranta, Miss Todd.

Lectures: 2.30-3.30, Monday.

Laboratory: 3.30-5.30, Monday and 2.30-4.30, Friday.

This course is the same as Bacteriology 3. (See page 119.)

4. *Preventive Medicine*.—A study of the public health aspects of preventable disease, including the acute infections; tuberculosis and venereal diseases; heart disease, cancer, and other degenerative conditions; preparation and utilization of biological products; and the newer knowledge of nutrition.

Two hours a week, First Term. Three hours a week, Second Term. Dr. Dolman, Dr. Ranta.

5. *Mental Hygiene*.—An introduction to the study of mental illness, with emphasis upon its prevention; child guidance clinics and the psychiatric social history.

7. *Infant and Child Hygiene*.—A study of the physical, psychological, and other factors affecting the development of the infant and child. The prevention of the common disorders of infancy and childhood, and an analysis of those factors which promote and maintain infant and child health.

One hour a week. Dr. Spohn and special lecturers.

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

One hour a week. One term. Dr. Ranta.

11. *Public Health Organization*.—A series of lectures dealing with the organization and administration of health services.

One hour a week. Both terms. Special lecturers.

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. One term.

13. *Principles of Public Health Nursing*.—A study of the development of public health nursing, including problems of organization and administration.

Text-book: Gardner, *Public Health Nursing*, Macmillan.

Two hours a week.

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

Text-book: *Manual of Public Health Nursing*, Macmillan.

One hour a week.

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.

Two hours a week.

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

One lecture a week. Miss Mallory.

18. *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 Mallory.

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 Mallory.

21. *Social Case Work*.—The general principles underlying social case work will be studied and the interrelation of nursing and allied welfare agencies will be discussed.

Two hours a week. Second Term. Miss Gleason.

27. *Sociology*.—The family; an approach to the study of society by way of a basic institution.

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

31. *Principles and Methods of Teaching*.

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

35. *Essay*.—Written presentation and discussion of a report upon assigned problems or topics within the scope of nursing education or public health.

36. *Field Work in Nursing B**.—Field work, adjusted to meet individual requirements, will be arranged with various associated public health and welfare organizations. It may be necessary for part of this field work to be taken before or after the academic year.

37. *Field Work in Nursing C*.—Opportunities for practice teaching and for the observation of school of nursing administration and ward supervision will be provided in associated hospitals.

Department of Physics

Professor and Head of the Department: G. M. Shrum.

Professor: A. E. Hennings.

Associate Professor: Harold D. Smith.

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

Assistant Professor: Kenneth C. Mann. (On leave of absence.)

Assistant Professor: George Michael Volkoff. (On leave of absence.)

Lecturer: R. Eric Langton.

Lecturer: William Petrie.

Lecturer: R. Keith Brown.

Lecturer: J. H. L. Watson.

Lecturer: Kenneth O. Wright.

The instruction includes lectures on the general principles of physics, accompanied by courses of practical work in the laboratory.

A. *Introduction to Physics*.—As in Arts. (See page 200.)

1. *Elementary Physics*.—As in Arts. (See page 200.)

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.

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

(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.

References: Allen and Maxwell, *A Text-book of Heat*, Macmillan; Cork, *Heat*, Wiley.

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.

*In calculating the probable expense of the course, students are reminded to allow for costs in connection with field work. The sum of \$100.00 is mentioned as probably the maximum amount required to cover the expenses of board and lodging while with the rural nursing organization, and of transportation.

The course includes a short treatment of the elements of alternating currents and an introduction to vacuum tube circuits.

Text-book: Loeb, *Fundamentals of Electricity and Magnetism*, 2nd edition, Wiley.

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

10. *Light*.—A short lecture course for engineering students. The subject matter includes radiation theory, photography, interference instruments, refractometers, spectroscopy, and applications of polarized light to engineering.

References: Gibb, *Optical Methods of Chemical Analysis*, McGraw-Hill; McAdams, *Heat Transmission*, McGraw-Hill.

One lecture a week.

12. *Introduction to Atomic Structure*.—As in Arts. (See page 204.)

Department of Zoology

Professor and Head of the Department: 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*.—As in Arts. (See page 206.)

10. *Forest Entomology*.—As in Arts. (See page 209.)

1944-45

THE
FACULTY
OF
AGRICULTURE

1944-45

THIRTIETH SESSION
1944-1945

1944-45

FACULTY OF AGRICULTURE

INFORMATION FOR STUDENTS IN AGRICULTURE

The particular course of study* selected by any student in the Faculty of Agriculture 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, industry, 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 related 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 in the applied departments.

During the last two years of the course the student is permitted, in consultation with the Dean, the Committee on Courses, and the head of a 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 Agricultural Economics, Agronomy, Animal Husbandry, Dairying, Horticulture, Poultry Husbandry; or a still further specialized course within these or closely allied fields, such as in Animal or Plant Nutrition, Animal or Plant Pathology, Applied Genetics, Bacteriology, Entomology, Physiology, Soils, 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 Committee on Courses, and a department head.

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,

*The curriculum described in the following pages may be changed from time to time as deemed advisable by the Senate.

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. or the B.S.A. and B.Com. 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 32-37.

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

Seven 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 double course for the degrees of B.Com. and B.S.A. (See *Double Courses*.)
- (4) A one-year occupational course leading to a diploma in Agriculture.
- (5) A winter course at the University, consisting of a Short Course in one or more of the agricultural subjects: Poultry, Horticulture, etc.
- (6) Extension courses at different points in the Province.
- (7) 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 Agricultural Economics, Agronomy, Animal Husbandry, Poultry Husbandry, Dairying, and Horticulture on the part of those who wish to extend their practical knowledge. A successful completion of the course leads to a diploma in Agriculture. University Entrance standing 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 295-296.

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

Students are required to select their courses in consultation with the head of the department in which the undergraduate essay is to be written. In addition to Agriculture 1, all students are required to take as a minimum of agricultural subjects outside of their major department, 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. Students writing essays in fields other than those indicated above, such as Plant Pathology and Economic Entomology, are required to include in their outlines at least Agronomy 2, Horticulture 13, Horticulture 41, and Horticulture 42.

At the beginning of the First Term of each session all students are required to submit to the Dean for approval by the Committee on Courses an outline of courses to be taken during that session.

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 University Entrance 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 2(a) and 2(b)	Beg. Spanish
Dairying 1 and 2 or 3	Botany 1(a)	Commerce 1
Horticulture 13	Chemistry 2	Economics 1
Poultry Husbandry 12	Geology 1	History 1
	Mathematics 2 or 3	University Entrance Language 1
	Physics A or 1	University Entrance Language 2
	Zoology 1	Psychology 1
		Home Economics

Subject to the approval of the Dean and the 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 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, but not more than 18 units of study may be undertaken in either year without approval of the Faculty.

A student's standing at graduation will 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 (8½x11 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.

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 will 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 will 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 will 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 relation 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 will be October 1st.
- (b) A thesis represents three to six units of work.
- (c) Examinations, written or oral, or both, will 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 *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, 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 either 2 or 3 and 4, 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, University Entrance 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.

Examination 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 *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 University Entrance, 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 a week. First Year.

The staff.

3 units.

Department of Agricultural Economics

Professor and Head of the Department: 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, the United States, and Canada.

References and assigned readings from Gray, Ross, Warren, Adams, and others.

Two lectures and one laboratory a week throughout the year.

3 units.

(Not given in 1944-45.)

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 a week.

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, cooperative marketing, and the evolution of marketing legislation.

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

Three lectures a week.

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.) 3 to 5 units.

Prerequisite: Agricultural Economics 1.

51. *Agricultural Economics*.—The general principles of marketing, price fixing, marketing by commission, the influence of the market on production, cooperation; special topics and assigned reading. (Open to graduates only.) 3 to 5 units.

Prerequisite: Agricultural Economics 2.

Department of Agronomy

Professor and Head of the Department: G. G. Moe.

Professor: D. G. Laird.

Assistant Professor: 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 a 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 a week. Second Term. 1½ units.

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

Two lectures and one laboratory a 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 a 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 a 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 a 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, Williams and Wilkins.

Prerequisite: Bacteriology 1.

Five hours a 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 a week. First Term. 1½ units.

(Not given in 1944-45.)

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

Prerequisite: Agronomy 11.

Two lectures and one laboratory a week. Second Term.

1½ units.

(Not given in 1944-45.)

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

Prerequisite: Agronomy 11.

Three lectures a 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 a 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.

(Not given in 1944-45.)

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 15.

One lecture and two laboratories a week. 3 units.

Department of Animal Husbandry

Professor and Head of the Department: 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 a 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 a week. 3 units.

(Given in 1945-46 and alternate years.)

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 a week. 3 units.

(Given in 1944-45 and alternate years.)

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 a 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 a 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, of parasitism, and of 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 a 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 a 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 a 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 and Head of the Department: Blythe Eagles.
Instructor: Miss Lois Campbell.

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

1. *Butter-Making.*—An elementary course. Two lectures and one laboratory a week. First Term. 1½ units.
2. *Cheese-Making.*—An elementary course. Two lectures and one laboratory a week. Second Term. 1½ units.

(May not be given in 1944-45.)

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*, latest edition, McGraw-Hill.

Two lectures and one laboratory a week. 3 units.

(Given in 1944-45 and alternate years.)

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.

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.

4. (b) *Dairy Bacteriology.*—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; the 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.

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 a 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 a 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 a week. Second Term. 1½ units.

25. *Undergraduate Essay*.—A written report on a prescribed laboratory study.

Fourth Year. 3 units.

30. *Directed Studies*.—Systematic work on an approved problem. 3 units.

50. Directed systematic studies of defined phases of the work introduced in Dairying 4 or 7. 3 to 5 units.

(Open to graduates only.)

Department of Horticulture

Professor and Head of the Department: 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 a 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 a week. First Term.

1½ units.

15. *Special Horticulture*.—The study of special branches of commercial horticulture, including

(a) *Horticultural Products and By-Products*.

A study of the principles and practices involved in canning of fruits and vegetables; preparation of fruit juices; vinegar making; preservation by freezing; dehydration; etc.

(b) *Special Horticultural Crops*.

A study of the growing and marketing of such horticultural crops as citrus fruits, bananas, pineapples, figs, dates, avocados, walnuts, filberts, almonds, pecans, etc.

Two lectures and one laboratory a 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 a 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 a 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 a week. First Term.

1½ units.

19. *Methods of Research*.—A study of the methods of research, with special reference to problems in horticulture, including the

breeding of horticultural crops and variety adaptations; and 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 a week. Second Term. $1\frac{1}{2}$ 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 a week. First Term. $1\frac{1}{2}$ 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 a week. First Term. 2 units.

Text-book: Onslow, *Plant Biochemistry*, latest edition, Cambridge.

References: Haas & Hill, *The Chemistry of Plant Products*, vol. i, latest edition, Longmans; Harvey, *Plant Physiological Chemistry*, Appleton-Century.

42. *Plant Nutrition (b)*.—Diagnosis and control of plant deficiency diseases; nutrient solutions; hydroponics (tank farms); photoperiodism; growth hormones; and the 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 interrelations of plants and soils. (Same as Botany 3(c).)

Reference: Miller, *Plant Physiology*, latest edition, McGraw-Hill.

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

2 units.

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 a week.

4 units.

Department of Poultry Husbandry

Professor and Head of the Department: E. A. Lloyd.

Assistant Professor: 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.

References: Lippincott and Card, *Poultry Production*, sixth edition, 1939, Lea and Febiger; Winter and Funk, *Poultry Science and Practice*, Lippincott.

Two lectures and one laboratory a 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; Lippincott and Card, *Poultry Production*, sixth edition, 1939, Lea and Febiger.

Two lectures and one laboratory a 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*, Wiley.

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

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

Two lectures and one laboratory a week. 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*, Wiley.

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

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

Reference: Jull, *Poultry Breeding*, second edition, Wiley.

Two lectures and one laboratory a 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.

References: Jull, *Poultry Husbandry*, McGraw-Hill; Charles and Stuart, *Commercial Poultry Farming*, Interstate Printing Co.

Two lectures and one laboratory a 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: Jull, *Poultry Husbandry*, McGraw-Hill; Lippincott and Card, *Poultry Production*, sixth edition, Lea and Febiger.

One lecture and two laboratory periods, or one laboratory of four hours' duration a 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.

References: Barger and Card, *Poultry Diseases*, Lea & Febiger; Biester and Devries, *Diseases of Poultry*, Iowa State College.

Two lectures and one laboratory a 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.

References: Sherman, *Chemistry of Food and Nutrition*, latest edition, Macmillan; Maynard, *Animal Nutrition*, McGraw-Hill.

Two lectures and one laboratory a 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.

References: Jull, *Poultry Husbandry*, McGraw-Hill; Morrison, *Feeds and Feeding* (abridged), Morrison Publishing Co.

Two lectures and one laboratory a 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.

Reference: Ewing, *Handbook of Poultry Nutrition*, revised edition, W. R. Ewing, South Pasadena, California.

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 a week. Four hours practice a week.

1½ units.

25. *Undergraduate Essay*. 3 units.
 30. *Research* (Directed). 3 units.
 50. *Research* (Directed). 3 to 5 units.
 (Open to graduates only.)

Department of English

Professor and Head of the Department: G. G. Sedgewick.
 Instructor: G. Philip V. Akrigg.

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 a week. Mr. Akrigg. 3 units.

Genetics

A. H. Hutchinson.
 V. C. Brink.
 Miss Ruth E. Fields.

1. (a) *Principles of Genetics*.—This course is the same as Biology 2(a). (See page 122.)

Prerequisite: Biology 1.

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

1. (b) *Principles of Genetics*.—This course is the same as Biology 2(b). (See page 122.)

Prerequisite: Genetics 1 (a).

One lecture and four hours laboratory a week. Second Term.
 Mr. Hutchinson, Mr. Brink, Miss Fields. 1½ units.

2. *Advanced Genetics*.—

(a) An introduction to genetical methods.

Prerequisites: Genetics 1 (a) and 1 (b).

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

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

Prerequisite: Genetics 1 (b).

Two hours a week. Second Term. 1 unit.

Department of Bacteriology and Preventive Medicine

Professor and Head of the Department: C. E. Dolman.

(For details of courses see pages 118-121.)

Department of Biology and Botany

Professor and Head of the Department: A. H. Hutchinson.

(For details of courses see pages 121-128.)

Department of Chemistry

Professor and Head of the Department: R. H. Clark.

(For details of courses see pages 129-135.)

Department of Civil Engineering

Professor and Head of the Department: J. N. Finlayson.

(For details of courses see pages 256-263.)

Department of Classics

Professor and Head of the Department: O. J. Todd.

(For details of courses see pages 135-140.)

Department of Commerce

Professor and Head of the Department: Ellis H. Morrow.

(For details of courses see pages 141-143.)

Department of Economics, Political Science, and Sociology

Acting Head of the Department: Daniel Buchanan.

(For details of courses see pages 143-152.)

Department of English

Professor and Head of the Department: G. G. Sedgewick.

(For details of courses see pages 158-163.)

Department of Geology and Geography

Professor and Head of the Department: M. Y. Williams.

(For details of courses see pages 163-171.)

Department of History

Professor and Head of the Department: W. N. Sage.

(For details of courses see pages 171-177.)

Department of Mathematics

Professor and Head of the Department: Daniel Buchanan.

(For details of courses see pages 183-187.)

Department of Modern Languages

Professor and Head of the Department: D. O. Evans.

(For details of courses see pages 187-192.)

Department of Philosophy and Psychology

Professor and Head of the Department: J. A. Irving.

(For details of courses see pages 193-199.)

Department of Physics

Professor and Head of the Department: G. M. Shrum.

(For details of courses see pages 200-206.)

Department of Zoology

Professor and Head of the Department: W. A. Clemens.

(For details of courses see pages 206-211.)

1944-45

DOUBLE COURSES

1944-45

1944-45

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, Nursing A (1), Nursing A (2), 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 83-85) 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 60 per cent. (See also *Admission to Applied Science*, page 223.) 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 and Botany (Forestry Option), and Forestry

Students completing the Honours course in Biology and Botany (Forestry Option) for the B.A. degree (see page 89) may qualify for the degree of B.S.F. by taking the Fifth Year in Forestry (see page 233).

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 2 (b, c), 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 Political Science for the B.A. Degree (see pages 89 and 93) may qualify for the degree of B.S.F. by taking the Fifth Year in Forestry (see page 233).

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 2 (*b, c*).

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

A First Year course in Arts and Science or the equivalent.

SECOND YEAR

English 2
Mathematics 2 or 3
Economics 1
Commerce 1 or an elective*
Botany 1 (*b*)
Civil Engineering 2

Students will not be permitted to register for the Third Year in Commerce unless they have secured a standing of 60 per cent in Economics 1.

THIRD YEAR

Economics 4
Economics 12
Commerce 6
Forestry 1 (*c*)
Civil Engineering 5
Commerce 1 if not already taken or an elective*

FOURTH YEAR

Economics 6
Commerce 4
Commerce 9
Forestry 2 (*b, c*)
*Elective

FIFTH YEAR

The Fifth Year Forestry course in Applied Science for the B.S.F. degree. See page 233.

*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.

Double Course for the Degrees of B.Com. and B.S.A.

Students may so plan their courses that the degrees of Bachelor of Commerce 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.

1942

LIST OF STUDENTS IN ATTENDANCE

SESSION 1943-44

FACULTY OF ARTS AND SCIENCE

FIRST YEAR

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Abbott, Arnold T.	New Westminster	Borisuk, Michael	Fernie
Adair, Jacqueline	Vancouver	Boulding, Patricia M.	Penticton
Adams, Stanley E.	Brighouse	Boulton, H. Patricia	Vancouver
Adams, William S.	Vancouver	Bowe, Marguerite W.	Vancouver
Addems, Allan H.	Vancouver	Bowell, Nancy E.	Vancouver
Adrian, Edith C.	Vancouver	Boyd, Frances A.	Vancouver
Albrecht, Frank G.	Vancouver	Brandon, Colleen	Revelstoke
Allen, Harry J.	Toronto, Ont.	Breadon, Mary L.	Vancouver
Amy, John C.	New Westminster	Bredt, Malcolm D.	Vancouver
Amy, Rozel J.	New Westminster	Bridges, Russell B.	Hollyburn
Anderson, Cathrine McL.	Vancouver	Brodie, Malcolm N.	Vancouver
Anderson, George C.	Vancouver	Brooks, Allan C.	Okanagan Landing
Anderson, Gustav E.	Maillardville	Brooks, Elizabeth E.	Vancouver
Anderson, John D.	Vancouver	Brown, Donald G.	Vancouver
Anderson, P. Joanne	Vancouver	Brown, George F.	Ocean Falls
Anderson, Reginald S.	Vancouver	Brown, Patricia R.	Vancouver
Anderson, Thomas E.	Vancouver	Brown, Robert D.	Vancouver
Andrews, Dorothy-Ann	Vancouver	Brown, Ted R.	Ocean Falls
Archer, Douglas H.	Vancouver	Bruce, James R. D.	Vancouver
Ard, Thomas R. A.	Vancouver	Bryenton, Merle J.	New Westminster
Argue, James H.	Cranbrook	Bucknall, M. A. Joy	Vancouver
Arishenkoff, Nicholas	Grand Forks	Buerge, I. Melvin	Nakusp
Armstrong, Robert J.	Vancouver	Bulmur, Loyd	Vancouver
Arnold, Shirley J.	New Westminster	Burgess, William H.	Vancouver
Astola, Mirjam T.	Vancouver	Burke, William T.	Vancouver
Babb, A. Leslie	Vancouver	Burns, Margaret M.	Vancouver
Baillie, David	Prince Rupert	Burris, Helen D.	Kamloops
Bain, W. Arthur	Vancouver	Burritt, Eleanor E.	Vancouver
Ballentine, Patrick B.	Vancouver	Butler, E. Ruth	Vancouver
Bampton, Diana L.	Vancouver	Butters, Isobel J. D.	Penticton
Bampton, Virginia F.	Vancouver	Caffrey, T. Lillian	Vancouver
Bana, Adi R.	Vancouver	Caldwell, Harry E.	Cranbrook
Barclay-Ross, L. Mignon	Victoria	Campbell, Darell	Vancouver
Barnwell, John A.	Vancouver	Canning, Albert	Mission City
Barrass, Cyril W.	Vancouver	Capstick, Edward A.	Prince Rupert
Barrett, Gordon J.	Vancouver	Carnsew, Valerie I.	Vancouver
Barrett, Izadore	Vancouver	Carpenter, Donald McE.	Burnaby
Barron, John McP.	Prince Rupert	Carter, Ralph	Vancouver
Barron, William A.	Prince Rupert	Castillou, Harry G.	Vancouver
Baruch, Gideon	Vancouver	Castle, Robert G.	Vancouver
Bauder, E. Marshall	Vancouver	Chang, Jone	Vancouver
Baxter, Anne H.	Vancouver	Chang, Wilma	Vancouver
Baxter, Donald H.	Vancouver	Charles, Richard J.	Vancouver
Beebe, Bruce W.	Vancouver	Charleson, Donald A.	Ocean Falls
Belcher, Kenneth M.	Vancouver	Cherniavsky, Peter	Vancouver
Bell, Graham C.	Vancouver	Chisholm, Hugh R. D.	New Westminster
Bell, Mary A.	Vancouver	Chow, Timothy	Ottawa, Ontario
Bellamy, Donald F.	Victoria	Chrapko, Onysia	Eburne
Belyea, A. Douglas	Vancouver	Christie, Robert L.	Vancouver
Bewick, Mary	Vancouver	Christopher, Charlotte R.	North Vancouver
Bigsby, Floyd W.	Armstrong	Clark, E. Mary	Ocean Falls
Birkett, Joan C.	Vancouver	Clucach, Moros	Vancouver
Black, Francis L.	Kelowna	Cochrane, Edith L.	New Westminster
Blais, M. Andree	Vancouver	Cohen, John	Vancouver
Bloom, Albert C.	Princeton	Collen, William D.	Oliver
Blower, Thomas J. H.	Port Alberni	Collins, June V. V.	Vancouver
Blundell, Heather	Vancouver	Colls, David G.	Trail
Bodie, Robert T.	Vancouver	Comparelli, David E.	Vancouver
Bogas, Kenneth F.	Vancouver	Coney, Joyce B.	West Vancouver
Booth, Elizabeth A.	North Vancouver		
Borden, Jane L.	Vernon		

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

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Conley, Josephine H. A.	Hope	Fraser, Leslie J.	Prince George
Cooper, Elizabeth M.	Clayburn	Freudiger, Ronald	Vancouver
Corry, Geoffrey C.	Vancouver	Frew, Dorothy R.	Nanaimo
Coughlan, E. Dale	Vancouver	Frood, David G.	Vancouver
Couldwell, William J.	Vancouver	Frost, J. S. Calvin	Squamish
Coulthard, Frederick W.	New Westminster	Fudger, Margaret P.	Vancouver
Cowan, Douglas V.	Vancouver	Fullerton, Margaret A.	Quesnel
Craig, Robert A.	New Westminster	Fyfe, Margaret	Vancouver
Craigen, James B.	Powell River	Gabrielse, Hubert	Cloverdale
Crerar, Alistair D.	Prince Rupert	Gardner, Margaret H.	Essondale
Cribb, John M.	Vancouver	Gee, J. William	New Westminster
Cribb, R. Stephen	Cranbrook	Gee, W. Kuey	Vancouver
Crook, Lois M.	New Westminster	Gibson, Janette	Rosedale, Alberta
Crossan, Lawrence McA.	Vancouver	Godfrey, Winnifred B.	Vernon
Crowe, Dorothy M.	Trail	Golos, Vivian J.	Abbotsford
Cumming, Barbara N.	Vancouver	Goodman, C. Eric	Osoyoos
Dalgleish, Virginia F.	Kamloops	Goodman, Juanita V.	Vancouver
Darling, Peter A.	Vancouver	Goold, George W.	Vancouver
Davidson, Kenneth E.	Port Kells	Gordon, Robert N.	Vancouver
Davies, Raymond D.	Vancouver	Graham, Anne E.	Cranbrook
Davis, Evan T.	Vancouver	Graham, J. Alexander	Vancouver
Davis, F. Russell	Vancouver	Granberg, Ingrid H.	Britannia Beach
Davison, Nancy E.	Vancouver	Granhold, Ella M.	Port Coquitlam
Dawe, Alan E.	Vancouver	Grant, H. Kenneth	Vancouver
Dayton, S. Joyce	Vancouver	Grantham, Ronald D.	Vancouver
Dean, Robert E.	New Westminster	Graves, Nancy M.	Vancouver
d'Easum, B. Joan	Calgary, Alberta	Gray, Alexander J.	Vancouver
d'Easum, Robert H.	Vancouver	Gray, Robert V.	Vancouver
Dewdney E. Anne (Mrs.)	Penticton	Green, John W.	Vancouver
Diether, Robert L.	Victoria	Greenwood, Hazel V. E.	Fort Langley
Dobie, Thomas T.	Britannia Beach	Gresko, Victor	New Westminster
Dolmage, Mary E.	Vancouver	Grigg, Naomi I.	Vancouver
Donegani, Joyce A. P.	Eburne	Gritten, Richard A.	Powell River
Donovan, Denis N.	Vancouver	Grover, Frederick W.	Vancouver
Dorrance, Patricia E.	Vancouver	Haddad, Abe	Vancouver
Dorrell, Frances E. E.	Clinton	Hamilton, George C.	Vancouver
Dowding, Jack E.	Vancouver	Hamilton, S. Brian	Vancouver
Dryer, Lorne K.	Vancouver	Hanna, Alfred E. T.	Vancouver
Duff, Phillip A.	Langley Prairie	Hansen, Brock E.	New Westminster
Duffus, H. John	Vancouver	Hansen, H. David	Powell River
Dyke, Naomi J.	Nelson	Hardinge, Frances E.	Vancouver
Edward, William G.	Vancouver	Harradine, Sylvia F.	Vancouver
Edwards, Brian H.	Vancouver	Harris, Paul W.	New Westminster
Edwards, Robin W.	Galena	Harrison, Roland S.	Grand Forks
Eedy, Gerald T.	Vancouver	Harvey, James C.	Mount Lehman
Elder, T. Peter	Black Pool	Hatton, Gwladys N.	Kamloops
Ellis, Nick	Vancouver	Haugan, Howard J.	Prince Rupert
Ellis, D. Catherine	Vancouver	Hawkens, Lucill	Vancouver
Eng, Thomas	Victoria	Helders, Louise A.	Vancouver
Erickson, Gudrun I.	Whitehorse, Y.T.	Henderson, James S.	Vancouver
Errico, William W.	Vancouver	Hepburn, June F.	Vancouver
Estey, Robert M.	Vancouver	Hetherington, Robert F.	Victoria
Evans, Gerald E.	New Westminster	Hill, Frederick R. L.	Vancouver
Ewert, Katherine E.	Prince George	Hillier, Frances C.	Vancouver
Fagan, Mary S.	Hollyburn	Hipwell, John F.	Chilliwack
Farr, Robin M.	Vancouver	Hirtle, J. Gordon	Oliver
Ferguson, Donald C.	Vancouver	Hodges, June L. M.	Vancouver
Ferguson, Jean M.	Vancouver	Hodgson, Elizabeth J.	Vancouver
Field, Joan E.	Vancouver	Hogan, Lewis F.	Vancouver
Filberg, Robert McC.	Comox	Holman, T. David	Vancouver
Fitzpatrick, Robert C. D.	New Westminster	Holt, Dorothy M.	Vancouver
Fleatham, A. Stanley	Vancouver	Hopkins, C. Newton	Vancouver
Fleishman, Ruth E.	Vancouver	Horton, Beverley J.	Vancouver
Fleming, John B.	Vancouver	Housser, Jocelyn	Vancouver
Fletcher, Alan G.	North Bend	Howard, John M.	Vancouver
Foerster, Darryl K.	Nanaimo	Huene, Ralph	Coghlan
Forrest, Eve	Port Coquitlam	Hunt, Shirley M.	Vancouver
Fraser, David S.	Vancouver	Hyams, Gordon G.	Vancouver
		Idsardi, William F.	Vancouver
		Ingram, Maurice S.	Cloverdale

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

Name	Home Address	Name	Home Address
Ireland, Mary H.	New Westminster	Margeson, Ross D.	Nanaimo
Jacobson, G. A. Ellina	Cloverdale	Marisco, Maurice A.	Vancouver
James, Herbert	Vancouver	Martin, Deirdre	Vancouver
Jeffery, C. Barrie	North Vancouver	Martin, Russell G.	New Westminster
Jeffery, Mary-Lou E.	Vancouver	Marx, Samuel B.	Vancouver
Jensen, Henning	Vancouver	Mason, Roy B.	Hope
Jenvey, Gerald J.	Vancouver	Mason, Stanley J.	Vancouver
Jerram, Jerrold	Nelson	Matheson, Verlie S.	New Westminster
Johnson, Richard F.	Vancouver	Matson, Herbert M.	Vancouver
Johnson, Robert	Vancouver	Mayne, Patricia E.	Vancouver
Johnston, I. Erling	Nanaimo	Medland, Kenneth H.	Ladysmith
Johnstone, Margaret McM.	Vancouver	Mee, Norma D.	Vancouver
Jones, Barbara M.	Vancouver	Meldrum, Donna G.	Bassano, Alberta
Jones, George A.	Vancouver	Melvin, David G.	Vancouver
Jones, Norman O.	Cloverdale	Menzies, John L.	Vancouver
Jones, Stanley C.	Vancouver	Mill, Ronald McD.	New Westminster
Jurisin, Betty R.	Vancouver	Miller, Hugh S.	Vancouver
Jutte, Audrey D.	Vancouver	Miller, Leonard G.	Kamloops
Keller, J. Robert	Vancouver	Mills, Ruth C.	Vancouver
Kelly, James	Merritt	Mitchell, Georgina H.	Vancouver
Kelsberg, Barbara J.	Vancouver	Mitchener, Morton	Vancouver
Kerr, Helen J.	Vancouver	Moen, Arvid E.	Nelson
Kerr, M. Janet	Vancouver	Morgan, David W.	Vancouver
King, Charles F. M.	Vancouver	Morris, Yvette M.	Vancouver
King, William N.	Vancouver	Morrison, Gordon MacL.	Vancouver
Kinnis, Claire W.	Vancouver	Moxon, Dorothy J.	Vancouver
Kirkaldy, John S.	Terrace	Mufford, William T.	Milner
Knoules, Jean E.	Grand Forks	Munn, Anne C.	Vancouver
Knutson, Alvin L.	Prince Rupert	Murdoch, John E.	Vancouver
Kolberg, Joseph	Vancouver	Murray, John S.	Vancouver
Konesky, Alfred	Vancouver	Murray, K. Isobel	Vancouver
Krmpotich, Michael E.	Vancouver	McAfee, George W.	Prince Rupert
Kuznitszoff, Michael N.	Vancouver	McAlpine, Elspeth	Vancouver
Laakso, Oliver A.	Vancouver	McBeath, Elizabeth E.	Golden
Lambe, Edward B. D.	Prince Rupert	McBride, Merwin	Vancouver
Large, F. Allan	Prince Rupert	McCallum, Joan M.	Vancouver
Lawson, Robert D.	Vancouver	McCallum, Mary F.	Vancouver
Lechtzier, Merton R.	Vancouver	McCcoll, Donald J.	Alberni
Leddy, J. Leland	Vancouver	McCorkell, Jean C. C.	Vancouver
Lee, Edmond J.	Vancouver	McCrossan, Robert G.	Vancouver
Lee, Jone K. D.	Prince Rupert	McCurdy, D. Kenneth	Vancouver
Leitch, Alexander H.	Vancouver	McCusker, Thomas	Vancouver
Leith, William C.	Kimberley	McCutcheon, David J.	Vancouver
LePage, Derek G.	Vancouver	McDonald, A. Grace	Vancouver
Lessard, J. Irene	Maillardville	MacDonald, Donald A.	New Westminster
Levey, A. David	Vancouver	MacDonald, Douglas K.	Vancouver
Lewes, Alan S.	Summerland	MacDonald, Janet McL.	Vancouver
Lewis, David K.	Nanaimo	McDonald, M. Frances	New Westminster
Liddell, Constance A.	Vancouver	Macdonald, Nancy K.	Penticton
Liemens, Helen L.	Vancouver	McDonald, Norval M.	Eburne
Lim, Herbert	Vancouver	McDonald, Roma F.	New Westminster
Lind, Harold H.	Vancouver	MacDonald, Ronald R.	Cranbrook
Lipsett, Frederick R.	Vancouver	MacDonald, Ruth E.	Salmon Arm
Lipson, Margaret	Vancouver	McDonough, James E.	Vancouver
Livingston, Margaret E.	Vancouver	McDougall, Edna M.	Penticton
Lock, John B.	New Westminster	McEwan, Kenneth J.	Vancouver
Lockyer, Marjorie L.	Vancouver	MacFarlane, V. Jean	New Westminster
Longon, W. Bruce D.	Vancouver	McGinnis, Kenneth J.	Waldo
Lotzkar, Helen	Vancouver	MacGowan, Barbara R.	New Westminster
Lougheed, Henry V.	Kaslo	McGregor, Verna G.	Vancouver
Louie, Helen	Vancouver	McGregor-Eadie, Peter	Vancouver
Low, Raymond	Vancouver	McGuigan, Gerald F.	Vancouver
Lubzinski, F. James	Steveston	McGuire, Janet A. K.	Vernon
Lyons, E. Hugh	Vancouver	McIntosh, N. Jean	Trail
Mah, Lincoln J.	Vancouver	MacKenzie, Ian	Vancouver
Malcolm, Robert A.	Quesnel	McLeish, Glenna G.	Vancouver
Manley, Barbara E.	Vancouver		
Manning, Valerie J.	Vancouver		
Marak, Peter	Vancouver		
Mare, Philip D.	Vancouver		

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

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
McLellan, Gordon N.	Loco	Rithaler, Edward P.	Eburne
McLelland, David G.	Vancouver	Roberts, Harry T.	Eburne
MacLeod, A. Shirley	Vancouver	Robertshaw, Arthur M.	Vancouver
MacLeod, Donald M.	Vancouver	Robertson, Alexander L.	Vancouver
MacLeod, Dorothy M.	Vancouver	Robertson, James D.	Ladner
McLeod, Mary L.	Vancouver	Robertson, Murdoch R.	Vancouver
MacMillan, Jean L.	Vancouver	Robertson, Philip W.	Port Alberni
McNally, Edward E.		Robinson, Malcolm C.	
	Lethbridge, Alberta		New Westminster
McNaughton, Robert H. F.	Vancouver	Robinson, Theodore J.	Vancouver
McPherson, Kenneth F.	Vancouver	Roddan, Esther J.	Vancouver
Nagle, Gertrude H.	Nelson	Roddick, James A.	White Rock
Nairne, G. Alastair	Vancouver	Rodenchuk, Eugenia	Eburne
Nelson, Samuel J.	Vancouver	Rose, Margaret A.	Vancouver
Nemetz, Milton M.	Vancouver	Rose, Thomas F.	Vancouver
Newman, Gerald M.	Vancouver	Rose, William E.	Vancouver
Nicholson, Henry D.	Vancouver	Rosen, Linda C.	Vancouver
Nicholson, Katherine M.	Golden	Ross, Robert D.	Vancouver
Nickols, C. Edmund	Vancouver	Rowell, Dorothy M.	Vancouver
Nieuwdorp, John L.	Vancouver	Roy, Ernest A.	Vancouver
Noble, George R.	Vancouver	Runnalls, M. Jean	Prince George
Nordan, Harold C.	New Westminster	Russell, Charles H.	Vancouver
Northrop, David N.	Vancouver	Russell, Ethel M.	Vancouver
Orasuk, Frank A.	Oyama	Russell, L. Joyce	Vancouver
Ostrosser, Betty T.	Vancouver	Rutledge, Robert E.	Vancouver
Oxley, Mary H.	Vancouver	Salter, Patricia M.	Vancouver
Page, Dorothy C.	Galiano	Sanderson, Joy E.	Vancouver
PappaJohn, Agnes H.	Vancouver	Sawers, Norman M.	Vancouver
Parker, Mary E.	Merritt	Schoening, M. Allan	Penticton
Parsons, Terence R.	Prince Rupert	Schofield, Frances L.	Vancouver
Patterson, George	Nanaimo	Scott, George D.	Vancouver
Paul, Frank	Kelowna	Scott, K. Elizabeth	Vancouver
Paul, Yvonne L.	Vancouver	Scott, William M.	Hope
Paulik, Edgar	Brighouse	Scrivener, Shirile P.	Vancouver
Peacock, James R.	Vancouver	Sedroff, Nina	Vancouver
Pearson, William M.	Vancouver	Seggie, J. Morris	Vancouver
Pegues, Josiah J.	Horsefly	Segur, Delphine C.	Revelstoke
Peirson, George F.	Vancouver	Semler, Wilfred A.	Chilliwack
Pellicano, Joseph	Penticton	Senay, Charles M.	New Westminster
Peltz, Konrad J.	Carmel, California	Seymour, Jane D.	Vancouver
Penson, Norman	Vancouver	Shepherd, Ethel B.	Steveston
Perrault, Robert H.	Vancouver	Shields, Lila M.	Eburne
Peters, Margery D.	Vancouver	Siddoo, Jagdis	Vancouver
Peterson, Earl R.	Chilliwack	Siddoo, Sarjit	Vancouver
Phare, G. Rowland	Vancouver	Sigalet, Harold J.	Lumby
Phelan, Mary E.	Vancouver	Sim, John P.	Vancouver
Pilkington, Lawrence		Slater, Mary	Vancouver
	New Westminster	Smith, Donald A.	New Westminster
Pillman, Raymond A.	Sointula	Smith, J. Leonore	Vancouver
Pinson, William E.	New Westminster	Smith, Leslie F.	Vancouver
Player, Glen W.	Vancouver	Smith, Lorne S.	Vancouver
Plenderleith, E. Mavis	Nanaimo	Smith, M. Bruce	Vancouver
Plimley, Basil P.	Vancouver	Smith, William H.	Vancouver
Pollock, William O.	Duncan	Smithman, D. Leverage	White Rock
Porter, Lawrence J.	Whitehorse, Y.T.	Soros, Knute	New Westminster
Poulos, John	Vancouver	Spargo, Gwendolyne M.	Vancouver
Powell, Pauline	Vancouver	Stacey, H. Elizabeth	Vancouver
Pringle, William L.	Kamloops	Steiner, Irene R.	Vancouver
Ptolemy, Ron A.	Vancouver	Stewart, William D.	Vancouver
Quick, Beverly C.	Squamish	Stone, David R.	Vancouver
Radford, Hugh W.	New Westminster	Stouse, Dennis L.	Vancouver
Redpath, William E.	Vancouver	Sutherland, Douglas D.	Vancouver
Reece, Gwynneth E.	Westbank	Tait, David H.	New Westminster
Reid, Agnes	New Westminster	Tate, Wilson W.	Vancouver
Reid, Alexander R.	Vancouver	Taylor, Chester C.	Vancouver
Reid, Dianne E.	Vancouver	Taylor, James W.	Abbotsford
Reid, Terrance M.	Chase	Taylor, M. Doreen	Vancouver
Rennie, Jean M.	Vancouver	Taylor, Ralph E.	Vancouver
Renouf, Ernest E.	Mission City	Thomas, Ethel B.	Vancouver
Ritchie, Gordon J.	North Vancouver	Thomas, Raymond B.	Eburne

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

Name	Home Address	Name	Home Address
Thomasson, Averilla K.	Vancouver	West, Donald R.	Castlegar
Thomson, W. Audrey	New Westminster	White, Anna L.	Vancouver
Tolhurst, Edward	Westbank	White, Joseph F.	Vancouver
Torrance, Ethel E.	Kimberley	Whitehead, Calvin J.	Vancouver
Toynbee, Richard M.	Ganges	Whittaker, William G.	Youbou
Traer, Dolores R.	Cowichan Lake	Widman, Charles R.	Vancouver
Trethewey, Helen C.	Vancouver	Wiggins, Murray M.	Vancouver
Turko, Laurie W.	Vancouver	Wilkinson, Margaret C.	Vancouver
Turnbull, Frances P.	New Westminster	Williams, Dorothy E. D.	Vancouver
Turner, John J.	Vancouver	Williams, Robert C.	Vancouver
Turner, Raymond B.	Vancouver	Wilson, Barbara R.	Vancouver
Turner, Verne	Vancouver	Wilson, Donald D.	Vancouver
Turney, Harry D.	Vancouver	Wilson, Eric P.	Vancouver
Twizell, Barbara	Vancouver	Wilson, Isabel A.	Vancouver
Vance, C. Edith W.	Vancouver	Wilson, Lawrence L.	Vancouver
Vandrick, S. John A.	Chilliwack	Wilson, Mary T.	Hollyburn
Varty, Ann B.	Vancouver	Wilson, Robert W.	Vancouver
Vaughan, Margaret	Vancouver	Winn, Elizabeth M.	Juneau, Alaska
Vaughan, Margaret K.	Vancouver	Winter, E. Walter	Port Alberni
Velay, Charles	Maillardville	Winter, Wallace H.	Port Alberni
Vlag, Ann M. A.	Matsqui	Withler, Isabel A.	Boston Bar
Vosper, Catherine E.	Vancouver	Wolfram, Gordon	Eburne
Walker, Murray K.	Vancouver	Wong, Coy	Vancouver
Walker, Robert E.	Vancouver	Wong, Vivian M.	Vancouver
Wallace, Robert R.	Calgary, Alberta	Wood, William S.	Vancouver
Walton, Vivian M.	Vancouver	Woodhouse, Donald R.	Victoria
Wardle, M. Eunice	Vancouver	Woodman, Mabel E.	Vancouver
Watson, Waverlie A.	Vancouver	Worsfold, David	Oliver
Watt, Marjorie	Vancouver	Wright, Evelyn M.	Steveston
Watters, James A.	Vancouver	Wright, Margaret	Rossland
Weaver, Kenneth F.	Vancouver	Wyatt, Robert C.	Vancouver
Weber, Robert G.	Vancouver	Yates, Douglas E.	New Westminster
Weber, Robert G.	Vancouver	Young, Archibald D.	Vancouver
Weber, Robert G.	Vancouver	Zimich, Leonard	New Westminster
Webster, David J.	Trail	Zitko, Henry	Vancouver
Wells, John R. H.	Vancouver	Zubek, John P.	Grand Forks

HOME ECONOMICS

FIRST YEAR

Allman, Mary B.	Vancouver	Macindoe, Helen J.	Powell River
Berry, Helen E.	Langley Prairie	Marshall, Ellen V.	Ocean Falls
Bridge, Sharon McK.	Steveston	Mehan, Betty-Louise	Vancouver
Christie, Margaret S.	Vancouver	Mjos, Lillian	New Westminster
Coulter, Maureen A.	Vancouver	MacAskill, Barbara J.	Vancouver
Diamond, Rita	Vancouver	MacGillivray, Verda I.	Vancouver
Frith, Margaret A.	Vancouver	McGlashan, Pamela D.	Vancouver
Gaff, Beryl A.	New Westminster	McKenzie, Jean B.	Vancouver
George, Catherine B.	Vancouver	McRae, Mildred D.	Mission City
Hayes, Dorothy W.	Vancouver	Nation, Elizabeth J.	Vancouver
Hill, Shirley J. E.	Vancouver	Rathlef, Elizabeth I.	Nanaimo
Hollingum, Betty B.	Vancouver	Simpson, A. Barbara	Vancouver
Horen, Anita E.	Vancouver	Siscoe, Margaret C. (Mrs.)	Vancouver
Kendall, Fredda J.	North Vancouver	Symonds, Ann P.	Vancouver
King, Kathleen F.	Vancouver	Wallace, Ardath S.	West Vancouver
Lake, Yvonne M.	Vancouver	Wilson, H. Rosemary	Peachland
Leach, Shirley A.	Vancouver	Wilson, Lorna M.	Calgary, Alberta
Lord, M. Helen	Vancouver	Wilson, M. Jean	New Westminster

FACULTY OF ARTS AND SCIENCE

SECOND YEAR

Adie, Isabel	New Westminster	Alexandor, Evelyn	Vancouver
Ajello, Eric A.	Hollyburn	Anderson, Joyce	Vancouver
Ajello, Peter A.	Vancouver	Angove, Edith	Chapman Camp
Alderdice, Donald F.	Vancouver	Ashmore, Phillip G.	Bralorne
Alexander, Robert F.	Vancouver	*Axford, Patricia J.	Port Moody

*Conditioned.

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

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Baldwin, William F. G.	Vancouver	*Disher, Irwin S.	Vancouver
*Ball, Marian	Vancouver	Dobbin, M. Mary	Westbank
Banford, Frederick W.	New Westminster	Done, Dorothy M.	New Westminster
Bartholomew, M. Yvonne	North Vancouver	Down, David C.	Burnaby
Barton, George M.	Vancouver	Dundas, Marion I.	Hollyburn
Beech, Emma L.	Vancouver	Dunford, Fred A.	Vancouver
Bell, William M.	Vancouver	*Edwards, Inglis W.	Vancouver
Belton, Nancy K.	Ioco	Elley, Jean E.	Brighouse
Bertrand, Jean F. (Mrs.)	Vancouver	Ellis, David N.	Abbotsford
Birmingham, W. Pattison	Vancouver	*Ells, Agnes E.	Blubber Bay
Bishop, Frank L.	Vancouver	Ewing, Frances M.	Vancouver
Bluechel, Allan J.	Vancouver	Fairbairn, Frances M. M.	Vancouver
*Blunden, C. M. Denis	Vancouver	Fairleigh, Dorothea C.	Vancouver
Bogue, Laurence J.	Lynn Creek	Farmer, Jack F.	Vancouver
Borgerson, M. Patricia	Vancouver	Faulkner, Leone C.	Kelowna
Brockman, A. MacKenzie	Kindersley, Sask.	Ferguson, Marion A.	Chilliwack
*Brown, Catherine E.	Vancouver	Flavelle, Sidney S.	Vancouver
Brown, E. Ann	Vancouver	*Fleetwood, Cecelia C.	Cowichan Station
Brown, Helen M.	Vancouver	*Fleming, Raymond W.	Holden, Alta.
Brown, Martin L.	Vancouver	Flesher, Mary F.	New Westminster
Bryer, Edith M.	New Westminster	Fowler, Evelyn M.	Vancouver
Buchanan, Audrey J.	Vancouver	*Fowler, Richard W.	New Westminster
Bulger, T. D. Clement	Vancouver	Francis, M. David	Redonda Bay
Bullen, Charles F.	Vancouver	*Gardom, Gardy B.	Vancouver
Bunker, Jacqueline L.	Vancouver	Garrard, Audrey	Vancouver
Burnham, G. Alan	Vancouver	Gibson, M. Ethel F.	Chilliwack
Calder, Sheila H.	New Westminster	Gillis, John G.	Merritt
*Campbell, Annette V. L.	Vancouver	Gilmore, John W.	Vancouver
Canty, J. Leslie	Vancouver	Giovando, Laurence F.	Vancouver
Carey, Lewis S.	Port Washington	*Goldberg, Arthur H.	Vancouver
Carre, Hilary M.	Westbank	Goldberg, Harry	Vancouver
Carrothers, Alfred W. R.	Vancouver	Grant, Phyllis F.	Vancouver
Carter, David S.	Vancouver	Gray, Duncan S.	Trail
Carter, Philip A.	Vancouver	Gray, Jean K.	Vancouver
Caulderwood, Joan M. D.	Abbotsford	*Gregorak, William	Vancouver
Chenoweth, Patricia M. C.	Vancouver	Guichon, Bernard G. E.	Quilchena
Christie, Hugh G.	Port Coquitlam	Hagen, John	Kimberley
Chu, Dodd Q.	Vancouver	Haggart, Elnor G.	Vancouver
Clancy, Gerardine A.	Vancouver	Halpin, Kathleen B.	Kimberley
Clarke, Joan L.	Vancouver	Hamilton, Joan M.	Vancouver
Clayton, Blanche P.	Victoria	*Hammond, Edith F.	Dawson, Y.T.
Codrington, Robert S.	Vancouver	Hanley, John G.	Vancouver
*Collishaw, Felicity	Capilano	*Hanna, John M.	Vancouver
Colquhoun, J. Lenore	Penticton	Hardy, Ruth E.	Vancouver
*Conway, Marie M.	Vancouver	*Harkness, Elizabeth W.	North Vancouver
*Cools, Adrienne E.	Okanagan Centre	Harkness, Wesley McK.	Vancouver
Cooper, William E. H.	Vancouver	Harris, Gordon R.	Vancouver
Copp, Marian E.	New Westminster	Harris, M. Julienne	Vancouver
Couling, Phyllis M.	Vancouver	*Hatt-Cook, Joseph	New Westminster
Crease, Audrey A.	Vancouver	Hebb, Marion C.	Vancouver
*Crowe, Bert M.	Vancouver	Henderson, Clarence R.	Faulkland
Culter, Barbara A.	New Westminster	Henderson, J. Neil	Kelowna
*Cutler, Ryllys M.	Allenby	Hickey, Gordon R.	Saskatoon, Sask.
Dalawrak, Elsie E.	Vegreville, Alta.	Hofmann, William G.	Vancouver
Dale, Grant E.	North Vancouver	Holland, John G.	Vancouver
Daly, Elinor J.	Penticton	Holmgren, Eric J.	Nelson
*Davey, Grant McC.	Vancouver	Holoboff, Nicolai A.	Rossland
Davies, Donald H.	Calgary, Alta.	Houston, W. Drummond	Tuxford, Sask.
Davis, Richard N.	Vancouver	Hughes, Richard D.	Vancouver
Davy, I. Sheila	New Westminster	Hulford, Edward J.	Victoria
Daykin, Harold C.	Vancouver	Ingalls, Lucille P.	New Westminster
Deas, Catherine P.	Vancouver	Jardine, Judith	Vancouver
DeBeck, Myra E.	Vernon	Johnson, Caroline L.	North Vancouver
deGrace, Lawrence A.	Big Valley, Alta.	*Johnson, Roland W.	Vancouver
DePencier, Edith Mary	Vancouver	Johnston, Ellen R.	Vancouver
Dewdney, Pamela R.	Nelson	Johnston, Joan	Cloverdale

*Conditioned.

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

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Jones, Arthur F.	Vancouver	Maclaren, Nancy A.	Oyama
Jones, Netta	Victoria	MacLean, J. Ross	Vancouver
Kabush, Harry	Vancouver	*Maclean, Kenneth N.	Greenwood
Katznelson, Edith	Vancouver	McLennan, H. Ann	Vancouver
Keast, Russell R.	Vancouver	*McLeod, Doreen L.	Vancouver
Keats, Reva C. A.	Vancouver	McLeod, Hugh N.	Victoria
Keeble, Raymond C. W.	Vancouver	*MacLeod, Norman P.	Milner
Kelly, James	Kimberley	McMartin, Donald C.	Vancouver
Kennedy, John S.	Vancouver	Nager, Dorothy D.	Calgary, Alta.
*Kennelly, Raymond J.	Vancouver	*Nastich, Milan	Brighouse
Kervin, Ronald H.	Marysville	*Nichols, Dorothy I.	Vancouver
Kilet, Cynthia M.	Vancouver	Nickells, Robert G.	Oak Bay
Killam, Ruth M.	Vancouver	Nielson, Alfreda M.	Vancouver
Killas, Kosta J.	Prince Rupert	Noble, John G.	Victoria
*Killick, Kathleen F.	Vancouver	Nordin, Vidar J.	Eburne
King, E. Ilene N.	Vancouver	Norton, Mary A.	Vancouver
Klopp, Thomas A.	Cloverdale	*Nutchey, Harry	Powell River
Koerner, Nicholas T.	Vancouver	Oben, Jean D.	Lasqueti Island
Lamb, Margret M.	Vancouver	Olson, Beatrice E.	Westview
Lang, Frank A.	Vancouver	Ozeroff, Michael J.	Shoreacres
Larson, Vernon E.	Aldergrove	Pallas, Ethel	Vancouver
*Lavallee, John N.	Edmonton, Alta.	Paperny, Juliette	Calgary, Alta.
Lawson, Richard W.	Powell River	Parker, Margaret J.	Vancouver
Lazareff, Anne E.	Shoreacres	Parry, Kenneth J.	Vancouver
Leckie, Jean F.	Vancouver	Paulin, William P.	Vancouver
Lee, Glenna L.	Vancouver	Pedlow, Kenneth D.	Vancouver
Lee, Rosemary M.	Vancouver	Peele, Rohan F. M.	Vancouver
Lew, Anne	Vancouver	Peers, Arthur MacK.	Vancouver
Lidstone, John F. K.	Kamloops	*Pepper, David R.	Vernon
Lindow, Maxine L.	Salmo	Peterson, Nancy F.	Burnaby
Lindsay, R. Keith	Vancouver	Petrie, Don J. McK.	Vancouver
Lopez, J. Mauricio	San Salvador	Phillips, Jacquelyn N.	Vancouver
*Lowrie, David A.	Vancouver	Phillips, Randolph D.	Capilano
Loyd, Alisen G. (Mrs.)	New Westminster	Piderman, Rene J.	Port Coquitlam
Mah, Eva	Vancouver	Pirani, Felix A. E.	Vancouver
Manzer, Nobel R.	Vancouver	Pitman, Nancy M. A.	Sherman
Margach, John A.	Comox	Poje, Tony J.	Nanaimo
Marshall, Warren E.	Vancouver	Folson, Robert C.	Vancouver
Martin, Muriel E.	Vancouver	Poore, Dorothy E.	Vancouver
Martinson, Muriel E.	North Vancouver	Porter, Moya M.	Victoria
Matheson, Betty J.	Vancouver	Pudney, Peter H.	Vancouver
*Milledge, Bernard A.	New Westminster	Quaite, Jack	Kamloops
Miller, C. David	Sardis	Radcliffe, Margaret	Vancouver
Mitchell, James A. W.	Banff, Alta.	Rae, Jean M.	Victoria
Moll, Joyce E. M.	Vancouver	Reid, Douglas C.	Vancouver
Molloy, Philip A.	Victoria	Reid, June C.	Vancouver
Mooney, Henry C.	Vancouver	Reimer, David P.	Sardis
Moore, D. Eileen	Vancouver	Richards, Joan A.	New Westminster
Morris, Philip A.	Vancouver	Rietchel, Patricia	Vancouver
Morton, Kenneth S.	New Westminster	*Ripley, Mary E.	New Westminster
Moyls, F. David	Vancouver	Roberts, L. Margaret	Vancouver
Mundell, John D.	Vancouver	Robson, Marita H.	Vancouver
Murphy, J. Byron	Vancouver	*Rockson, Paul	Langley Prairie
McBride, Leonard R.	Vancouver	*Rose, Frederick M.	Lethbridge, Alta.
McConnell, John A.	Vancouver	Ross, A. Elizabeth	Vancouver
McConville, Louise	Vancouver	Ross, John D.	Vancouver
McCubbin, William D.	Vernon	Rothstein, Morton	Vancouver
McDonald, Isabel G.	Ocean Falls	Roulston, Aline M.	Vancouver
*Macdonald, Malcolm A.	Vancouver	*Sager, S. Murray	New Westminster
McFarlane, Alexander W.	Vancouver	Sanford, Malchia E.	Vancouver
McFarlane, Allan A. J.	Vancouver	Saunders, Genevieve M.	Alberni
McIntosh, Phyllis J.	Vancouver	Saunders, Marybeth	North Vancouver
McKenty, J. Mary	Vancouver	Savard, Daisy, J. I.	Fraser Mills
Mackenzie, J. Conrad	Vancouver	Schatz, James H.	Milner
MacKenzie, Kenneth R.	Vancouver	*Schneidmiller, Vernon	Vancouver
McKim, Audrey E.	Vancouver	Schulz, Godfrey	Milner
		*Scott, Roy	Vancouver
		Shields, Lorna M.	New Westminster
		Siemens, Abraham W.	Vancouver
		Silver, Lorna M.	New Westminster

*Conditioned.

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

Name	Home Address	Name	Home Address
Sinclair, Jean G.....	White Rock	Vance, M. Jacqueline	West Vancouver
Sinclair, Jean L.....	Victoria	Veeberg, Ruth E. M.....	Cranbrook
Skipsey, J. Leslie.....	Alberni	Wainwright, John W.....	Abbotsford
Smart, Catherine J.....	Vancouver	Wakelynn, Morris.....	Vancouver
Smith, Dorothy B.....	Vancouver	Walden, Phyllis S.....	Vancouver
Smith, Dorothy E.....	Vancouver	Warren, Marjorie I.....	Vancouver
Smith, Elsie M.....	Vancouver	Wasylikow, Walter C.....	New Westminster
Smith, Helen L (Mrs.)	Vancouver	Weber, Ronald J.....	Vancouver
Stacey, Iris.....	Vancouver	Welsh, Dorothy A.....	Vancouver
Stacey, May.....	Vancouver	Wescott, J. Patrick.....	Vancouver
*Stamatis, John T.....	Vancouver	Weston, S. Bernard.....	Burnaby
Standeven, Rita D.....	Vancouver	White, Pamela B.....	Chilliwack
*Steele, Marjorie M. Lethbridge, Alta.		White, Patrick C. T.....	Vancouver
Stevenson, B. Kyle.....	Port Coquitlam	White, Roy.....	Eburne
Stewart, Ross.....	Vancouver	Whowell, Fred.....	Kelowna
*Stockand, Marian G.....	Banff, Alta.	*Willcox, John A. North	Vancouver
Stokes, John W.....	Cowichan Station	Williams, Asa S.....	North Vancouver
Stone, Dorothy I.....	Vancouver	Williams, Murray G.....	Vancouver
Stowe, Norma M.....	New Westminster	Wilson, Donal S.....	Vancouver
Strachan, Jessie.....	Vancouver	*Woodland, Arthur G.....	Vancouver
*Street, Charles R.....	Vancouver	Worth, Helen C.....	Vancouver
*Sully, S. Allan.....	Cloverdale	Wright, Alexander McB.....	Vancouver
Thomas, Blodwen.....	Vancouver	*Yeasting, Robert W.....	Vancouver
Thompson, A. Kenneth.....	Vancouver	Yeo, Shirley Anne A.....	Vancouver
*Thompson, S. Elizabeth.....	Vancouver	Young, Diana R.....	Vancouver
Thomson, P. Grahame.....	Vancouver	Zack, David.....	New Westminster
Todd, Harold B.....	Vancouver	Zahar, Edward.....	Vancouver
†Tuffeland, Jack W. Lethbridge, Alta.			
Tunbridge, Marjorie A.....	Vancouver		

COMMERCE—SECOND YEAR

Adams, Donald K.....	Vancouver	*Grant, Patricia, M.....	Vancouver
Ainsworth, Allan H.....	Vancouver	Guimont, Margaret M.....	Penticton
Aqua, Harry.....	Vancouver	Hacking, G. William.....	Vancouver
Bakken, Ole.....	Vancouver	Hamilton, William T.....	Westview
Barrows, C. Frederick.....	Cloverdale	*Hammersley, Donald W.	Vancouver
Batt, Jacqueline A.....	Vancouver	Hayward, Gilbert J.....	Kamloops
Beddome, Jean H.....	Vernon	Hill, William McC.....	West Vancouver
Begert, H. Kendall.....	Vancouver	Johnston, Roy F.....	Vancouver
Bennet, Margaret K.....	Vancouver	*Jones, R. Bruce.....	Vancouver
Black, Runa A.....	Vancouver	Lowrey, Ray.....	New Westminster
Blair, Olive M.....	Vancouver	Miller, R. S. Garry.....	Vancouver
*Bond, William E.....	Prince Rupert	*Minty, John E.....	Vancouver
Boshier, Stanley S.....	Vancouver	*Morris, Robert A.....	Vancouver
Carmichael, John D. Edmonton, Alta.		MacKinnon, John.....	Vancouver
Clifford, Richard L. T. Donald, Alta.		McLeod, Donald T.....	Vancouver
Day, M. June.....	Kamloops	McRae, Duncan.....	Prince Rupert
Dennis, Melvin W.....	Vancouver	O'Brien, William J.....	Vancouver
Duncan, Helen J.....	Vancouver	*Olliver, John F.....	Vancouver
Edwards, Gilbert J. T.....	Vancouver	Peacock, Robert C.....	Trail
Fieldhouse, Roger H.....	Vancouver	*Redford, Catherine M.....	Vancouver
*Fisher, Thomas K. New Westminster		Smith, Arthur B.....	Calgary, Alta.
*Forbes, Jack A.....	Revelstoke	Trefry, Ethel.....	Vancouver
*Ford, Norma E.....	Chilliwack	Urquhart, Doreen B.....	West Vancouver
Gilley, Gordon R.....	Vancouver	Ward, Peter A.....	Calgary, Alta.
*Gladstone, William B.....		Watt, Nancy W.....	Vancouver
	Winnipeg, Man.	Williams, Marjorie E.....	Blubber Bay

HOME ECONOMICS—SECOND YEAR

Adams, Geraldine G.....	Vancouver	Forbes, Mary A.....	Vancouver
Christopherson, Caroline G.....	Vancouver	Frostrup, Eilsha.....	Vancouver
	Vancouver	Gibbard, Margaret H.....	Okotoks, Alta.
*Clark, Esther M.....	West Vancouver	*Gulloch, Muriel I.....	Vancouver
Clark, M. Elspeth.....	Kimberley	Hammond, Mary E.....	Vancouver
*Cohen, Annette.....	Lethbridge, Alta.	Hayes, Beatrice M.....	Vancouver
Curnow, T. Bernice.....	Britannia Beach	Johnson, M. Maxine.....	Vancouver

*Conditioned. †Partial.

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

Name	Home Address	Name	Home Address
Katainen, Violet O.	Webster's Corners	Parks, Doreen M.	New Westminster
Laird, Daphne E.	Vancouver	Rogers, M. Elaine	Vancouver
Mason, Phyllis M.	Vancouver	Stead, Ursula	Victoria
Murphy, Gloria M.	West Vancouver	Turner, Winnifred R.	Vancouver
McEachern, Lillian M.	Vancouver	Weber, Marjorie E.	Vancouver
MacKenzie, A. Isabel	Vancouver	*White, Leslie A.	Chilliwack

FACULTY OF ARTS AND SCIENCE—THIRD YEAR

Abel, Robert B.	Vancouver	Ewert, Vaughan A.	Vancouver
Adutt, Peter S.	Vancouver	†Fairnie, Louise LaR.	Vancouver
Afleck, Edward L.	Vancouver	Falk, William A.	Vancouver
Airey, Frances M.	Eburne	*Farrell, Kathleen W.	Vancouver
*Almas, Gabriel	Vancouver	Fischer, Joan G.	Vancouver
Anderson, Elizabeth M.	Vancouver	Flanagan, John R.	Victoria
Appleby, Lyon H. T.	Vancouver	Forbes, M. Louise	Nelson
Armstrong, Kenneth S.	Vancouver	Franklin, Henry J.	Vancouver
Ashton, Harry E.	Vancouver	Franklin, Roy J.	Burnaby
Atkins, Eleanor	Steveston	Gallie, Norman P.	Rossland
Attree, Richard W. A.	Queen's Bay	Gardner, Claude W.	Vancouver
Aubrey, June L.	Vancouver	Goddard, Alice F.	Vancouver
Baker, Wallace R.	Vancouver	*Gooderham, M. Eleanor	Gleichen, Alta.
*Bales, Russel C.	Victoria	Gordy, John	Kimberley
Barraclough, William E.	Nanaimo	Graham, John E.	Vancouver
Barrett, L. Joan	Vancouver	Greene, Barbara H.	Vancouver
Baumbrough, Edna D.	Vernon	Greig, M. Nina	Victoria
Beale, Margaret F.	Vancouver	*Grieve, Annie C.	Vancouver
Behnsen, Thelma A.	Vancouver	Griffiths, David A.	Vancouver
Beltz, John E.	Vancouver	Gurvitz, Marcia R.	Vancouver
Bennett, Anne L.	Vancouver	Hamilton, J. Kelvin North	Vancouver
Bertram, Gordon W.	Vancouver	Harvey, James W.	Victoria
Black, A. Patrick	Vancouver	Hatter, James	Lake Cowichan
Blue, Velva J.	Biggar, Sask.	*Hibbert, Barbara	Mission
Boothby, Hortense W.	Mission City	Hillier, Chesley R.	Vancouver
Booth, Alan W.	Vancouver	Hitchen, Richard C.	Vancouver
Brown, Edward G.	Vancouver	Ho, Henry J.	Vancouver
Burke, Harold H.	Vancouver	Hodgson, Margaret A.	Vancouver
Burnett, Bruce K.	New Westminster	Holroyd, Louis V.	Vancouver
*Burney, Ross H.	New Westminster	Hood, Marjorie H.	Vancouver
Calam, A. Margaret	New Westminster	Huckerby, Fannie M. Kennedy	Sask.
Cameron, B. Beth	Vancouver	Hunter, J. Gerald	Vancouver
Campbell, Gordon Medicine Hat, Alta.		Inch, Beatrice E.	Vancouver
Campbell, Margaret A.	Vancouver	Ireland, Aldythe M.	Armstrong
Campbell, Nora V.	Vancouver	Irwin, Winnifred M.	Vancouver
Carlisle, Sheila J.	Vancouver	Jarman, Ernest A.	Vancouver
Carsell, Roberta W.	Abbotsford	*Johnsen, Hans P.	Rossland
Chatwin, Mary K.	Vancouver	Johnson, Arthur L.	Armstrong
Cherniavsky, John R. D.	Vancouver	*Jones, Myrtle M.	Cranbrook
Church, John S.	Victoria	Julian, Terence S.	New Westminster
Clark, Douglas P.	West Vancouver	Kanwischer, Friedrich	Vancouver
Cleland, R. Dick	Merville	Kazun, Walter, J.	Vancouver
*Clement, C. James	Kelowna	Keeves, Moira E.	Port Alberni
*Coady, Campbell J.	Vancouver	Kendall, Marie J.	Vancouver
Colclough, John R.	Vancouver	Kennedy, Harry K.	Chilliwack
Cole, Kathleen M.	Hollyburn	Kennedy, Irene M.	Vancouver
Constabaris, George	Vancouver	Kenny, Douglas T.	Victoria
Cootte, Arthur R.	Vancouver	Ketchen, Keith S.	Vancouver
Coulter, Shirley V.	Vancouver	Kinnaird, Ellen A.	Vancouver
Cowan, John	Vancouver	Kirkpatrick, Sheila W.	Vancouver
Craig, Marie I.	New Westminster	Kurth, Burton O.	Vancouver
Croll, Margaret F.	Vancouver	Lake, June M.	Vancouver
Cull, George N.	Duncan	Lam, Andrew	Vancouver
Dalrymple, Suzanne I.	Vancouver	Lawrence, Blair G.	Vancouver
Doyle, Irene V.	Trail	*Lees, Sylvia A.	Vancouver
Edwards, Beth E.	Vancouver	Leith, Anna R.	Vancouver
Embee, William H.	Kamloops	Liddell, Ruth B.	Vancouver
English, H. Edward	Victoria	*Livingston, Gertrude H.	Vancouver
Evans, Elizabeth	Roberts Creek	Lotzkar, Eva	Vancouver
*Evans, James W.	Vancouver		

*Conditioned. †Partial.

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

Name	Home Address	Name	Home Address
Louie, Edward	Vancouver	*Schwabe, Miriam F.	Victoria
Lowther, Roy A.	Britannia Beach	Scott, John T.	Vancouver
Lyons, Nancy-Lou	Powell River	*Service, Peter K. W.	Vancouver
Magee, William H.	New Westminster	Seyer, Anthony W.	Vancouver
*Manson, Marion MacT.	Vancouver	*Shaw, Melville H.	Vancouver
Manson, Russell J.	Vancouver	Sherratt, Betty M.	Vancouver
Martin, Mart.	Vancouver	Shopland, Stella	Vancouver
Maunsell, Charles D.	Victoria	*Simpson, Carl	Vancouver
Mayo, Eleanor G.	Vancouver	Sloan, Barbara J.	Victoria
Merry, Margaret G.	Victoria	Smellie, Elsie L.	Vancouver
*Metro, John	Victoria	Smith, Barbara A.	Victoria
Miller, Gregory	Prince Albert, Sask.	Smith, P. Anne	Vancouver
†Milne, John E.	Vancouver	Staley, Ruth M.	Calgary, Alta.
Mitchell, James G.	Vancouver	Stamatis, D. Patricia	Vancouver
Musfelt, Iola W.	Vancouver	Stevens, J. Earl	Vancouver
McBay, Robert R.	Vancouver	Stewart, Ann M.	Vancouver
McCabe, M. Margaret	Vancouver	Stewart, Rosemary G.	Vancouver
MacCulloch, Armelda A.	Comox	Stonhouse, Alice H.	Vancouver
McGhee, Margaret G.	Port Alice	Stothers, John H.	Vancouver
McGregor, George A.	Vancouver	Sutherland, Herbert W.	Vancouver
*McKillip, Eileen	Vancouver	Thomas, Wallace J.	Vancouver
McLaren, Ada L.	Vancouver	Thompson, Harry	Burnaby
McLeod, Donald C.	Victoria	Thompson, William B.	Victoria
MacLeod, Margaret H.	Vancouver	Thumm, Walter	Vancouver
*MacLeod, P. Arnold	Vancouver	Tierney, Letitia M.	Vancouver
MacNeill, Roy D.	Vancouver	Trumbull, Mary F.	Vancouver
Macpherson, Barbara W. M.	Vancouver	Tufts, Aileen M.	Vancouver
McPherson, Charles J.	Vancouver	Van De Putte, Madeline L.	Aldergrove
McPherson, Hugh J.	Vancouver	Van Gorder, C. Julia	Vancouver
Nalos, Erika M.	Vancouver	Veitch, E. Bruce	Vancouver
Nash, Morley E. B.	Vancouver	Vincent, Vivian A.	Gang Ranch
*Naughton, Charles J.	Vancouver	Wahl, Edward	Kelowna
Neilson, James S.	Vancouver	Waldie, Adam C.	Rossland
*Nelson, Faith E. (Mrs.)	Vancouver	Waldie, R. Arthur	Rossland
Ney, Phyllis W.	Vancouver	Walker, William G.	Vancouver
Nickerson, Ara (Mrs.)	Vancouver	Wallace, William J.	Vancouver
*Norris, Mary F.	Vancouver	Walsh, Isabel E.	Vancouver
*Ogren, Arthur	Haney	Walther, Garth L.	Victoria
O'Neill, John J.	Kimberley	Walton, M. Elizabeth	Bralorne
Ore, Elizabeth J.	Chapman Camp	Watson, Carol R.	Victoria
Ostle, Bernard	Vancouver	Watson, Harry N.	Vancouver
Palmer, Russell E.	Vancouver	Watson, Marian I.	Vancouver
Parker, Douglas G.	New Westminster	Watts, William B.	Vancouver
Parker, H. Victor	Taber, Alta.	Weeks, Donald J.	Vancouver
*Paterson, Kathleen M.	Vancouver	*Wellwood, Margo C. (Mrs.)	Vancouver
Pearce, Irene S.	New Westminster	*Wener, Robert A.	Vancouver
Pettit, Allison B.	Vancouver	*Westlake, C. Alfred	Victoria
Pilmer, Margaret	Victoria	Whelan, Patricia R.	Vancouver
*Pitts, Harry	Vancouver	White, E. Jean	Vancouver
Pridham, Jean B.	Creston	White, Loise A.	Vancouver
Pritchard, Phyllis E.	Victoria	White, Ruth L.	Vancouver
Pronger, Ivy R.	Vancouver	Whittemore, Thomas E.	Victoria
Quan, Mary	Vancouver	*Willcox, Edward C.	North Vancouver
Quebec, Mona B. G.	Vancouver	Williams, W. James	Vancouver
*Ralston, Donald J. C.	Vancouver	Wilson, Margaret M.	Calgary, Alta.
Reid, Catherine L.	Vancouver	Wilson, Atholl L.	Vancouver
Reston, Mary McD.	Vancouver	Winch, Eric W.	New Westminster
Robinson, Joyce M.	Mt. Lehman	Withler, Frederick C.	Boston Bar
Robinson, Robert J.	New Westminster	Wood, Juanita E.	Vancouver
Rodgers, M. Joan	Vancouver	Wyatt, Gerard R.	Victoria
*Saba, Albert	Vancouver	*Yard, W. Edward	Vancouver
*Sanders, John L.	North Vancouver	*Yip, Cecil E.	Vancouver
*Saunders, Marjorie A.	Invermere	*Yorke, G. Bruce	Vancouver
Sceats, Donald J.	Victoria		

COMMERCE—THIRD YEAR

Aitken, Evelyn M.	Victoria	Bell, Barbara A.	Vancouver
Alexander, Robert	Vancouver	Bennett, Cyril J.	Abbotsford
Allison, George W.	Hollyburn	Black, Norman J.	Vancouver

*Conditioned. †Partial.

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

Name	Home Address	Name	Home Address
Brookes, Miles G.	New Westminster	Morritt, Harry H.	Vancouver
Burke, Brian E.	High River, Alta.	McCarter, William K.	Victoria
Cameraman, Margaret	Vancouver	McDonald L. Marion	New Westminster
Chambers, Edward J. S.	Vancouver	McKercher, R. John	Burnaby
Cotter, H. B. Chester	Victoria	*MacMillan, Alan U.	Vancouver
*Coyle, Patricia	Vancouver	Nicolls, Joan G.	Vancouver
Creighton, Kenneth D.	Vancouver	Paulin, M. Elizabeth	Vancouver
Cunningham, Patricia M.	Vancouver	*Payson, Dorothy B.	Vancouver
Glenesk, Alfred H.	Vancouver	Phelps, James W.	Vancouver
Guy, Beverly E.	Vancouver	Porteous Stuart W.	Vancouver
Hardy Gordon P.	Vancouver	Prior, Dennis C.	New Westminster
High, Robert L.	Vancouver	Raphael, Leslie A.	Vancouver
Hole, Leonard W.	Vancouver	Renwick, F. Elizabeth	Vancouver
Johnson, G. Arnold	Vancouver	Smith, Marjorie C. L.	Vancouver
Korsch, Stanford	Vancouver	*Still, John T.	Vancouver
*Lee, Jack	Victoria	Waldron, Benjamin H.	New Westminster
Matheson, William D.	Britannia Beach	Wills, M. Eileen	Victoria
Morgan, Helen E.	Vancouver	Wilson, James R.	Vancouver
Morgan, Margaret E.	Vancouver	Wong, Leslie G. J.	Vancouver

FACULTY OF ARTS AND SCIENCE—FOURTH YEAR

Adams, Beverley J.	Wells	Forster, John H.	Vancouver
Adcock, Zelle	Honolulu, T.H.	Foster, Jean E.	Vancouver
Anderson, Donald E.	Victoria	Francis, Joseph	Vancouver
Anderson, Sylvia L.	Vancouver	*Franklin, David St. G.	Victoria
Bakony, Lionel I.	Vancouver	*Gansner, Nina M.	Vancouver
Barton, Dorothy F.	Chilliwack	Garrett, Dorothy E.	Vancouver
Beresford, L. Grace	White Rock	George, Margaret S.	Vancouver
Bertrand, Raoul C.	Vancouver	Gillis, Glenna H.	Vancouver
Bishop, Marion L.	Vancouver	Goard, Harold D.	Vancouver
†Bligh, Hildred N.	Vancouver	Goddard, P. Brenda	North Vancouver
Bonner, Barbara (Mrs.)	Vancouver	Godfrey, Barbara E.	Vernon
Boothe, G. Macrina	Victoria	Goodlad, John I.	Vancouver
Boulton, M. Elizabeth	Vancouver	Goodman, Abraham H.	Vancouver
Bradley, Evelyn E. M.	Vancouver	Gould, Belle (Mrs.)	Vancouver
Brown, Norma M.	Vancouver	Grant, Doreen M.	Vancouver
Buchanan, James B.	Vancouver	Greer, Pauline M.	West Vancouver
†Buck, Arthur A.	Vancouver	Griffin, F. Paul	Victoria
Budd, Joan	Vancouver	Grigg, Vernon H.	Vancouver
Bulman, Norman	Vancouver	Hammitt, Virginia A.	Vancouver
†Campbell, Jean A. K.	Vancouver	*Headrick, Olive	Vegreville, Alta.
Campbell, Norman K.	Hollyburn	Height, Joseph S.	Vancouver
Carey, Agnes M.	Vancouver	Henrikson, Arne	Nelson
Checov, Louie	Vancouver	Herberts, Lewis T.	New Westminster
Chong, Yoke	Vancouver	Hewitson, June M.	Vancouver
Christie, Jean	Vancouver	Hibberson, Robert J.	Victoria
Code, Ruth L.	Vancouver	Higgins, Ruth E.	Vancouver
Conkey, Elizabeth E.	Vancouver	Hodge, Muriel	Vancouver
Conway, Lorraine C.	Vancouver	Hollins, Raymond N.	Victoria
Craig, M. Patricia	Victoria	Hooson, William	Vancouver
Curran, Harry A.	Vancouver	Hope, Agnes C.	Victoria
Danby, Florence R. C.	Vancouver	Inkster, J. Donald	North Vancouver
*Davie, Jessie M. (Mrs.)	Vancouver	Ivey, Donald G.	Vancouver
Davie, Robert G.	Vancouver	Jarvi Helga	Vancouver
Day, Joan I. L.	New Westminster	*Jessop, Harvey C.	Vancouver
De Pencier, E. Audrey	Vancouver	Johnson, Arthur C.	Vancouver
Dodwell, Roland B.	Victoria	Johnson, Mary Alice (Mrs.)	Vancouver
DuMoulin, P. Anne	Vancouver	Kenny, John E.	Victoria
Errico, Ernest	Vancouver	Kidd, Mary H.	Vancouver
Estey, Byron T.	Vancouver	Kirkby, Arthur M.	Calgary, Alta.
*Eyles, Marianne A. D.	Vancouver	Knowles, Robert A.	Vancouver
*Falconer, Sheila K.	Vancouver	Kostman, Philip	Vancouver
*Farina, C. Obje	Vancouver	Lane, William T.	Vancouver
Farr, David M. L.	Vancouver	Lapworth, Phyllis	Revelstoke
Fisher, H. Dean	Kamloops	Large, Lorraine D.	Vancouver
Fleming, Norma W.	Vancouver		
*Foley, Frederick R.	Vancouver		

*Conditioned. †Partial.

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

Name	Home Address	Name	Home Address
Lee, Frances B.	Vancouver	Reynolds, Aingelda St.L. B.	Vancouver
Lee, Jean-Carol	Vancouver	Ridgway, Walter S.	Vancouver
Lightstone, Jack	Vancouver	Robertson, Donald A.	Vancouver
*Long, Joshua	Vancouver	†Robertson, Roderick F.	Vancouver
Maitland, Margaret LeC. (Mrs.)	Vancouver	Rodger, Margaret J. C.	Victoria
Mann, J. Howard	Vancouver	Rose, M. Evelyn	Langley Prairie
Manson, George G.	Vancouver	Rose, Meryle E. (Mrs.)	New Westminster
Marshall, Doris P.	Nanaimo	Russell, Marjorie M.	Vancouver
Marshall, M. E. Kay	Vancouver	Ryan, Daphne M.	Vancouver
Martin, Carol M. S.	Vernon	Sanderson, Alan L.	Vancouver
Mathews, Frank S.	Murrayville	Sanderson, Phyllis A.	Vancouver
Mercer, Florence E.	Vancouver	Sandison, Annabel M.	Vancouver
Mikkelsen, Phyllis M.	Vancouver	Scott, Elizabeth A.	Vancouver
†Millins, Betty P.	Victoria	Scott, Norma E.	Vancouver
Moran, John W.	Vancouver	Seaton, Norman T.	Vancouver
Moresby, Barbara	Victoria	Seymour, E. Aileen	Vancouver
*Morris, Desmond	Vancouver	*Shillabeer, John A.	Vancouver
Morrison, John T.	Vancouver	Simpson, Keith B.	Penticton
Morton, Evaline A.	Vancouver	Sinclair, E. Elmer	Vancouver
Morton, James W.	New Westminster	Singer, G. Edward	Vancouver
*Morwood-Clark, Lawrence L.	Vancouver	Smith, Douglas S.	Vancouver
Murray, R. Elaine	Vancouver	Smith, H. Paul	Victoria
McCall, Margaret B.	Vancouver	Smith, Wilma G.	New Westminster
McCallum, Norma R.	Vancouver	Soderholm, Ruth L. G.	Kimberley
*McCauley, W. Douglas	Victoria	†Sparkes, Clifford S.	Vancouver
McDiarmid, Lorna K.	Vancouver	Sparks, John E.	Vancouver
McDiarmid, Muriel A. I.	Kamloops	Speers, Edward A.	Brandon, Man.
Macdonald, M. Joan	Vancouver	Stewart, William E.	Vancouver
McDougall, Alexander D.	Haney	Taylor, Arthur E.	Vancouver
McFarlane, Helen E.	Calgary, Alta.	Taylor, Bruce E.	Vancouver
McGarry, Kathleen	Vancouver	Taylor, Edward R.	Vancouver
McGeer, J. Peter	Vancouver	Taylor, June C.	Vancouver
†McGregor, Marjorie H.	Kaslo	Thicke, Joan C.	Vancouver
MacIntosh, L. Jean	Vancouver	Thompson, Doris L.	Vancouver
McKinlay, William D.	Vancouver	Thompson, William H.	Vancouver
MacKinnon, George L. C.	Cranbrook	Touhey, Thomas B.	Vancouver
Nairne, Mildred M.	Vancouver	*Touhey, William B.	Vancouver
Nimmons, Phillip R.	Vancouver	*Turyk, Michael D.	Michel
Nygaard, Holger O. V.	Vancouver	Veregin, Thomas A.	Vancouver
O'Neill, Margaret M.	Kimberley	Villiers-Fisher, Joan R.	Victoria
Pallot, Margaret E.	Vancouver	*Walker, Claude E.	Vancouver
*Parker, Albert M. L.	New Westminster	†Wark, Bruce E.	Vancouver
*Parrott, Harold N.	Victoria	Warne, Robert M.	Peterborough, Ont.
Patrick, Barbara A.	Vancouver	Watson, Mary V.	Duncan
*Paul, Mary E.	Vancouver	Webber, Erminie L.	Victoria
*Paulsen, Edmond J. A.	Trail	Weber, Virginia	Vancouver
Pearson, Gwenneth L.	Calgary, Alta.	Weins, Elvira	Vancouver
Phillips, David B.	Vancouver	Welch, Helen P.	Qualicum Beach
*Piercy, Mary J.	Sandwich	Whimster, Muriel F.	Nelson
Pollock, John M.	Vancouver	*Wilkie, Gavin G.	Vancouver
Rawlings, Phyllis T.	Vancouver	Williams, Bernice M. S.	Vancouver
Redlich, Berta B.	Cloverdale	*Williams, L. June North	Vancouver
Reid, Margaret McD.	Vancouver	Woo, Mary M.	Vancouver
Reimer Nicholas	Sardis	Wyness, Eleanor J.	Vancouver

COMMERCE—FOURTH YEAR

Almas, D. James	Vancouver	Chong, Peter	Lytton
*Baillie, Graham C. B.	Vancouver	Chutter, S. Donald C.	Vancouver
Bakony, Edward G. J.	Vancouver	Edwards, Douglas A.	Haney
Bishop, Phyllis D.	Vancouver	Ellis, Barbara	Abbotsford
Boyd, Nora E.	Vancouver	Flader, Samuel	Vancouver
Buckland, H. Miram (Mrs.)	Vancouver	Friesen, Edward P.	Mission
Carmichael, Andrew J.	Vancouver	Giuriato, Lino	Vancouver
Cawley, P. Guy S.	Salmo	Glover, Maurice H. A.	Vancouver
		Glover, Percy C.	Vancouver

*Conditioned. †Partial.

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

Name	Home Address	Name	Home Address
Handling, M. Janet	North Vancouver	Nobbs, William H. L.	Vancouver
*Housser, David	Vancouver	Ross, Donald H. MacR.	Vancouver
Johnston, Victor W.	Nanaimo	Saunders, Richard G.	Vernon
Koenigsberg, Irving N.	Vancouver	Short, John W.	Vancouver
Lawson, David A.	Vancouver	Smedley, Jack V.	Vancouver
Lucas, Colin R.	Victoria	*Snyder, Edward W.	Vancouver
Manzer, Carson G.	Vancouver	Todhunter, S. Caswell	Grand Forks
Marshall, Henry J.	Calgary, Alta.	Wallace, Robert B.	Lethbridge, Alta.
Morgan, Phyllis G.	Vancouver	Whitelaw, Glenn R.	Vancouver
Morrow, Margaret E.	Vancouver	Whyte, Robert S.	Vancouver
MacKenzie, Murdo G.	Vancouver	Wilson, Charles H.	Harrison Hot Springs
Nevison, James H.	Vancouver	Yeasting, Alice M.	Vancouver
Nickerson, D'Arcy G.	Vancouver		

GRADUATES

Aberdeen, J. Fredrick	Eburne	Kuo, Chang-lu	Chunking, China
Allen, Gordon C.	Vancouver	Latimer, Edgar C.	New Westminster
Ashworth, George W.	Vancouver	Lee, Ernest	West Vancouver
Bannerman, Lloyd C. F.	Vancouver	Lucas, Charles F.	New Westminster
Bartholomew, Gilbert A.	Vancouver	Marchanton, Eileen O.	Vancouver
Bene, Eva M. (Mrs.)	Vancouver	Mather, Frederica	Vancouver
Bishop, Ernest L.	Chase	Matheson, Helen R.	Vancouver
Blissett, William F.	Ottawa, Ont.	Maxwell, E. David W.	Vancouver
Boyd, Otilie G.	Lake Cowichan	Metcalfe, Stanley W.	Vancouver
Brearley, Katherine T.	White Rock	Michell, Cyril A.	Victoria
Brock, June C. D.	Kitchener, Ont.	Mundell, Percy M.	Vancouver
Brunton, Fred M.	Ladner	Munro, Elspeth C.	Vancouver
Carefoot, Garnet L.	Vancouver	Munro, Marjory H.	Victoria
Cartwright, Margaret E.	Vancouver	Murray, Muriel M.	Kamloops
Casselman, W. G. Bruce	Vancouver	McAllister, James A.	Victoria
Chechik, Brothy (Mrs.)	Vancouver	MacDonald, Marian A. M.	Vancouver
Claridge, Charles A.	Vancouver	McGill, Donald A. C.	Calgary, Alta.
Clemens, Ann M.	Vancouver	MacKenzie, W. Hector	Vancouver
Cleveland, Edward M. D.	Vancouver	MacLeod, Robert A.	New Westminster
Cooper, W. Charles	Victoria	McLeod, R. Raymond	Rossland
Coyle, Nellie I.	Calgary, Alta.	Nesbitt, Clifford E.	North Vancouver
Cupit, Frank L.	Vancouver	O'Neill, Albert N.	Prince Rupert
Curtis, Alice M.	Vancouver	Owen, Gladys W.	Vancouver
Cuthbert, Grace I.	Vancouver	Parminter, Constance M. (Mrs.)	Vancouver
Dauphinee, Thomas McC.	Vancouver	Peyman, Douglas A. R.	Vancouver
Dee, Henry D.	Victoria	Pickering, Mary G.	Vancouver
Desjardins, Pit U.	Vancouver	Polglase, W. James	Vancouver
Donaldson, John S.	Vancouver	Rattenbury, John A.	Powell Rover
Elliott, Gilbert H.	Chilliwack	Rice-Jones, W. Geoffrey	Victoria
Elliott, Philip L.	Vancouver	Ryan, Mary	Prince Rupert
Ellis, David W.	Vancouver	Saunders, Eileen J. (Mrs.)	Vancouver
Ensor, Annie A.	Vancouver	Seaman, Elizabeth M.	Vancouver
Evans, Stanley	Nanaimo	Shephard, Alfred H.	Vancouver
Fairall, Wallace H.	New Westminster	Smith, Harry	North Vancouver
Ferguson, William C.	Vancouver	Smith, H. Bertram	Vancouver
Ferris, Robert J.	Vancouver	Soames, Kathleen I.	Grantham's Landing
Flick, Frederick W.	Oliver	Swainson, Neil A.	Victoria
Fougberg, Margaret L. (Mrs.)	Vancouver	Taylor, Bernard W.	New Westminster
Fowle, C. David	Vernon	Taylor, G. Stewart	Victoria
Garrison, Florence T.	Vancouver	Taylor, Sydney	Vancouver
Garstin, Lawrence H.	Kimberley	Thomas, Ralph C.	Vancouver
Goyer, Gertrude E.	Vancouver	Thompson, E. Irene	Vancouver
Gray, Anne	Vancouver	Thorne, W. Currie	Caulfield
Greene, T. Ernest	Vancouver	Tracy, W. Edward	New Westminster
Gurney, William H.	Kamloops	Tsou, Che-Hwa	Vancouver
Hackney, Amy L.	Vancouver	Underhill, Anne B.	Vancouver
Hagen, M. Alice	Essondale	Unsworth, Edith	Vancouver
Harry, Kenneth F.	Victoria	Wales, Bertram E.	Vancouver
Hendrickson, Inga C.	Kimberley	Warden, John G.	Vancouver
Howard, G. Vincent	New Westminster	Warrack, Beryl E.	Ladner
Johnson, Gordon E.	Powell River	Wilkie, Ada	Edmonton, Alta.
Johnson, Patricia M.	Vancouver	Witherly, Erven O.	West Vancouver
Keays, Effie K. (Mrs.)	Powell River	Wylie, Jessie F.	Sherman
Kennedy, Everett B. M.	North Vancouver		

*Conditioned.

SOCIAL WORK

Name	Home Address	Name	Home Address
Bardal, Margaret S.	Winnipeg, Man.	Holland, Kathleen A.	Vancouver
Beckett, Isabella E. (Mrs.)	Vancouver	Kaufmann, Theresa (Mrs.)	Vancouver
Begg, Dorothy R.	Calgary, Alta.	McGougan, Edward H. B.	Vancouver
Buckerfield, Mary I.	Vancouver	McQueen, Barbara M.	Vancouver
Carscadden, Lillian M.	Red Deer, Alta.	Proud, M. Geraldine	Beaver Lodge, Alta.
Conboy, I. Zella Y. (Mrs.)	Hanley, Sask.	Putnam, James M.	Medicine Hat, Alta.
Costello, Mary J.	Vancouver	Rosman, Anne	Vancouver
Cowper, Margaret L. (Mrs.)	Vancouver	Sinclair, Eleanor W.	Cloverdale
Day, A. Joyce	Victoria	Stirling, Francis B. H.	Calgary, Alta.
Elliott, Willa J.	Vancouver	Strachan, Olive M. (Mrs.)	Vancouver
Flynn, Elizabeth M. J.	Vancouver	Tait, Jean W.	Vancouver
Gordon, Edith (Mrs.)	Vancouver	Taylor, Audrey R.	Winnipeg, Man.
Hobson, Martha	Wicklow, Eire	Tindle, Muriel A.	Vancouver
Hoffman, Pearl	Vancouver	Warner, Mary E.	Vancouver

TEACHER TRAINING COURSE

Barnett, Joan R.	Vancouver	Lock, Vivian E. R.	Vancouver
Barss, Elizabeth M.	Vancouver	Lovick, D. Norma	Victoria
Clark, Kathleen D.	New Westminster	Manning, Margaret J. (Mrs.)	Vancouver
Colclough, Ruth M.	Vancouver	Moyle, Amy C.	Vancouver
Dalín, Winifred H.	Celista	Mulhern, Merrle N.	Vancouver
Davis, Phyllis E. G. (Mrs.)	Vancouver	McPhee, Maurice D.	Vancouver
Dixon, Helen B.	Victoria	McQueen, F. E. Mae	Vancouver
Dwyer, Melva J.	Kamloops	Sibbald, Jean S.	Regina, Sask.
Erickson, Norma A.	Aldergrove	Slater, Mary A.	Vancouver
Gilmour, G. Campbell,	New Westminster	Tatroff, Daniel P.	Vancouver
Hewett M. Hope	Victoria	Walker, Goldie E. C.	Vancouver
Jenkinson, Elizabeth	Vancouver	Wood, George A.	Vancouver
Kitson, C. Edith	Vancouver	Young, Honoree G.	Vancouver

DIRECTED READING COURSES

Allan, James	Nanaimo	Ferguson, John C.	Chilliwack
Allan, John R.	Hollyburn	Fleming, Robert E.	Nelson
Annis, William A.	Chilliwack	Forman, Delmar F.	Tappen
Arland, Elsie M.	Kimberley	Fox, Phyllis J.	Victoria
Armitage, Marian H.	Vancouver	Gay, William G.	Mission City
Barnett, Ruth E. (Mrs.)	Port Alberni	Gerrie, Eleanor A.	West Vancouver
Barritt, Dorothy E.	Chilliwack	Gibb, Henry D.	Kamloops
Bartle, Thelma E.	Vancouver	Goold, Kathleen J.	Strathnaver
Bishop, George A.	Rossland	Guidl, Rudolph P.	Oliver
Bissell, George C.	Oyama	Haworth, Gerald N.	Vancouver
Blake, Thomas B.	Vancouver	Hawthorne, Helen A.	Vancouver
Bloom, Martha M.	Sointula	Henrickson, Alexander B.	Vancouver
Bowering, Ebbie	Vancouver	Horne, Anne	Kimberley
Boyes, John C. P.	Vancouver	Hutcheson, Amy M.	New Westminster
Brynjolfson, Stephen	Powell River	James, Albert H.	Vancouver
Burrow, Margaret A.	Greenwood	Johnston, May S.	Lake Cowichan
Campbell, Morag E.	Chilliwack	Johnstone, Laura	Nanaimo
Campbell, Velma M.	Vancouver	Jones, Arthur D. W.	Smithers
Cavalier, Eva E.	Prince Rupert	Jude, Hilda	Langley Prairie
Clark, Alec F.	Vancouver	Kavanagh, Veronica (Mrs.)	Kimberley
Cook, Gregory C.	White Rock	Kennedy, Pearl A. (Mrs.)	Port McNeill
Cote, Elizabeth D. (Mrs.)	Vancouver	Kitley, Walter J.	Victoria
Cox, Stanley J.	Stewart	Lips, Annie	Terrace
Crow, Benjamin W.	Vancouver	Loutet, M. Yvonne	Wynndel
Curtis, Thomas N.	Victoria	Lukas, John	Kimberley
Curtis, Leonard C.	Vancouver	Lynch, James C.	Vancouver
Davis, June A. (Mrs.)	Victoria	Magar, W. Lloyd	Vancouver
Dawson, Horace R.	Victoria		
Dignan, Edna	Smithers		

DIRECTED READING COURSES—(Continued)

Name	Home Address	Name	Home Address
Marriott, Earl	Creston	Sellon, Mathilde S.	Vancouver
Miller, Edward F.	North Vancouver	Simmons, Mary E.	Vancouver
Mitton, James R.	Vancouver	Simpson, Ernest J.	Vancouver
Monk, Richard H. J.	Blue River	Smith, David J. S.	Abbotsford
Moscrop, M. Eleanor	Vancouver	Smith, Donald A.	Gibson's Landing
Murphy, Margaret L.	New Westminster	Smith, Donald O.	Vancouver
Muttart, Mary C.	Vancouver	Smith, June M.	New Westminster
McAdam, Lorne K.	New Westminster	Stanley, Lawrence E.	Vancouver
McHallam, Ena G.	Kelowna	Steele, Isobel F.	New Westminster
MacLeod, John K.	Vancouver	Stewart, Hazel E.	Victoria
McMynn, Alice G.	Vancouver	Stewart, Rosa T.	Nelson
McPhail, William J. A.	New Westminster	Strang, James B.	Powell River
McVea, J. Morrison	New Westminster	Sutton, Frank N.	Vancouver
Nelson, Irene T.	Penticton	Swanzey, W. Norman	Nelson
Orchard, Wilfrid, J.	Sooke	Syson, Daphne	Victoria
Parker, Noel R.	Spences Bridge	Tweeddale, Abbott E.	Trail
Phillips, Brenda C.	Vancouver	Urquhart, Helen M. A.	Wynndel
Phillipson, Johann	Williams Lake	Webber, Bernard G.	Penticton
Ranta, Laimi	Penticton	Whiddington, W. Barrett	Vancouver
Roberts, R. H. Donald	Rossland	White, Pearl E.	Dewdney
Robertson, Adam G.	Cranbrook	Williams, Joan S.	Vancouver
Ross, Alexander D.	Vancouver	Woodward, Helen M. E.	Cranberry Lake
Sale, Thomas D.	Pitt Meadows	Wright, Christopher C.	Kamloops
Sanford, Norman M.	Vancouver	Wybourn, Edbrooke S.	Portage La Prairie, Man.
Scagel, Robert	Vancouver		

There are also 44 students who are taking a Directed Reading Course in addition to their other work, and who are, therefore registered otherwise.

FACULTY OF APPLIED SCIENCE

SECOND YEAR

Adams, Robert G.	New Westminster	Cowie, Alexander	Vancouver
Adie, Lawrence	New Westminster	Cox, Robert A.	Vancouver
Allan, John D.	Vancouver	Day, Deryck R.	Lloydminster, Sask.
Allman, Arthur W.	Vancouver	Dean, Douglas A.	New Westminster
Ames, Gordon W.	North Vancouver	Denkman, Norman H.	Vancouver
Andrew, Frederick J.	Vancouver	dePfyffer, Robert L.	Kelowna
Atherton, Don L.	Vancouver	Douglas, Colin McK.	Vancouver
Baker, William F.	Vancouver	Dowsley, Allan H.	North Vancouver
Bartlet, A. William	Victoria	Dyck, Hubert I.	Wells
Bateman, William A.	Vancouver	Evans, Donald J.	New Westminster
Beal, Evan S.	Vancouver	Fenn, Raymond A.	Vancouver
Beamer, Gordon H.	Hollyburn	Fyles, James T.	Vancouver
Beguin, Andre C.	Argenta	Gaffney, Richard F.	Vancouver
Bennie, Charles L.	Nanaimo	Gallon, Alan V.	Vancouver
Berson, Morris J.	Vancouver	Gamble, George H.	Vancouver
Beveridge, James A.	Vancouver	Genge, Gordon M.	Vancouver
Blank, George	North Vancouver	Gill, Lawrence	Nanaimo
Bortolin, G. Lindo	Powell River	Gill, William D.	Vancouver
Boyes, Keith N.	Chilliwack	Glover, Nelles H.	Vancouver
Bruce, John G.	Vancouver	Goodmurphy, Ralph M.	Regina, Sask.
Burgess, Harold N.	Trail	Greenius, Arnold W.	Vancouver
Burgoyne, Frank B.	Nakusp	Hannan, John G.	Victoria
Bushfield, Roy E.	Vancouver	Harris, Ian W. E.	Victoria
Cains, Richard W.	Sooke	Harrison, Arthur E.	Vancouver
Calver, George L.	Salmon Arm	Harrison, John H.	North Vancouver
Campbell, Patrick D.	Vancouver	Hayes, John	Vancouver
Carter, A. Gordon	Trail	Hazlewood, David A.	Vancouver
Charles, A. Trevor	Vancouver	Hesla, Erling C.	New Westminster
Chow, Richard H.	Vancouver	Hill, Geoffrey W.	Vancouver
Climie, John H.	Vancouver	Hill, Robert H.	Nanaimo
Cook, Robert E.	Smithers	Ho, Arthur	Vancouver
Cooper, Ernest E.	Vancouver	Ho, Robert J.	Vancouver
Cooper, Howard R.	Vancouver	Hooley, Roy F.	Vancouver
Course, William R.	Vancouver	Horne, Edgar B.	Vancouver

FACULTY OF APPLIED SCIENCE—SECOND YEAR—(Continued)

Name	Home Address	Name	Home Address
Huff, Major W.	West Vancouver	Payne, David K.	Vancouver
Hughes, James H. C.	Vancouver	Pearson, Lawrence O.	Vancouver
Hughes, Roger C.	Courtenay	Pedersen, Chester H.	Vancouver
Hunter, Stanley J.	Hazelton	Peetz, Anthony G.	Victoria
Islaub, S. Kenneth	Vancouver	Phillely, J. Clement	Vancouver
Jack, Peter S.	Victoria	Philps, Fred M.	New Westminster
James, Donald H.	Vancouver	Potowy, Joseph	Vancouver
James, Rodney A. N.	Vancouver	Potter, Gilbert D.	Vancouver
John, John G.	Cranbrook	Quan, Ben	Vancouver
Kaliski, Tadeusz	Vancouver	Quirk, Edwin T.	Kimberley
Kershaw, Stephen C.	Victoria	Racine, Rejean W.	New Westminster
Kirkpatrick, Edward T.	Vancouver	Ralston, Gordon B.	Victoria
Kirkpatrick, Guy G.	Vancouver	Reaville, Eric T.	Vancouver
Larson, N. Lawrence	Ocean Falls	Redmond, H. Clifford	Vancouver
Layard, Camille P.	Sidney	Robinson, John W.	Port Coquitlam
Lee, James W.	North Vancouver	Robinson, William G.	Vancouver
Levelton, Bruce H.	Bella Coola	Ross, William J.	Vancouver
Lewchuk, Michael	Vancouver	Sains, Constantine	Vancouver
Lister, Robert W.	Vancouver	Seppala, Keijo H. W.	Vancouver
Lockhart, Gerald P.	New Westminster	Seyer, Francis H.	Vancouver
Loyd, Don B.	New Westminster	Shadbolt, Douglas	Victoria
Magee, James B.	Yellowknife, N.W.T.	Sherman, Deane D.	Vancouver
Mah, Thomas	Vancouver	Sinclair, Donald E.	Medicine Hat, Alta.
Marshall, James	Vancouver	Slaney, Frederick F.	Hillier's
Marzocco, Edo	Kimberley	Slingsby, John C.	Victoria
Maxwell, J. Stewart	New Westminster	Smith, Thomas F.	North Vancouver
Maxwell, Noel R.	Vancouver	Sparling, Walter	Vancouver
Milan, A. Roy	Port Alberni	Starck, Louis P.	Vancouver
Miller, Wallace B.	Vancouver	Stilwell, M. Arthur	Vancouver
Milligan, Jack W.	Calgary, Alta.	Stokes, H. Aldred C.	New Westminster
Morfev, Montague H.	Vancouver	Stroud, Ross C.	North Vancouver
Morrison, Edward S.	Vancouver	Sunga, Preetom S.	Duncan
Moyls, C. Maurice	Vancouver	Sykes, Gordon G.	Vancouver
Moyls, W. Joseph	Vancouver	Tanner, A. Gordon	Essondale
Murphy, William T.	Vancouver	Tautorus, Emil	Vancouver
Murray, Gordon S.	Vancouver	Thomson, Thomas M.	Victoria
McBain, Philip A.	Ottawa, Ont.	Tinney, E. Roy	Vancouver
Macdonald, Roderick M.	Courtenay	Titus, Bruce E.	Moose Jaw, Sask.
McFeely, Cameron J.	Lynn Creek	Tukham, Godfred W.	Headquarters
McKay, Donald F.	Eburne	Tweed, William J.	Vancouver
MacKay, James W.	Vancouver	Vaughan, Victor H. D.	West Vancouver
MacKenzie, Archibald C.	Revelstoke	Wardrop, George	Vancouver
MacKenzie, Hugh A.	Prince Rupert	Watts, James A.	Vancouver
MacLean, Fraser A.	New Westminster	Webb, Leslie E.	White Rock
McLellan, Harold D.	Ioco	Webster, Alan W.	Lillooet
McLellan, John W.	Vancouver	Wellburn, G. Vernon	Duncan
McLennan, John R. B.	Vancouver	Wheeler, John O.	Sidney
McRae, Roderick K.	Vancouver	White, Alan MacL.	Dawson, Y.T.
Naylor, Thomas K.	Vancouver	Whitney, Gordon E.	New Westminster
Neilson, Allan P.	Vancouver	Wing, John	Kamloops
Nelson, J. William	Port Alberni	Wong, K. Jack	Vancouver
Newall, Norman	Vancouver	Woods, Eric J. H.	Vancouver
Newmarch, Thomas F. R.	Vancouver	Woodside, Owen W.	Vancouver
Oehlerking, Roy F.	Vancouver	Ziller, Wolf G.	Fort William, Ont.
Paulik, Wilmar	Brighouse		
Pavich, Michael	Vancouver		

THIRD YEAR

Aitken, Thomas	Vancouver	Bayly, Lemuel J.	Chilliwack
Allen, George	Cloverdale	Benson, Russell R.	Vancouver
Andersen, Albert A. I.	Powell River	Bevan, Rhys D.	Lower Nicola
Ascroft, Gerald C.	Victoria	Beveridge, John W.	Vancouver
Auld, Bert A.	Nelson	Bewell, Bruce E.	Victoria
Bakewell, David R.	Vancouver	Bird, John McI. Grande	Prairie, Alta.
Banman, John	Yarrow	Bodnar, Michael W.	Vancouver
Barrow, Gordon	Vancouver	Bowell, Stephen T.	Vancouver

FACULTY OF APPLIED SCIENCE—THIRD YEAR—(Continued)

Name	Home Address	Name	Home Address
Bramhall, George	Vancouver	Manning, David J.	Vancouver
Broe, Kenneth L.	Port Hammond	Marks, Walter	Vancouver
Burgess, John A.	Trail	Martin, James P.	Vancouver
Burroughs, William H. M.	Powell River	Mearns, Alan N.	Vancouver
Burrows, Michael	Rossland	Miniato, Oswald K.	Vancouver
Campbell, Douglas D.	Vancouver	Mitten, Leonard A.	Cranberry Lake
Cawley, Nevil B.	Victoria	Montador, Andrew J.	Nanaimo
Chutter, Paul W.	Vancouver	Montador, David R.	Nanaimo
Crocker, Charles B.	Vancouver	Moore, Charles A.	Vancouver
Currie, Robert H.	Vancouver	Moore, William J. M.	Victoria
Davies, Llewelyn B.	Vancouver	Moran, John R.	Victoria
Dickson, Peter	Vancouver	Morriss, James E.	Canmore, Alta.
Dimock, Arthur C.	Smithers	Morriss, Harry F.	Vancouver
Dowding, Charles W.	Vancouver	Munroe, Lawrence R.	Victoria
Ede, Arnold H.	Capilano	McGinn, Alexander	Vancouver
Edwards, Owen C.	Vancouver	McLellan, Robert N.	Vancouver
Ellis, Gordon McL.	Vancouver	McLeod, George W.	Vancouver
Evans, Wilfred M.	New Westminster	McMichael, William G.	Victoria
Fisher, Ralph E.	Grantham's Landing	Nalos, Ervin J.	Vancouver
Fordyce, David B.	Vancouver	Newson, Donald A.	Vancouver
Foster, Leo W.	Nelson	Nicholson, William V.	North Vancouver
Fyles, John G.	Vancouver	Olsen, J. Norman	Vancouver
Gagliardi, Sam	Victoria	O'Neil, William J.	Vancouver
Gallaher, Ernest E.	Vancouver	Parkinson, Geoffrey V.	Vancouver
Galloway, Leslie C.	Vancouver	Peatfield, John H.	Radium Hot Springs
Garner, Joseph J.	Vancouver	Perris, George	Vancouver
George, Stanley E.	Vancouver	Reksten, Arvid L.	Eburne
Goldman, Robert	Vancouver	Rhodes, Ernest S.	New Westminster
*Gordon, Harry	Vancouver	Robertson, Edward A.	Cultus Lake
Hammerslag, Julius	Vancouver	Ross, George	Victoria
Hansen, Harris T.	Vancouver	Rutquist, Fred E.	Vancouver
Harris, Robert G.	Penticton	Scott, Donald A.	Victoria
Heal, Douglas G.	Vancouver	Scott, Tom F.	Vancouver
Hilton, H. Brian	North Vancouver	Seraphim, Robert H.	Clayburn
Hodgson, Alexander G.	Marysville	Shadwell, Howard J.	Vancouver
Horton, J. William	Vancouver	Stevens, Donald R.	Calgary, Alta.
Howlett, Stephen B.	Victoria	Stewart, Donald L.	North Vancouver
Hunter, Thomas	Powell River	Sutherland, John H.	Vancouver
Johnson, Leonard C.	Victoria	Tapay, Harold M.	Nanaimo
Jorgensen, Harry D.	Vancouver	Taylor, David H.	Whonock
Josephson, Gilbert M.	Merritt	Teevan, James T.	Vancouver
Kenny, Wilfrid	Vancouver	Thomas, John W.	Ladysmith
Kent, Norman S.	Vancouver	Underwood, Eldin S.	Vancouver
Kerr, Robert G.	Vancouver	Wales, Donn	Vancouver
Kilburn, James H.	Victoria	Waller, Arnold B.	Wellington
Kolbeins, Henry	Vancouver	Ward, George A. H.	Vancouver
Lake, Addison A.	Vancouver	Warrender, A. Campbell	Victoria
Latimer, Norman H.	Penticton	Waters, H. Bryce	New Westminster
LeBrun, Julius A.	Vancouver	Welton, Richard J. H.	Trail
Lewis, L. Allen	New Westminster	Whiting, Francis B.	Vancouver
Lewis, Robert A.	Vancouver	Wight, Lawrence E.	Calgary, Alta.
*Lindenfeld, Peter	Vancouver	Wong, C. Gilbert	Vancouver
Lloyd, William E.	Mt. Tolmie	Wong, Dai W.	Vancouver
Long, Luke	Vancouver	Wood, Norman M.	Courtenay
Lyle, Wallace E.	Vancouver		
Machell, Eugene F.	Matsqui		

FOURTH YEAR

CHEMICAL ENGINEERING			
Bibbs, Richard M.	Vancouver	Griffiths, Donald F.	Monte Lake
Brandon, George F.	Vancouver	Howie, Henry J.	Cloverdale
Clarke, William D.	Victoria	Leith, James A.	Kimberley
Clifton, Everard H.	Britannia Beach	Powell, John R. P.	Vancouver
Cochrane, James A.	New Westminster	Robinson, Donald B.	Oliver
Coleopy, Norman	West Vancouver	Ruck, William	Oliver
Cooke, Norman E.	Vancouver	Sexsmith, Roderic F.	Vancouver
Dawson, John A.	Huntingdon	Steele, Ian McL.	North Vancouver
Dunell, Basil A.	New Westminster	*Wate, G. Kenneth	Vancouver
Ellison, Gordon D.	Trail	Yip, Chuck W.	Vancouver
		Younger, Andrew H.	Vancouver

*Conditioned.

FACULTY OF APPLIED SCIENCE (Continued)

Name	Home Address	Name	Home Address
CIVIL ENGINEERING		GEOLOGICAL ENGINEERING	
Anderson, J. Douglas	Vancouver	Jones, Alexander G.	Victoria
Binnie, Robert F.	Vancouver	*Parliament, J. Harvey	Vancouver
Bunnell, Frank R.	Vancouver	Roots, E. Fredrick	Banff, Alta.
Calderhead, Gordon A.	Victoria	Sharp, William McM.	Vancouver
Confortin, John C.	Squamish	MECHANICAL ENGINEERING	
Dennison, James A.	Vancouver	Barry, Frank W.	Ocean Falls
Eyre, Alan M.	Vancouver	*Blumenauer, George H.	Enderby
Fraser, D. Arthur	Calgary, Alta.	Bryant, James L.	Ocean Falls
Graves, Harold B. R.	Vancouver	Campbell, Alastair G.	Vancouver
Grimble, Wilfred G.	Vancouver	Chalmers, William R.	Chilliwack
Hicks, John B.	Vancouver	Cochran, Edward O.	Barriere
Hole, Frederick R.	Vancouver	Doyle, James P.	Vancouver
Kent, Joseph C.	Vancouver	Finnie, J. Douglas	Vancouver
Ker, W. Allan	Vancouver	Francis, Frank M.	Vancouver
Lefeaux, Stuart S.	West Vancouver	Galbraith, D. Ewen	Vancouver
Scott, William B.	Vancouver	Gronlund, Max D.	Vancouver
*Stamford, Gordon W.	Victoria	Hatte, Ross	Vancouver
Turley, Frank E.	Nanaimo	Kells, Owen C.	Vancouver
Wigen, Sydney O.	Wyndel	Lawley, Gordon E.	Eburne
ELECTRICAL ENGINEERING		Lloyd, George A.	Vancouver
Best, George C.	Victoria	Long, Joseph D.	Vancouver
Creelman, Elliott A.	Port Alberni	Maybank, Herbert A. G.	Olds, Alta.
Ellis, Harry McP.	New Westminster	McGuiness, David I.	Invermere
Gardner, Melvin T.	Vancouver	*MacKay, Wallace	Vancouver
Gregory, Edward S.	Vancouver	Nelson, James T.	North Vancouver
Guichon, Lloyd J.	Quilchena	*Newberry, Gordon E.	Barriere
Haney, D. Francis	Revelstoke	Orskog, Arthur G.	Vancouver
Healey, Albert J.	New Westminster	Payne, Harold R.	Vancouver
*Hetherington, John D.	Vancouver	Smith, Herbert S.	Vancouver
*Hrynychuk, Walter	Mount Cartier	*Stuart, William B.	Ocean Falls
Isherwood, Sidney D.	Haney	*Taylor, Leonard H.	Vancouver
*Jones, Hugh C.	Vancouver	Wannop, Leonard G.	Vancouver
LaBelle, Eugene P.	Vancouver	Watson, S. Arthur	Vancouver
Lam, Mathias	Vancouver	Williams, Thomas G.	Vancouver
LeBus, George H.	Victoria	Willis, C. Norman	Victoria
Louie, John	Vancouver	Woo, John S.	Vancouver
Lytle, Dennis D.	Vancouver	METALLURGICAL ENGINEERING	
Mohr, Frank K.	Wistaria	Barer, Ralph D.	Vancouver
Moore, Donald C.	Kamloops	Berryman, David J.	Oliver
Newbury, Edward W.	Nanaimo	MINING ENGINEERING	
Piercy, Earle W.	Courtenay	Carver, Robert R.	Vancouver
Roos, Albert E.	Kamloops	Morton, Roy E.	Wells
*Roper, Austin J.	Lethbridge, Alta.	MacKinnon, Donald F.	Cadomin, Alta.
Tarrant, E. Henry	Vancouver	Olson, E. Robert	Vancouver
Walker, William M.	Vancouver	Seraphim, Andrew F.	Clayburn
Woodcroft, John	Victoria	FIFTH YEAR	
CHEMICAL ENGINEERING		Syme, Thomas D.	Vancouver
*Assaly, Thomas C.	Rosetown, Sask.	Taylor, Norman E.	Princeton
Bonutto, Alfred L.	Trail	Tiedje, John L.	Trail
Carrothers, P. John G.	Vancouver	Toombs, E. Harold	Vancouver
Ekman, Frank O.	Vancouver	Turner, A. Desmond	Vancouver
Frost, Paul J.	Vancouver	Workman, Allan B.	Fernie
Gitterman, Louis H.	Vancouver	CIVIL ENGINEERING	
Halle, Isaac	Fernie	Bentall, Robert G.	Vancouver
Hood, John A.	Victoria	Clay, Charles H.	New Westminster
*Hooper, Perry McF.	Salmon Arm	Cooper, Alexander C.	New Westminster
Lucas, Arthur R.	Vancouver	Mosher, Vaughan L.	Vancouver
*Muir, John W.	Vancouver	Narod, Alvin J.	Victoria
Murray, John M.	Vancouver	Scarisbrick, Richard G.	Vancouver
Oles, John E.	Vancouver	Slater, John S.	Vancouver
Ontkean, Orville M.	Vancouver	Smith, H. Leslie	Vancouver
*Seats, Hubert B.	Victoria	Swerdfeger, John H.	Vancouver
Shaw, A. John	Vancouver	Wallace, John M.	Vancouver
Sleigh, E. Barry	Vancouver		
Soulsby, Alan St. G.	Victoria		

*Conditioned.

FACULTY OF APPLIED SCIENCE (Continued)

Name	Home Address	Name	Home Address
ELECTRICAL ENGINEERING			
Auchinleck, Gilbert F.....	Vancouver	Caine, R. Geoffrey.....	Prince George
Bartholomew, Ben.....	North Vancouver	Carncross, Charles A.....	New Westminster
Beaton, Stanley J.....	Vancouver	Chestnut, R. Glenn.....	Vancouver
Carlile, Jack C.....	Vancouver	Christie, A. S. Hugh.....	Vancouver
Clarke, Edna A.....	Penticton	Crosby, Robert S.....	Banff, Alta.
Davidson, Robert A.....	Vancouver	Deptford, James A.....	Vancouver
Filman, Norman J.....	Vancouver	Douglas, J. Boyd.....	Vancouver
Godfrey, Gerald F.....	Sidney	Gagnon, Bernard U.....	Vancouver
Gruenberg, Harry.....	Vancouver	Hanbury, J. Carter.....	Monte Lake
Gush, John B.....	Saanichton	Jagger, Paul S.....	West Vancouver
Hausch, Robert C.....	Vancouver	Kaneen, Arthur G.....	Vancouver
Hughes, R. B. Chalmers.....	Penticton	Langenek, Frederick.....	Kamloops
Julson, O. Melvin.....	Delia, Alta.	*Livingston, Donald A.....	Vancouver
Legeer, Ronald J.....	Vancouver	Marzocco, Aldo.....	Kimberley
Mosher, Allison F.....	Vancouver	Moore, Robert G.....	Edmonton, Alta.
Nosworthy, Frank M.....	Chilliwack	McCarter, Donal C.....	Victoria
Pearson, Carl E.....	Vancouver	MacKay, Ronald N.....	Vancouver
Rome, Alexander H.....	Vancouver	McLorg, Terence W.....	Vancouver
Wilding, Malcolm F.....	New Westminster	Porter, James A.....	New Westminster
FOREST ENGINEERING			
Matheson, Ian D.....	Vancouver	Saunders, Harold L.....	Invermere
Robinson, Eric W.....	Britannia Beach	Scott, H. James A.....	Chilliwack
Roche, R. Gordon.....	Vancouver	Shumas, Fred.....	Vancouver
Russel, David M.....	Mission	Small, Fred.....	Burns Lake
GEOLOGICAL ENGINEERING			
Burns, David.....	Vancouver	Wighton, John L.....	Vancouver
Morris, H. Rodney.....	Vancouver	METALLURGICAL ENGINEERING	
MECHANICAL ENGINEERING			
Anderson, Blair W.....	Vancouver	Abbott, Hugh M.....	Vancouver
Bourns, John D.....	Vancouver	Bennett, Orval W.....	Victoria
Burton, John A.....	Vancouver	Currie, D. Allan.....	Rossland
GRADUATES			
Baker, Dudley L.....	Vancouver	Goodman, James E.....	Flin Flon, Man.
Buck, F. A. Mackinnon.....	Vancouver	Hookings, Paul H. H.....	Nelson
Carlisle, Donald.....	Vancouver	Robinson, M. Dennis E.....	Vancouver
DeLeen, John L.....	Vancouver	MINING ENGINEERING	
Graham, Harold M.....	Squamish	Gall, Louis J.....	Nanaimo
NURSING			
SECOND YEAR			
Barber, Bernice.....	Vancouver	McLeod, A. Allan.....	Vancouver
Greenhorn, Doreen.....	New Westminster	Smith, William R.....	West Vancouver
Hunter, Margaret E.....	Vancouver	Stusiak, Michael.....	Vancouver
Hunter, Trenna G.....	Vancouver	Wright, Donald McT.....	Vancouver
Joh, Anita D.....	Vancouver	THIRD YEAR	
Montgomery, Nancy J.....	Vancouver	Carruthers, Winona L.....	Victoria
GRADUATES			
Baker, Clarence W. J.....	Vancouver	Chang, Zoe.....	Vancouver
McLeod, A. Allan.....	Vancouver	Davies, Frances K.....	Britannia Beach
Smith, William R.....	West Vancouver	Gillies, Barbara.....	Vancouver
Stusiak, Michael.....	Vancouver	Harrison, Suzanne.....	Cranbrook
Wright, Donald McT.....	Vancouver	Irwin, I. Eleanor.....	Vancouver
NURSING			
SECOND YEAR			
Saunders, Ruth E.....	Invermere	King, Barbara C. (4).....	Vancouver
Stafford, Cora-May.....	Vancouver	Lazzarin, Fioretta (4).....	Quesnel
Thompson, Anita J.....	Revelstoke	Murray, Bernice V.....	Merritt
Vincent, Marguerite V.....	Burnaby	Ogilvie, Shella M. (4).....	Vancouver
White, Eleanor J.....	Vancouver	Ostrom, E. Margaret.....	West Vancouver
Wilson, Mae B.....	Vancouver	Rae, Elizabeth B. (4).....	Vancouver
THIRD YEAR			
Read, Joyce M.....	Vernon	Scooness, A. Elizabeth.....	Galiano Island

*Conditioned.

FACULTY OF APPLIED SCIENCE—(Continued)

FOURTH YEAR

Name	Home Address	Name	Home Address
Abernethy, Margaret J.	Parksville	Lane, Ruth A.	Vancouver
Abrams, Betty M.	New Westminster	Martin, Sally V.	New Westminster
Ades, Audrey I.	Vancouver	Messenger, Georgina A. (5)	Vancouver
Atkins, Roma J.	New Westminster	Morison, Joan D.	Victoria
Augustine, Betty-Valerie	New Westminster	McWilliams, Helen C. (5)	Vancouver
Boyes, Margaret M.	Vancouver	Rendell, Norah J.	Vancouver
Dobson, M. Pauline	Vancouver	Taylor, Jean E.	Vancouver
Driver, Joyce I.	Kamloops	Taylor, Joyce M.	Kamloops
Duncan, Margaret W. (5)	Revelstoke	Tucker, Norma McC. (5)	Winnipeg, Man.
Foster, Mary-Lang	Nanaimo	Wilkinson, Mary H.	Regina, Sask.
Hazlewood, Mary-Gordon	Vancouver	Witter, Beverley M. (5)	Vancouver
Hobden, F. Elizabeth (5)	Hollyburn		
Humphreys, Marjorie E.	Kamloops		

FIFTH YEAR

Adam, J. Kirstine	Vancouver	Morris, Dorothy R. A.	New Westminster
Baker, M. Anne	New Westminster	McLean-Bell, Janet M. G. (6)	Vancouver
Butler, E. Irene	Vancouver	Sorenson, Marie B.	Nanaimo
Gulloch, Ennis E.	Vancouver		
Hawkins, Mary E.	Vancouver		
Hicks, Mary N.	Agassiz		

SIXTH YEAR

Cross, Josephine	Kamloops	Munro, Mae E.	Vancouver
Fleck, Janet S. (7)	Vancouver	MacKay, Jean C.	Vancouver
Jamieson, Doreen L.	Rossland	Rowe, Phyllis S.	Kamloops
Ladner, Dorothy M.	Burnaby	Trout, M. Ferne	Spuzzum
Mann, Alison M.	Calgary, Alta.		

PUBLIC HEALTH NURSING

Campbell, Margaret A.	Vancouver	McGeachie, M. Florence	New Westminster
Carter, Bernice E.	Vancouver	MacKenzie, Eileen L. (Mrs.)	Kamloops
Comerford, Kathleen N.	Victoria	Newby, Edith C.	Sardis
Denby, Doreen M.	Vancouver	Plumer, Betty G.	Bassano, Alta.
Earle, Audrey M.	Vancouver	Read, Margaret K.	Victoria
Edwards, Mary P.	Weyburn, Sask.	Richardson, Hilda	Kelowna
Eriksson, Corinne G.	Kimberley	Ross, Ruth	Vancouver
Fentiman, Annie	Shelton, Wash.	Schuman, Elsie C.	Saskatoon, Sask.
Goodwin, D. Eleanor	Vancouver	Short, Betty	Vancouver
Heron, Alice C.	Victoria	Toynbee, Margaret C.	Chemainus
Jones, G. E. Susie	Victoria	Weppler, Vilda J.	Vancouver
Lehmann, Elizabeth	Mallardville	Wyman, D. Ona	Victoria
Logan, Barbara	Cowichan Station	Youmans, Viola C.	Vancouver
McColl, M. Lorena	North Battleford, Sask.		

TEACHING AND SUPERVISION

Davis, Ethel M.	Kamloops	Sinclair, Christina C.	Britannia Beach
Pullan, Edith M.	Vancouver	Willis, Lucy D.	Moose Jaw, Sask.

FACULTY OF AGRICULTURE

FIRST YEAR

Bayfield, John T.	Hollyburn	Day, John H.	Vancouver
Bell, Gordon R.	Vancouver	Devlin, Kenneth A.	North Vancouver
Burdock, Robert A.	Nanaimo	Drew, Richard E.	Vancouver
Butterworth, Earl McK.	Kamloops	Ferries, Clarke H.	Vancouver
Campbell, Dan R. J.	New Westminster	Glucksman, Trevor	Vancouver
Corbett, Robert	Vancouver	Gregory, Kenneth F.	Vancouver
Dagg, Glenn E.	Vancouver	Lambert, Nona C.	Vancouver
Dann, Roy W.	Vancouver	Larkin, Grant B.	Vancouver
		Lindsay, Robert	Nanaimo

FACULTY OF AGRICULTURE—FOURTH YEAR—(Continued)

Name	Home Address	Name	Home Address
Mowatt, J. Graham	Vancouver	Smith, Derward	Vancouver
MacDonald, M. Allan	Vancouver	Stephenson, L. Jacquelyn	Vancouver
Mackay, Margaret C.	Vancouver	Swartz, Burrell	Vancouver
McKinnon, Neil C.	New Westminster	Tinney, Arthur C.	Vancouver
Paulsen, Albert	New Westminster	Wallace, Myron T.	New Westminster
Roberts, Marion B.	Vancouver	Wilson, George A.	Vancouver

SECOND YEAR

*Augustus, Joseph	Steveston	*Milroy, James E.	Powell River
Blair, David J.	Steveston	Monk, Fred C. J.	Eburne
*Caldecott, Richard S.	Vancouver	Nilan, Robert A.	Vancouver
Cottingham, Reginald E.	Vancouver	Olliver, Muriel A.	Vancouver
*Denby, Lyall G.	Victoria	Olson, Philip E.	Hope
Dunbar, Margaret	Vancouver	*Rose, M. Willson	Mission City
Farrow, John V.	New Westminster	*Smith, D. Frederick	Brighthouse
*Gasperdone, Herbert C.	Vancouver	Stevens, Joan M.	Vancouver
*Hall, John G.	Rivers, Que.	*Still, Constance L. B.	Vancouver
*Hall, Sylvia R.	Kamloops	Taylor, Patricia E.	Vancouver
Hay, Norman Mack	West Vancouver	Webb, Halycone	Vancouver
Hewitt, Ruth L.	Vancouver	*Willis, Thomas G.	Keremeos
*Leavy, John A.	Vancouver	Winslow, Virginia A.	Prince Rupert
*Leavy, Leo F.	Vancouver	Woo, Effie	Vancouver
*Masters, L. Reay	Victoria	*Young, Soomee	Vancouver

THIRD YEAR

Axen, George C.	Brackendale	Miller, Ian McK.	Vancouver
*Bryant, Eleanor H.	Ocean Falls	McLeod, Melville C.	Vancouver
Burton, Margaret O.	Vancouver	Neilson, James A. S.	Vancouver
Cook, Fred D.	Smithers	Rush, George E.	Vancouver
Fleming, Ormond W.	Vancouver	*Stewart, Wilson B.	Vancouver
*Hutchinson, J. Marie	Vancouver	Terrace, James R. W.	Vancouver
Keenlyside, Thomas R.	Vancouver	*Wilkinson, Barclay R.	Vancouver
Lourie, Helene	Vancouver	Yip, Yen W.	Vancouver
Menzies, Vernon H.	Vancouver	*Young, Victor M.	Vancouver

FOURTH YEAR

Ash, A. Bruce	Vancouver	McLean, Alastair	Vancouver
Bell, Ralph R.	Vancouver	‡McManus, Gerald F.	Vancouver
Blair, Robert C.	New Westminster	McMillan, Robert H.	New Westminster
Buck, Paul A.	Vancouver	Patenaude, Wilfred H.	Horsefly
Gillingham, Jack T.	Victoria	*Pearson, Harold H.	Edmonton, Alta.
Gitterman, Charles O.	Vancouver	Pinchin, Victor L.	Vancouver
Goodwin, C. Rex	New Westminster	Reid, James A.	Vancouver
Haggart, Douglas A.	Vancouver	Reifel, George H.	Vancouver
Hammond, Paul L.	Vancouver	Robinson, John	New Westminster
Hanson, Angus A.	New Westminster	*Robson, Mabel G.	New Westminster
‡Hill, Robert W.	Vancouver	‡Weir, John	Trail
King, J. David	Vancouver	*Woods, Wilfrid E.	Vancouver
Lacey, Kathleen M.	Vancouver	Wright, Norman S.	Steveston
Marshall, Rexford S.	Kelowna		

GRADUATES

Awmack, Joseph W.	Vancouver	Mulvin, Mary L.	Vancouver
EEK, Catherine J.	Vancouver	Novikoff, Morris	Vancouver
Fennell, Edwin J.	White Rock	Tamboline, Florence R.	Ladner
Goodwin, Martin B.	Vancouver	Thomson, J. Lorraine	Vancouver
Inkster, Colin C.	Vancouver		

*Conditioned. ‡Partial.

REGISTRATION FOR 1943-44

FACULTY OF ARTS AND SCIENCE

	Men	Women	Total
First Year	376	224	600
First Year Home Economics .....	.....	36	36
			— 636
Second Year	176	159	335
Second Year Commerce	36	15	51
Second Year Home Economics .....	.....	25	25
			— 411
Third Year	133	113	246
Third Year Commerce	28	15	43
			— 289
Fourth Year	92	105	197
Fourth Year Commerce	33	9	42
			— 239
Graduates	67	40	107
Social Work	3	25	28
Teacher Training Course	4	22	26
Directed Reading Courses	87	62	149
Less Double Registrations (D.R.C.)	-26	-18	-44
			— 105
	1009	832	—1841

FACULTY OF APPLIED SCIENCE

Second Year	178	.....	178
Third Year	126	.....	126
Fourth Year	108	.....	108
Fifth Year	93	1	94
Graduates	10	.....	10
	515	1	516

NURSING

Second Year .....	.....	12	12
Third Year .....	.....	14	14
Fourth Year .....	.....	24	24
Fifth Year .....	.....	9	9
Sixth Year .....	.....	9	9
Certificate Course .....	.....	31	31
		99	99

FACULTY OF AGRICULTURE

First Year	25	4	29
Second Year	19	11	30
Third Year	14	4	18
Fourth Year	25	2	27
Graduates	5	4	9
	88	25	113
TOTALS	1612	957	2569

Summer Session 1943	183	146	329
Botany Evening Class 1943-44	9	20	29
Canadian Army University Course:			
Senior Level	33	.....	33
Junior Level	52	.....	52
			— 85

DEGREES CONFERRED

MAY, 1943

Faculty of Arts and Science

THE DEGREE OF MASTER OF ARTS

(Names in alphabetical order)

Barton, Norman, B.A.....	Major: Physics Minor: Mathematics
Thesis: "The Raman Spectra of Some Organic Materials and the Absorption Spectra of Liquid Oxygen."	
Browning, George Vernon, B.A.....	Major: Chemistry Minor: Physics
Thesis: War Research X-R-37.	
Collins, Thomas LeGear, B.A.....	Major: Physics Minor: Mathematics
Thesis: "The High Frequency Discharge Spectra of Dichloro-difluoromethane and Carbon Tetrachloride."	
Cox, Lionel Audley, B.A.....	Major: Chemistry Minor: Physics
Thesis: War Research C.E. 116.	
Dee, Henry Drummond, B.A.....	Major: History Minor: English
Thesis: "John Work: A Chronicle of His Life and a Digest of His Journals."	
Dickinson, Annie Emelyn, B.A.....	Major: Education Minor: English
Thesis: "An Investigation into the Generalizing Ability of Grade Two Pupils."	
Joubin, Francis Renault, B.A.....	Major: Geology Minor: Palaeontology
Thesis: "Geology of Babine-Bonanza (Cronin) Mine, B. C."	
Murphy, Mary, B.A.....	Major: Biology and Botany Minor: Zoology
Thesis: "Chromosome Aberrations in <i>Galtonia candicans</i> ."	
Parizeau, Paul Henri Delpé, B.A.....	Major: Zoology Minor: Biology and Botany
Thesis: "An Investigation of the Inter-Relationship of Growth and Regeneration."	
Tervo, Esther Frances, B.A. (Queen's).....	Major: English Minor: History
Thesis: "Milton's Conception of Liberty."	
Waddell, David Bryson, B.A.....	Major: Biology and Botany Minor: Chemistry
Thesis: "The Life History and Genetics of the Cerambycid Beetle <i>Phymatodes decussatus</i> Lec."	
Walker, Day, B.A.....	Major: Latin Minor: Education
Thesis: "Cicero and the Fall of the Republic, 49 B. C. to 43 B. C."	

Wood, John Edward, B.A. Major: Education
 Minor: Psychology
 Thesis: "The Relative Roles of Positive and Negative Instances in Concept Formation."

THE DEGREE OF BACHELOR OF ARTS

With Honours

(Names in alphabetical order)

Ashe, Geoffrey Thomas Leslie 1st Class Honours in English and Classics
 Aszkanazy, Clarisse Leonore 1st Class Honours in Bacteriology and Preventive Medicine
 Barnett, Joan Rosemary 1st Class Honours in History
 Blissett, William Frank 1st Class Honours in English Language and Literature
 Bridge, Tom 1st Class Honours in Zoology
 Broadhead, Ronald Leslie 1st Class Honours in Chemistry
 Brown, Harry 2nd Class Honours in Mathematics and Physics
 Casselman, Warren Gottlieb Bruce 1st Class Honours in Chemistry
 Clemens, Ann Morgan 1st Class Honours in Bacteriology and Preventive Medicine
 Cooper, Walter Charles 1st Class Honours in Chemistry
 Dwyer, Melva Jean 2nd Class Honours in History and French
 Elliott, Jean 1st Class Honours in English and French
 Erickson, Norma Anna 1st Class Honours in English and French
 Fell, James Michael Gardner 1st Class Honours in Mathematics and Physics
 Ferguson, William Cooper 2nd Class Honours in Mathematics and Physics
 Graham, Evelyn Fraser Murdoch 2nd Class Honours in Philosophy
 Grassie, Lillian May 2nd Class Honours in Chemistry
 Grieve, Kenneth Ewart 2nd Class Honours in History
 Halstead, John Gelder Horler 1st Class Honours in French and German
 Jackson, Roy Vincent 2nd Class Honours in Chemistry
 Jenkinson, Doreen Elizabeth 2nd Class Honours in Mathematics
 Kitson, Charlotte Edith 1st Class Honours in English Language and Literature
 Knotts, Walter Ernest 1st Class Honours in English Language and Literature
 Manning, Helen Brown 2nd Class Honours in History
 Matheson, Helen Ruth 2nd Class Honours in Chemistry
 Metcalfe, Stanley Walter 1st Class Honours in Chemistry
 Moran, Catherine 1st Class Honours in Chemistry
 Mundell, Percy Meldrum 2nd Class Honours in Chemistry
 McAllister, James Alexander 1st Class Honours in Classics
 MacDonald, Marion Alix Mary 1st Class Honours in Philosophy and Psychology
 McIntosh, Mary Bernice 2nd Class Honours in Psychology
 MacLeod, Robert Angus 1st Class Honours in Chemistry
 O'Neill, Albert Norman 1st Class Honours in Chemistry
 Pickering, Mary Gwendolyn 1st Class Honours in English and Philosophy
 Polglase, William James 2nd Class Honours in Chemistry
 Russell, Rosamund Ann 1st Class Honours in English Language and Literature

Seyer, John Frederick.....	1st Class Honours in History
Sullivan, Lucy Jane.....	2nd Class Honours in French
Vaughan, David Lisle.....	2nd Class Honours in Economics
Watson, Wilfred.....	1st Class Honours in English Language and Literature
Wright, Sydney Courtney.....	1st Class Honours in Mathematics and Physics

THE DEGREE OF BACHELOR OF ARTS

*General Course**(Names in alphabetical order in each class)**Class I*

Ball, Patricia E.	Edwards, Daima
Barss, Elizabeth M.	Lock, Vivian E. R.
Clark, Kathleen D.	Pethick, Derek W.
Dauphinee, Thomas McC.	Rice-Jones, W. Geoffrey
Dixon, Helen B.	Savitsky, Sonia
Dixon, William G.	Tatroff, Daniel P.

Class II

Appleby, John	Matthews, Charles A.
Bartholomew, Gilbert	Meredith, Patricia M.
Beaumont, Elizabeth N.	Mickelson, Cecil H.
Bell, Maureen	Milligan, Phyllis H.
Beveridge, E. Isabel	Mills, Laura E.
Bowett, J. Roy	Morley, Mona R.
Buckerfield, Mary I.	Moys, Margaret L.
Buller, Margaret H.	Macdonald, Shirley
Bunting, Rosamund G.	McMahon, Vernon H.
Burchell, Sheridan	NeMetz, Phyliss R.
Carson, John J.	Orchard, E. Joyce
Chatwin, Leonard W.	Peterson, Maryan A.
Claridge, Charles A.	Proudfoot, Agnes E.
Dalin, Winifred H.	Proven, Nettie I.
Emerson, Bruce E.	Robinson, Evelyn A.
Fisher, E. Brian	Robinson, Grant T.
Flynn, Margaret J.	Sinclair, Eleanor W.
Gardiner, Margaret H.	Slater, Mary A.
Gibbs, M. Gwendolyn	Snaddon, Andrew W.
Hanson, Don McK.	Spears, Dorothy H.
Harvey, Elizabeth E.	Stusiak, Joan
Hunter, Douglas R.	Telfer, Gwendolyn D.
Hutchinson, Hazel H.	Thomson, Helen
Isherwood, Thomas F.	Walker, Goldie E. C.
Jackson, Douglas L.	Warner, Mary E.
Jackson, Frances C.	Wells, James H.
Lewis, Eric E.	Wood, Betty Ray
Marrs, D. Laverock	Wood, George A.

Passed

Aicken, Alex C.	Lightstone, Robert
Arm, Marjorie J.	Long, Elizabeth G. B.
Berton, Lucy F. B.	Lourié, Marianne
Boond, Dorothy L.	Lowe, James

THE DEGREE OF BACHELOR OF ARTS—GENERAL COURSE—(Continued)

Brandt, Helen K.	Mabee, Jean M.
Burke, Cornelia C.	Mannix, Luella
Burris, D. Stewart	Matheson, Beryl A.
Carsley, Julie W.	Michas, Sophia
Chenoweth, Jocelyn D.	Moe, Barbara M.
Costello, M. Joan	Moyls, Amy C.
Creighton, J. Dundas	Mulhern, Merrie N.
Cullinane, T. Raymond	McMillan, Donald J.
Curry, Robert M.	McNeely, Charles J. H.
Daniell, Jocelyn M. D. B.	McPhee, Maurice D.
Davidson, Robert J. H.	Nevison, James H.
DesBrisay, Mary E.	Pronger, Ralph C.
DesBrisay, Ruth M.	Sankey, Gerald R.
Dickie, Bette F.	Sheeley, Ralph G.
Dilger, V. Vivian	Small, Fred
Gillard, S. Megan	Stevenson, Theodore K.
Hanbury, Arthur W.	Stewart, Elizabeth J.
Holland, Kathleen A.	Tait, Jean W.
Hunter, Harry	Tindle, Muriel A.
Hyslop, Mary I.	Twiss, Mary H.
Johnson, Eva C.	Uglov, Elizabeth R.
Johnston, Donald W.	Wallace, Betty
Jonson, Ruth Mary	Woo, Anne M.
Lee, Ruth	

THE DEGREE OF BACHELOR OF EDUCATION

(Names in alphabetical order)

Carter, Marjorie Elsie, B.A.	Greenwood, Louis William, B.A.
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THE DEGREE OF BACHELOR OF COMMERCE

(Names in alphabetical order in each class)

Class I

Grigg, Vernon H.	Roussel, David M.
Hall, Hugh U.	Winram, Edna E.
Mercer, William M.	

Class II

Beddome, Anne C.	Francis, Ida C.
Fields, Donald B.	Wilson, James H.
Ford, Robert W., B.A.	Wolverton, Newton E.

Passed

Barton, Arthur S.	Long, Elizabeth G. B.
Bollans, Frank L.	Mahood, Brian H.
Gourlay, John L.	Mann, William T.
Goyer, Gertrude E.	Mannix, Luella
Horton, Kenneth G.	Morrison, J. Lee
Hutchison, George T.	Murray, Robert N.
Inman, Harry C.	Ritchie, Hugh J.
James, Douglas A.	Robinson, Eric W.
Lloyd, Moira C.	Welsford, William D.
Long, Charles F.	

Faculty of Applied Science

THE DEGREE OF MASTER OF APPLIED SCIENCE

(Names in alphabetical order)

- McLellan, Donald Ellis, B.A.Sc.....Chemistry and Mechanical
Engineering
Thesis: "Specific Heat and Heat of Transition of Cis Decahydronaphthalene."
Rush, Ian Cameron Macdonell, B.A.Sc.....Chemistry and Mechanical
Engineering
Thesis: War Research X-R-36.
Thompson, Robert Mitchell, B.A.Sc.....Geology
Thesis: "Minor Elements in Sphalerite and Some Associated Minerals."

THE DEGREE OF BACHELOR OF APPLIED SCIENCE

(Names in alphabetical order in each class)

Chemical Engineering

Honours

- | | |
|-----------------------|-----------------------|
| Buck, F. A. Mackinnon | McLeod, A. Allan |
| Graham, Harold M. | Stusiak, Michael |
| Mann, Clarence W. J. | Williams, F. Campbell |

Class I

Cochran, John

Class II

- | | |
|----------------------|---------------------|
| Buckland, John A. C. | McCay, James T. |
| Campbell, George C. | Pyle, Robert G. |
| Day, Alvin A. | Sweeney, Maxwell P. |
| Green, Walter C. | Weiner, Harry S. |
| Hole, John S. | White, Ronald J. |
| Horne, Leslie R. | Zabinski, John |
| Miller, Joseph G. | |

Passed

- | | |
|---------------------|----------------------|
| Anderson, Harold W. | Priest, Jack |
| Gordon, Arthur D. | Selby, Roy E. |
| King, A. David | Steel, William E. J. |

Civil Engineering

Honours

Rogers, Cecil G.

Class II

- | | |
|--------------------|--------------------|
| Baker, D. Leacroft | Thompson, James V. |
| Copp, Stanley S. | |

Electrical Engineering

Honours

- | | |
|----------------------|--------------------|
| Carter, Ronald B. | Gordon, Francis J. |
| Fraser, George B. R. | Gray, John S. |

THE DEGREE OF BACHELOR OF APPLIED SCIENCE—(Continued)

Class II

Baldwin, John H. G.
 Bourne, Edward A.
 Handforth, R. Victor L.
 Hayles, Oliver J.

Miller, Richard C.
 Patterson, Lawrence A.
 Patterson, Stanley G.

Passed

Elliott, Albert H.
 Gardiner, Alexander H., B.A.
 Jessup, Douglas G.
 Leong, Dennis T. S.

McLellan, Leonard R.
 Roberts, Stanley C.
 Stewart, Allan J.

Forest Engineering*Class I*

Backman, Arvid H. V.

Class II

Creighton, John D.
 Kullander, Marvin O.

Schiedel, Ian H.

Geological Engineering*Honours*

McTaggart, Kenneth C., B.A.

Class II

Deane, Roy E.

Passed

Blanchet, Peter H.
 Drummond, Alan S.

DeLeen, John L.
 MacRae, Hector R.

Mechanical Engineering*Honours*

Bannerman, Donald K.
 Coverdale, Harold M.
 Elgar, Everett C.

Norton, Eric H.
 Weed, Joseph D.

Class I

Rogers, John S.

Class II

Blake, Donald H. R.
 Brynelsen, John A.
 Cox, Leonard
 Dunell, G. Eric
 Goodwin, Walter H., B.A.
 Haddad, Michael A.
 Hammond, John S. N.
 Hutchinson, Bruce

Mason, Ernest
 Miller, James W.
 Roach, Stewart W.
 Roxburgh, J. Malcolm
 Smith, Frank F.
 Spaetgens, Theodore W.
 Sutcliffe, E. Douglas

Passed

Carlyle, D. Gordon
 Harrison, John S. M.

Lear, Harold K.

Metallurgical Engineering*Class II*

Beley, John P.
 Benson, Edward

Evans, Donald C.
 McCulloch, James P.

Passed

Livingstone, Hughie

THE DEGREE OF BACHELOR OF APPLIED SCIENCE—(Continued)

Mining Engineering*Honours*

Smith, William R.

Class II

Blair, William B.

Sinclair, G. William

Gill, Norman A.

Passed

Hatch, Noll J.

THE DEGREE OF BACHELOR OF SCIENCE IN FORESTRY

Class II

Foster, Raymond E., B.A.

Passed

Pickford, John W., B.Com.

Nursing and Health*(Names in alphabetical order in each class)**Class I*

Dunfield, Mary F.

Ross, F. Mary

Class II

Banford, Pauline E., B.A.

Jenkins, A. Elizabeth

Beveridge, Margaret A.

Robertson, Margaret, B.A.

Breeton, Barbara A.

Walker, J. Marie

Campbell, E. Jean, B.A.

Worrall, Mrs. Jeanne E.

Goble, Margaret A.

Wright, Leora R.

Faculty of Agriculture

THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE

*(Names in alphabetical order)*Anstey, Thomas Herbert, B.S.A. Major: Plant Nutrition
Minor: HorticultureThesis: "The Effect of Varying Fertilizer Constituents on the Food Value of the Carrot (*Daucus carota*) with Special Reference to Nitrogen, Carotene and Vitamin C."Crossley, John Hartley, B.S.A. Major: Plant Nutrition
Minor: Horticulture

Thesis: "The Effect of Controlled Temperatures and Ethylene Chlorohydrin on Skin Color and Rest Period of Tulip Bulbs Lifted at Various Stages of Maturity."

Eek, Catherine Jörge, B.S.A. Major: Agronomy
Minor: BotanyThesis: "Association of Economic Factors in *Rhizoma Alfalfa*."

THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

*(Names in alphabetical order in each class)**Class I*

Awmack, Joseph W.

Roe, John A.

Bradner, Frank E.

Shore, Alan W.

Moyls, Adrian W.

Tamboline, Florence R.

Mulvin, Mary L.

Turner, Stuart W.

McDonald, Ian J.

Woodward, Eugene D.

THE DEGREE OF BACHELOR OF APPLIED SCIENCE IN AGRICULTURE—(Continued)

Class II

Brown, Ivan T.
Cook, Douglas T.
Fitz-James, Philip C.
Green, Charles A.
Killick, Stanley R.
Logan, H. Fitzgerald

Lourié, Marianne
Merryfield, Jack W.
MacLean, Donald W.
Swackhamer, David
VanHorne, H. Bircham
Walker, Josephine G. E.

Passed

Claydon, George W.
Sandall, Frances W.

Stewart, Hugh MacL.

DEGREES CONFERRED

OCTOBER, 1943

Faculty of Arts and Science

THE DEGREE OF MASTER OF ARTS

(Names in alphabetical order)

- Boroughs, Robert Joseph, B.A. Major: History
Minor: Education
Thesis: "A Study of British Public Opinion in Regard to Germany, 1890-1914."
- Burnett, John Napier, B.A. Major: Economics
Minor: Education
- Goranson, Ewald Swan, B.A. Major: Zoology
Minor: Biology and Botany
Thesis: "The Antithyrogenic Effect of Thiamine, Riboflavin, and Pyridoxine on the Basal Metabolic Rate, after Induced Hyperthyroidism."
- Henderson, Mary Elizabeth Park, B.A. Major: English
Minor: Education
Thesis: "T. L. Peacock's Criticism of His Literary Contemporaries."
- Marcuse, Katherine Louise, B.A. Major: English
Minor: Psychology
Thesis: "The Poetry of W. H. Auden."
- Merrell, Edgar Johnston, B.A. Major: Education
Minor: Psychology
Thesis: "An Investigation of the Effect of the Type of Music Upon Mental Test Performance of High School Students."
- Reid, Constance Martha, B.A. Major: French
Minor: Education
Thesis: "Paul Bourget."
- Woodward-Reynolds, Kathleen Marjorie, B.A. Major: History
Minor: Education
Thesis: "A History of the City and District of North Vancouver."

THE DEGREE OF BACHELOR OF ARTS

With Honours

(Names in alphabetical order)

- Lipsett, Catherine Mary.....1st Class Honours in French
- Matheson, Ian Donald.....1st Class Honours in Biology (Forestry Option)
- Rowebottom, Howard George.....2nd Class Honours in Economics
- Teager, William Arthur.....1st Class Honours in Philosophy and Psychology

THE DEGREE OF BACHELOR OF ARTS

*General Course**(Names in alphabetical order in each class)**Class I*

Bradley, Mary E. Lansdowne, Rosemary

Class II

Christopherson, Kathleen
 Curtis, Alice M.
 Francis, Margaret V.
 Hendrickson, Inga
 Hoffman, Pearl
 Jones, Wilfred C.
 Kennedy, Everett B. M.
 Locke, Mary Elizabeth
 McArthur, Helen M.
 McDiarmid, Lorna M.
 Macdonald, John L.
 McKay, Donald H.
 McKenzie, Kenneth R.

McLeary, Nan P.
 Nesbitt, Clifford E.
 Newton, June
 Oakes, Lila Mae
 Parminter, Alfred V.
 Ricketts, Donald B.
 Ross, Donald H. M.
 Seivewright, Pamela M.
 Sorochan, John
 Taylor, G. Stewart
 Walker, Phyllis M. S.
 Williams, Florence E.

Passed

Bennett, John N.
 Bingham, William J.
 Bonutto, Alfred L.
 Brown, Florence M.
 Cook, Frederick G.
 Crosby, Marjorie E. L.
 Drysdale, Norma K.
 Fairall, Wallace H.
 Farina, A. John O.
 Hackney, Amy L.

Hungerford, F. Mary
 Mark, Malcolm A.
 Nelles, Thelma M.
 Patterson, Arthur M.
 Peyman, R. Alastair D.
 Primrose, Neil
 Ritchie, Marjory E.
 Roche, R. Gordon
 Shore, Alma M.
 Young, Honorée G.

THE DEGREE OF BACHELOR OF COMMERCE

Clark, Kenneth P.

THE DEGREE OF BACHELOR OF EDUCATION

*(Names in alphabetical order in each class)**Class I*

Fowler, Horace W., M.A.

Class II

Fitzpatrick, Dudley M., B.A. Hockridge, C. Murray, B.A.

Faculty of Applied Science

THE DEGREE OF BACHELOR OF APPLIED SCIENCE

Geological Engineering*Passed*

Parry, Edward J.

Faculty of Agriculture

THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

*(Names in alphabetical order in each class)**Class II*

Goodman, Martin H.
 Goodwin, Martin B.

Shaw, Henry A.

THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE—(Continued)
Passed

Fergusson, Conrad N.

THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE

Neilson, Nora Effie, B.S.A. Major: Dairying
Minor: Agronomy

Thesis: "Studies on the Amino Acid Metabolism of Bacteria Responsible for Surface Taint in Butter."

MEDALS, SCHOLARSHIPS, PRIZES, AND BURSARIES

AWARDED MAY, 1943

MEDALS

The Governor-General's Gold Medal (Head of Graduating Class for the B.A. Degree)..... Daima Edwards
The Kiwanis Club Gold Medal (Commerce)..... Edna E. Winram
The United Empire Loyalists' Association Medal and Prize (History)
Donald J. Sceats
The Lefevre Gold Medal and Scholarship (Chemistry)..... W. Charles Cooper
The Wilfrid Sadler Memorial Gold Medal (Head of Graduating Class for the B.S.A. Degree)..... Florence R. Tamboline

SCHOLARSHIPS FOR GRADUATES

University Graduate Scholarship, \$200.00..... Wm. Geoffrey Rice-Jones
The Anne Wesbrook Scholarship, \$125.00..... Jean Elliott, relinquished
The Dr. F. J. Nicholson Scholarships:
1. For Chemistry, \$500.00 } Equal
Albert N. O'Neill and A. Allan McLeod } \$250.00 each
2. For Geology, \$500.00 } No Award
The Ahepa Scholarship (Proficiency in Greek), \$75.00
Geoffrey T. L. Ashe, relinquished
The Native Daughters of British Columbia Scholarship, \$50.00
(Early B. C. History)..... Henry D. Dee, B.A.
The B'nai B'rith District No. 4 Hillel Foundation Scholarships, \$125.00 each:
1. Ann M. Clemens.
2. Florence R. Tamboline.
The Standard Oil Company of British Columbia Limited Scholarship, \$600.00
Clarence W. J. Mann

SCHOLARSHIPS FOR UNDERGRADUATES

I. IN ALL FACULTIES

University Great War Scholarships (First Year) \$175.00:
1. Robert G. Adams.
2. Cameron J. McFeely.

II. IN ARTS AND SCIENCE

Third Year

University Scholarships in Arts and Science (general proficiency), \$175.00:
Group (1)—John H. Crookston, relinquished.
Group (2)—Wilma G. Smith.
The N. Leo Klein Memorial Scholarship (general proficiency, Commerce) \$50.00
Robert S. Whyte
The John and Annie Southcott Memorial Scholarship, \$100.00
(B. C. History)..... David M. Farr

SCHOLARSHIPS FOR UNDERGRADUATES—(Continued)

Second Year

- University Scholarships in Arts and Science (general proficiency), \$175.00:
 1. Mary Quan.
 2. Margaret F. Croll.
 The Shaw Memorial Scholarship (First in two of English, Latin and Greek)
 \$125.00.....Aldythe M. Ireland
 The McGill Graduates Scholarship (First in English and French) \$125.00
 Margaret F. Croll by reversion to Ruth L. White
 The Terminal City Club Memorial Scholarship (First in English and Eco-
 nomics), \$100.00.....Marjorie C. L. Smith
 The Vancouver Women's Canadian Club Scholarship (First in Canadian His-
 tory), \$100.00.....Leslie A. Raphael

First Year

- Royal Institution Scholarship (general proficiency), *\$175.00
 Felix A. E. Pirani
 University Scholarships in Arts and Science (general proficiency), *\$175.00:
 1. Donald H. James.
 2. J. Neil Henderson.
 The Beverley Cayley Scholarship (First male student in English), \$100.00
 Allan H. Ainsworth

III. IN APPLIED SCIENCE

- The Vancouver Women's Canadian Club Scholarship in Nursing and Health,
 \$100.00.....Phyllis S. Rowe
 The Dunsmuir Scholarship (Highest in Mining Engineering, proceeding to
 the Fifth Year), \$150.00.....No Award
 University Scholarship in Applied Science (general proficiency, proceeding to
 the Fourth Year), \$225.00.....George C. Best
 Royal Institution Scholarship in Applied Science (general proficiency, pro-
 ceeding to the Third Year), \$225.00.....Geoffrey V. Parkinson
 The G. M. Dawson Scholarship (Highest in Geological Engineering—Geological
 subjects, proceeding to the Fifth Year), \$50.00.....No Award
 The B'nai B'rith Auxiliary No. 77 Scholarship (highest in Chemical Engineer-
 ing, proceeding to the Fifth Year), \$50.00.....A. Desmond Turner

IV. IN AGRICULTURE

- University Scholarship in Agriculture (general proficiency, proceeding to the
 Second Year), \$175.00.....V. Anne Winslow
 The David Thom Scholarship (general proficiency, proceeding to the Third
 Year), \$100.00.....Walter J. Oliver
 The British Columbia Fruit Growers' Association Golden Jubilee Scholarship
 (proceeding to the Horticultural Course of the Fourth Year), \$100.00
 Rexford S. Marshall
 The Imperial Order Daughters of the Empire Scott Memorial Scholarship,
 \$100.00.....Angus A. Hanson

PRIZES

I. IN ALL FACULTIES

- The University Essay Prize (Books), \$25.00.....Geoffrey T. L. Ashe
 English Department Essay Prize.....Holger O. V. Nygard
 The Players' Club Prize (Original Play), \$50.00.....No Award
 The Dorothy and William Dorbils Prize, \$50.00,
 (Canadian Literature).....Wilfred Watson

*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—(Continued)

II. IN ARTS AND SCIENCE

The University of British Columbia Graduate Historical Society Prize (Books), \$25.00.....	Joan R. Barnett
The Frances Willard Prize, \$50.00.....	} Equal
Rosemary Lansdowne and Donald B. Ricketts } \$25.00 each	
The David Bolocan Memorial Prize, \$25.00.....	Marion A. M. MacDonald
The Dorothy and William Dorbills Prize, \$50.00 (Bacteriology and Preventive Medicine).....	} Equal
C. Leonore Aszkanazy and Ann M. Clemens } \$25.00 each	

III. IN APPLIED SCIENCE

The Convocation Prize (general proficiency in Fifth Year), \$50.00	Donald K. Bannerman
Engineering Institute of Canada, Vancouver Branch, Walter Moberly Memorial Prize (Engineering Thesis in Fifth Year) (Books), \$25.00:	
Leonard Cox (Mechanical Engineering) "The Design and Construction of Tools to Fabricate a Welded Metal Bracket."	
The Association of Professional Engineers' Prizes (Books), \$25.00 each:	
1. A. John Shaw, Chemical Engineering, "Historical Review of Moisture Determination Methods."	
2. Charles H. Clay, Civil Engineering, "The Hell's Gate Problem."	
3. Ronald J. Legeer, Electrical Engineering, "Horne Payne Substation, B. C. Electric Railway Company."	
4. Charles A. Carncross, Mechanical Engineering, "Problem of Compress- ing Peat Moss for Use in the Manufacture of Magnesium."	
5. James E. Goodman, Metallurgical Engineering, "Suspension Roasting of Zinc Concentrate of The Consolidated Mining and Smelting Company of Canada, Limited, Trail, B. C."	
The Provincial Board of Health Prizes in Public Health Nursing, \$100.00:	
1. M. Stelle Langstaff, \$50.00.	
2. F. Mary Ross, \$50.00.	
The Engineering Institute of Canada Prize (Fourth Year), \$25.00	Stanley J. Beaton
The British Columbia Lumber and Shingle Manufacturers' Association Prizes:	
1. Alvin J. Narod.....	\$100.00
2. Vaughan L. Mosher.....	\$50.00
3. John M. Wallace.....	\$25.00
	} Additional Prizes

BURSARIES

The Captain LeRoy Memorial Bursary (preference to returned soldiers or dependents), \$150.00.....	Marion A. M. MacDonald
The Khaki University and Y. M. C. A. Memorial Fund Bursaries, \$100.00 each, (in alphabetical order):	
1. Richard W. A. Attree.	6. Donald C. McLeod.
2. Edna D. Baumbrough.	7. John Wm. Nelson.
3. John H. Climie.	8. Elizabeth J. Ore.
4. John Grant Hannan.	9. Gwenneth L. Pearson.
5. Kenneth D. Houghton, relinquished.	10. Donald B. Robinson.
The University Women's Club Bursary, \$100.00.....	Blodwen Thomas
The Geldart Riadore Bursary, \$175.00.....	Kathleen M. Lacey

AWARDED AFTER THE MAY CONGREGATION

University and Royal Institution Scholarships for University Entrance:	
Provincial—\$175.00.....	Donald G. Brown
District 1—\$175.00 (Victoria College).....	Iva Lisicka
\$175.00 (Victoria College).....	Gwendolyn M. Shaw
*District 2—\$175.00.....	Darryl K. Foerster
\$175.00.....	Richard A. Gritten
Special—\$175.00.....	Dennis Kershaw
	relinquished and not re-awarded
District 3—\$175.00.....	Elizabeth A. Booth
\$175.00.....	Barbara N. Cumming
District 4—\$175.00.....	David W. Morgan
\$175.00.....	John H. Duffus
District 5—\$175.00.....	S. John A. Vandrick
\$175.00.....	Linda C. Rosen
District 6—\$175.00.....	Agnes E. Mehling
	by reversion to Isobel J. D. Butters
\$175.00.....	Leonard G. Miller
*District 7—\$175.00.....	Eric J. Dawson
	by reversion to I. John DallaLana
	by reversion to Catherine M. Clark and Linda J. Montemurro
	relinquished and not re-awarded
\$175.00.....	Colin W. Fraser
	relinquished and not re-awarded
Special—\$175.00.....	William Leith
*Special scholarships provided because of a tie.	
University and Royal Institution Scholarships for Senior Matriculation:	
Provincial—\$225.00.....	Edgar B. Horne
\$175.00.....	John D. Ross
\$175.00.....	P. Bridget White
\$175.00.....	Miriam K. Spencer
	by reversion to Marjorie Williams
\$175.00.....	James E. Hoover
	by reversion to Jean G. Sinclair
\$175.00.....	Beatrice E. Olson
\$175.00 (Special).....	Helen I. Labron
	by reversion to Norah M. Fisher
	by reversion to Violet O. Katainen
\$175.00 (Special).....	Alexander A. Allan
	relinquished and not re-awarded
Alumni Association Bursary, \$50.00.....	Beryl Gaff
American Woman's Club Bursary, \$100.00.....	Phyllis Mikkelson
Inter-Sorority Alumnae Club Bursary, \$200.00,	
awarded equally to Lillian Grace Beresford and Mary Alynn Slater	
(\$100.00 each)	
Faculty Women's Club Bursary, \$75.00.....	Berta Barbara Redlich
Lady Laurier Club Bursary, \$50.00.....	Norma Anna Erickson
Frances Milburn Bursary, \$150.00.....	Muriel A. I. McDiarmid
Mildred Brock Memorial Bursary, \$75.00.....	Julia Van Gorder
Flying Officer Reverend George Robert Pringle Memorial Bursary, \$200.00,	
	Arthur Clark Johnson
William MacKenzie Swan Memorial Bursary, \$250.00.....	Alvin J. Narod
David Thom Bursary, No. 1, \$87.50.....	Nona Christine Lambert
David Thom Bursary, No. 2, \$50.00.....	No Award
David Thom Bursary, No. 3, \$60.00.....	Clive Rex Goodwin

AWARDED AFTER THE MAY CONGREGATION—(Continued)

Khaki University and Y.M.C.A. Memorial Fund Bursary, \$100.00, relinquished by Kenneth D. Houghton, awarded to Terence S. Julian	
University Scholarship in Arts and Science (Third Year), \$175.00, relinquished by John Crookston, awarded by reversion to Donald G. Ivey	
Ahepa Scholarship, relinquished by Geoffrey C. Ashe, awarded by reversion to James A. McAllister, \$75.00	
Phil Wilson Bursary in Forestry, \$225.00	David Murray Roussel
Alliance Française Bursary \$25.00	No Award
Delta Gamma Bursary for the Blind, \$100.00	No Award
The British Columbia Teachers' Federation Scholarship, \$50.00	No Award
The Summer Session Students' Association Scholarship (Completing the Second Year with the highest standing), \$30.00	John I. Goodlad
The Britannia Mining and Smelting Company Limited Scholarship	
William Roy Smith, B.A.Sc. }	Jointly, \$125.00 each
Donald Carlisle, B.A.Sc. }	
The Cariboo Gold Quartz Mining Company Limited Scholarship, \$100.00	John Louis DeLeen, B.A.Sc.
The University Scholarship in Nursing and Health, \$175.00	Ann Elizabeth Scoones
The J. M. Taylor Bursary in Metallurgy	
Donald Allan Currie }	Jointly, \$75.00 each
James Erin Goodman }	

THE UNIVERSITY OF BRITISH COLUMBIA

UNIVERSITY SUMMER SESSION, 1945

Seven Weeks—July 3rd to August 17th

The Announcement of the courses to be offered in a Summer Session will be issued in January if possible.

No course may be offered for which there are fewer than eight registrations. Students, therefore, desiring any courses, particularly Third and Fourth Year courses, are requested to advise the Director of the Summer Session as early as possible and not later than May 15 as to the courses desired. If the demand for these courses seems adequate, an effort will be made to offer them.

The regulations, etc., governing the Summer Session, the Directed Reading courses, and the Extra-sessional classes follow.

COURSES LEADING TO THE DEGREE OF B.A.

1. The degree of B.A. will be granted on completion of courses amounting to 60 units chosen in conformity with Calendar regulations. (See pages 81-87.)

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 87), 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 prerequisite 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, otherwise only at the opening of the Summer Session.

(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 87, 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 prerequisite 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, the B.Ed. 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 University Entrance 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 University Entrance 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 40.

EXAMINATIONS AND ADVANCEMENT

1. Summer Session examinations are held at the close of the Summer Session. Students attending Extra-sessional classes will be tested by the ordinary Winter Session examinations.

2. The passing mark on each paper is 50 per cent. Credit, however, will not be granted for any part of a course until the whole course has been completed. Part courses in different subjects may not be combined.

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

4. Supplemental examinations may be granted by Faculty to students attending the Summer Session or the Extra-sessional classes in the subject or subjects in which they have failed, but a student obtaining less than 30 per cent. in a subject will not be granted a supplemental in that subject. 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.

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 a comprehensive and varied programme of 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, in accordance with the experience gained, were rejected, modified, or accepted as the basis for a more permanent programme. As a result a practicable policy has been 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, cultural, and economic life of the Province.

From 1938 to 1941, at which time the rural programme was suspended because of war conditions, the Department of University Extension cooperated with the Dominion and Provincial Departments of Labour in the Dominion-Provincial Youth Training Plan. Since 1940 the Department of University Extension has been cooperating with the Dominion Department of Fisheries in providing an educational programme for British Columbia fishermen. For the past two years the Department of University Extension, in conjunction with the Department of Labour, has conducted a series of short courses in Personnel Management. The Department is also conducting film circuits in the rural areas for the National Film Board and the War Information Board.

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) *Study Groups.*

Study group courses are offered each year. These include:

- (i) Canada and the Post War World.
- (ii) Community Clinic.
- (iii) Modern Literature.

- (iv) British Columbia History.
- (v) Child Psychology for Parents.
- (vi) Art Appreciation.
- (vii) Music Appreciation.
- (viii) Acting for Seniors.
- (ix) Acting for Juniors.
- (x) Public Speaking.
- (xi) Introduction to the Cooperative Movement.
- (xii) Credit Unions.
- (xiii) The Cooperative Buying Club.
- (xiv) Introduction to Navigation.

(d) *Visual Instruction.*

- (i) Lantern and Film Slide Service. Approximately 900 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 450 educational subjects has been established. Films from the National Film Board and the National Film Society are distributed in British Columbia through the Extension Department. A catalogue listing the films may be obtained upon application.

(e) *Dramatics.*

During the winter the Department offers short courses in dramatics, as well as correspondence courses and general assistance to drama groups throughout the Province. The regular Summer School of the Theatre has been suspended for the time being, owing to war conditions. A large lending library of plays and books on the theatre has been established.

(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 maintained for the purpose of providing good books in fields of current interest for groups and individuals throughout the Province. Pamphlets on a wide variety of topics are available on request.

(h) *Radio.*

For the past three years the Department has cooperated with the National Farm Radio Forum in organizing listen-

ing groups throughout the Province of British Columbia. During the winter of 1943-44 it also cooperated with the Canadian Broadcasting Corporation and the Canadian Association for Adult Education in forming Citizens' Forums for the programme "Of Things to Come." For the "U. B. C. Music Hour" of the Canadian Broadcasting Corporation, recordings are selected from the Carnegie Music Set.

In 1941 and 1942 the Department conducted a Summer School in Radio Script Writing. This has been temporarily suspended owing to war conditions. The Extension Library includes radio texts and plays.

(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. Courses in Music Appreciation and in Art Appreciation have been specially prepared by well-known artist-teachers and are available to study groups throughout the Province.

A phonograph record loan service has been established for the use of music appreciation groups.

(j) *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 Cooperatives to British Columbia fishermen.

(k) *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 SERVICE TRAINING CORPS

Prior to September, 1939, the University of British Columbia Contingent, Canadian Officers' Training Corps, provided opportunities for University students to obtain War Office certificates of qualification as officers in the Canadian Militia and other Empire forces. At the outbreak of the war the training syllabus for the Corps was modified so that students might take the regular Army qualifying examinations.

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.

On November 22, 1941, the University Armoury was officially opened by His Honour Colonel Wm. C. Woodward. This building, 176 by 110 feet, cost approximately \$50,000.00. In addition to the drill floor it contains an orderly room, offices, locker rooms, showers, lecture rooms, officers' mess, dining room, and kitchen. Since 1928 all officers and men on the strength of the Unit have waived their Local Headquarters training pay. The funds thus accumulated have been used to provide accommodation for the Corps.

On September 22, 1943, a \$29,000.00 addition to the Armoury was formally presented to the Chancellor, the President, and the Board of Governors at a dinner held in the Armoury.

At December 1, 1943, the strength of the Corps was as follows:

Officers	35	
Other Ranks	859	(including 61 O.R.'s. in "I" — Company at Victoria College)
Total	894	

Students who join the U. B. C. Contingent of the C. O. T. C. may go on active service in any of the three Services on leaving or graduating from the University.

General supervision over the Service training on the campus is exercised by the University Committee on Military Education appointed by the Senate of the University. Lt.-Col. G. M. Shrum, M.M., Officer Commanding the Canadian Officers' Training Corps, is also the Senior Officer Commanding, University Service Training Corps.

On March 29, 1943, the Board of Governors approved the establishment of a University Naval Training Division. Lieut. H. M. McIlroy of the Canadian Officers' Training Corps was appointed Lieutenant-Commander (Special Branch) and Officer Commanding the U. N. T. D. On December 1, 1943, the strength of the U. N. T. D. was one officer and 152 ratings. The purpose of the U. N. T. D. is to give specialized training to students who are definitely going on active service with the Navy on leaving or graduating from the University. All students training with the U. N. T. D. are attested members of the R. C. N. V. R.

On June 28, 1943, the Board of Governors approved the establishment of a squadron of the University Air Training Corps, and Captain J. A. Harris of the Canadian Officers' Training Corps was appointed Temporary Squadron Leader and Officer Commanding the squadron. On December 1, 1943, the strength of the U. A. T. C. was three officers and 257 other ranks. The purpose of the U. A. T. C.

is to give specialized training to students who have definitely decided to join the R. C. A. F. on leaving or graduating from the University.

Although the C. O. T. C. files do not contain a complete record of all University students who have enlisted for active service, the following is the number of enlistments recorded for the period September 3, 1939 to January 20, 1944:

Navy	238
Army	508
Air Force	548
Total	<u>1294</u>

Each service has an orderly room in the Armoury and students wishing information should call at one of these orderly rooms.

SUMMARY OF TRAINING PROVISIONS OF THE POST-DISCHARGE RE-ESTABLISHMENT

(ORDER P.C. 7633)

Department of Pensions and National Health

January 1, 1944

University Training

I. *Undergraduate Students (Paragraph 8, P.C. 7633).*

The Minister has authority to approve training, including maintenance grant and fees—together with appropriate allowances for dependents,—to any discharged person who has the aptitude and inclination and who

- (a) has been regularly admitted to a university before his discharge and resumes within one year and three months after discharge a course, academic or professional, interrupted by his service, or
- (b) becomes regularly admitted to a university and commences any such course within one year and three months after his discharge; or
- (c) because of ill health or because his admission to the university has been conditional upon his fulfilling some additional matriculation requirements or for any other good reason shown to the satisfaction of the Minister delays resumption or commencement of such course beyond the aforementioned periods.

The period of assistance in university training is governed by the length of service. *Where progress is satisfactory, the assistance may be continued for as many months, in university, as the man served in the Forces.* If the student's progress and attainments in his course are such that the Minister deems it in his interest and in the public interest, the payment of the grant may be extended beyond the period of service to permit the man to complete his course.

However, the grant shall not be continued to any such person who fails in more than two classes or subjects in any academic year, nor to any such person who having failed in either one or two classes or subjects also fails in either or both supplementary examinations next offered by the university in such classes or subjects.

NOTE. "*Attainments*" means unconditioned standing in the top 25 per cent of his class on the final examinations on the full work of the year next preceding the year in which his period of entitlement expires.

II. Graduate Students (Paragraph 9, P.C. 7633).

In case any discharged person

- (a) *has entered upon a graduate course, either academic or professional, in a university before enlistment, or was about to do so at the time of his enlistment, or having completed his undergraduate course in a university after his discharge, enters upon a graduate course as aforesaid, and*
- (b) resumes or commences such graduate course within
 - i. one year from his discharge, or
 - ii. one year from the commencement, next following his discharge, of such course in such university, if his discharge precedes such commencement by not more than three months, or
 - iii. in the case of a discharged person who completes his undergraduate course after his discharge, as soon as may be after such completion, if the Minister, having considered such person's attainments and his course, deems it in the public interest that he should continue such course, the Minister may, subject to the provisions of this Order, authorize the payment to such person of a maintenance grant and fees for as many months as he served. The assistance may be extended if the progress and *achievements* are so outstanding that it is in the public interest that the grant should be continued.

Vocational, Technical, or Other Educational Training

(Paragraph 6, P.C. 7633.)

This makes provision for

- (1) resumption of education leading to high school graduation or matriculation;
- (2) "refresher" or "brush-up" courses in the professions.

The Minister has authority to approve training, including maintenance grant and fees—together with appropriate allowances for dependents,—to any discharged person, provided he has the aptitude and inclination, where

- i. such person is pursuing vocational, technical, or other educational training;
- ii. the Minister approves such training as being training which will fit him or keep him fit for employment or re-employment or will enable him to obtain better or more suitable employment, and
- iii. he makes progress in such training to the satisfaction of the Minister.

NOTE. This training is governed by the length of the man's service in the Forces, with a maximum of twelve months.

Maintenance Grants

A "grant" under the provisions of paragraphs 6, 8, or 9 of this Order means a grant at the rate of \$60.00 per month in the case of an unmarried person and at the rate of \$80.00 per month in the case of a married person, together with, in either case, such additional allowance for dependents, if any, as is provided by subparagraph 3 hereof, and, in either case, reduced by such amount on account of any pension, wages, salary, or other income such person may have received or be entitled to receive in respect of the period for which such grant is paid, as to the Minister seems right.

(Sub-paragraph 3). Additional allowance may be paid to or on behalf of the following dependents at the following rates per month and subject to the following conditions:

Additional allowance for person in lieu of wife.....	\$20.00
Additional allowance for one child.....	12.00
Additional allowance for second child.....	12.00
Additional allowance for third child.....	10.00
Additional allowance for each subsequent child not in excess of three.....	8.00
Additional allowance for parent or parents.....	15.00

STUDENT ORGANIZATION

Alma Mater Society

President: Richard M. Bibbs.
Secretary: Helen E. Morgan.
Treasurer: Kenneth D. Creighton.

The Alma Mater Society with its governing executive, the Students' Council, handles all student activities. Each student on admittance to the University automatically becomes a member of the Society. The nine members of Students' Council are elected from the two upper years every spring, to take office the following year. They control activities of the students and of the clubs and societies under the Alma Mater Society, and are responsible for student discipline.

Funds for the Society are obtained from the compulsory fee of \$7.00 per student, plus a compulsory levy of \$3.00 for retirement of the Brock Memorial Building bonds and a fee of \$3.00 for the Pass System, a total of \$13.00.

Students may take part in many sports, in debating and public speaking, and in other activities noted below. No student, however, will be allowed during the session to take part in athletic competition or games for any team or organization 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.

Administrative Facilities

For the use of the students, and to carry on the business of the Society, the Students' Council maintains an office in the Brock Memorial Building. The services offered at this office are outlined in the student handbook, the *Tillicum*, issued each year. Members of Council may be interviewed at the office.

Book Exchange

This bureau operates to exchange second-hand books between students in the most convenient manner possible. The office of the exchange is located in the basement of the Brock Memorial Building, in the north east corner.

Employment Bureau

The Employment Bureau devotes its activities to the placing of students in part-time work during the academic year. In addition, the Bureau acts as a clearing house for employment informa-

tion. The service is for both students and employers, but is at present limited by governmental legislation respecting employment. At the time of registering at the University, students interested in part-time employment are requested to register at the Bureau office in the Brock Memorial Building. The Bureau welcomes information of vacant positions. Correspondence should be addressed to the Director, Employment Bureau, Alma Mater Society.

Publications Board

The Publications Board has charge of the *Totem*, the Society's yearbook; of the *Tillicum*, the student handbook issued to all freshmen; of the *Student Directory*, listing addresses and phone numbers of all members of the Society; and of the *Ubysses*, the bi-weekly student newspaper.

The Literary and Scientific Executive

The Literary and Scientific Executive coordinates the following campus clubs and its president represents those clubs on Students' Council.

The Players' Club presents to the public one-act plays at Christmas and a full-length play in the spring which tours the province. Other performances are given at army camps. Membership is granted after competitive tryouts.

The Musical Society presents its annual operetta in the spring; the orchestra and chorus are under professional leadership. Membership in this likewise is granted after tryouts.

The Radio Society broadcasts a weekly radio programme called *Varsity Time*. It has its own campus studio. Membership is granted to persons able and interested in script writing, announcing, producing, or technical work.

The public speaking and debating clubs are the Parliamentary Forum, open to all students, which is a member of the Western University Debating League, and the Women's Public Speaking Club.

The Engineering Clubs are the G. M. Dawson Club, the Forestry Club, the American Institute of Electrical Engineers, the American Society of Mechanical Engineers, and the American Society of Chemical Engineers.

Clubs open to students in the upper years are the Letters Club, the Historical Society, the International Relations Club, the Biological Discussion Club, the Mathematics Club, the Physics Club, the Psychology Club, La Canadienne, and Le Cercle Français.

Membership in the Social Problems Club and the Chess Club is open to all students.

The social clubs are the Cosmopolitan Club and the Chinese Students' Club; the religious clubs are the Student Christian Movement, the Varsity Christian Fellowship, the Menorah Society, and the Newman Club.

The Monro Pre-Medical Society, the Law Society, and the Commerce Club are open to students studying for medicine, law, and commerce respectively.

Instrumentalists may play in the Varsity Band, the Varsity Dance Band, or the Musical Society Orchestra.

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, includes all the women's athletic clubs of the University and is affiliated with the Women's Amateur Athletic Federation of Canada. The W. A. D., made up of the President of W. A. A., the Director of Physical Education for Women, two faculty members, and two students, cooperates in administering the athletic programme of the University. The Directorate is designed to carry out long-term policies by establishing a continuity in the personnel.

The chief clubs in the Women's Athletic Association are the Women's Basketball Club, which enters two teams in the City Cagette League, plays challenge games, and competes in the Dominion championships, and the Grass Hockey Club, which enters two teams in the Lower Mainland League and also plays challenge games.

Women may also 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.

Men's Athletics

All men students in the Alma Mater Society are members of the Men's Athletic Association. Its executive is composed of the presidents of all branches of sport and the senior managers. The Association is a local board of the Amateur Athletic Union of Canada, and is affiliated with the Western Canadian Intercollegiate Rugby Union comprising the athletic associations of the Universities of Manitoba, Saskatchewan, Alberta, and British Columbia.

Supervising the Association is the Men's Athletic Directorate, made up of the president of the Alma Mater Society, the president of the Men's Athletic Association, two student members, two faculty members, and the Director of Physical Education for Men. It controls badminton, basketball, Canadian rugby, English rugby, golf, grass hockey, ice hockey, skiing, soccer, swimming, rowing, track, and the Training Club.

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 this means, 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 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. Mutual friendship and interest in the University are stressed by the individual fraternities. 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: Bruce A. Robinson, B.A., B.A.Sc.

Secretary: Miss Patricia M. Kenmuir, B.A.

Treasurer: Pearly R. Brissenden, B.A.

The Alumni Association of the University of British Columbia is composed of Honorary, Active, and Associate members. Honorary membership includes all members of the Board of Governors and

any honorary life members appointed by the Association from time to time. Active membership includes all Association members who have paid their annual fee of \$1.00 or a life membership fee of \$10.00. Associate membership includes all other graduates of the University.

The aims and objects of the Association are:

- (a) to bring about the unity of all graduates of the University of British Columbia and to further among them the spirit of friendship of undergraduate days;
- (b) to instill in all graduates of the University of British Columbia a feeling of loyalty to the University and a sense of responsibility for the continuance of the educational work of the University and for service to the public of British Columbia;
- (c) to support suitable undertakings for the facilitation of the work of the University or of education in general, and to cooperate 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, 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.

The Association magazine, called *The Graduate Chronicle*, is issued monthly throughout the college term to paid up subscribers at the rate of \$2.00 per annum.

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

1943-1944 EXECUTIVE

President: John Goodlad.

Secretary: Jack Merrell.

Treasurer: Murray Hockridge.

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 originated 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 the 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 is 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 favoured 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

- JOHN M. EWING, B.A. (Queen's), D.Paed. (Toronto), Principal, Associate Professor of Philosophy and Psychology.
 E. STANLEY FARR, B.A., LL.B. (Toronto), Assistant to Principal, Assistant Professor of 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.), Ph.D. (Toronto), Assistant Professor of English.
 W. HARRY HICKMAN, M.A. (Brit. Col.), Assistant Professor of Modern Languages.
 GEORGE P. BLACK, M.A. (Man.), Assistant Professor of Classics, and Librarian.
 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.), Assistant Professor of History and Psychology.
 W. GORDON FIELDS, B.A. (Brit. Col.), Instructor 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 as follows.

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 University Entrance, 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 1, or Physics A or 1	3
(f) Three courses, not already chosen, selected from the following:	
Biology 1, Chemistry 1, Chemistry 2, Commerce 1, 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 A, Psychology 1, Philosophy 1, Physics A, Physics 1, Sociology 1, Zoology 1	9

The rules and regulations governing the College are the same as those in force at the University.

Information regarding Victoria College and calendars of the College may be obtained on application to the Registrar, Victoria College, Victoria, B. C.

UNION COLLEGE OF BRITISH COLUMBIA

(United Church of Canada)

VANCOUVER, B. C.

(In Affiliation with the University of British Columbia)

Principal

REV. J. G. BROWN, M.A., D.D.

Union College offers courses of instruction in Theology leading to the degree 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 82.)

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.

(In Affiliation with the University of British Columbia)

Principal

REV. H. R. TRUMPOUR, M.A., B.D., D.D.

Registrar

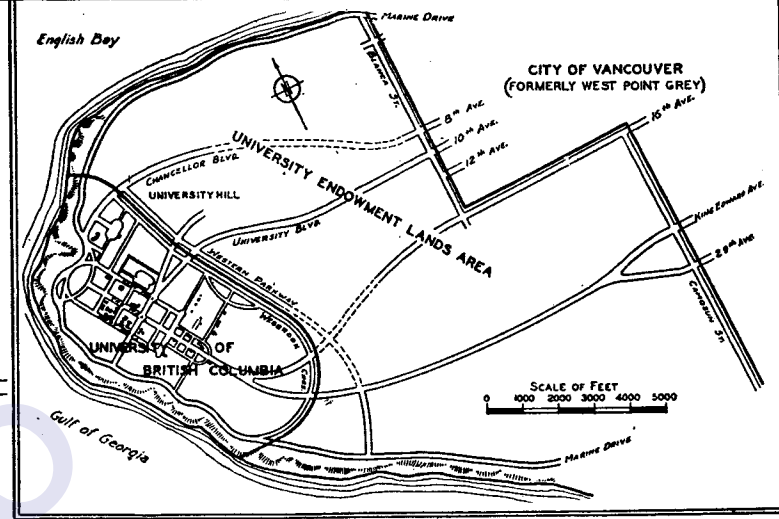
REV. D. P. WATNEY, B.A., B.D.

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 Religious Knowledge options, for which credit is given in the course leading to the B.A. degree. (See page 82.)

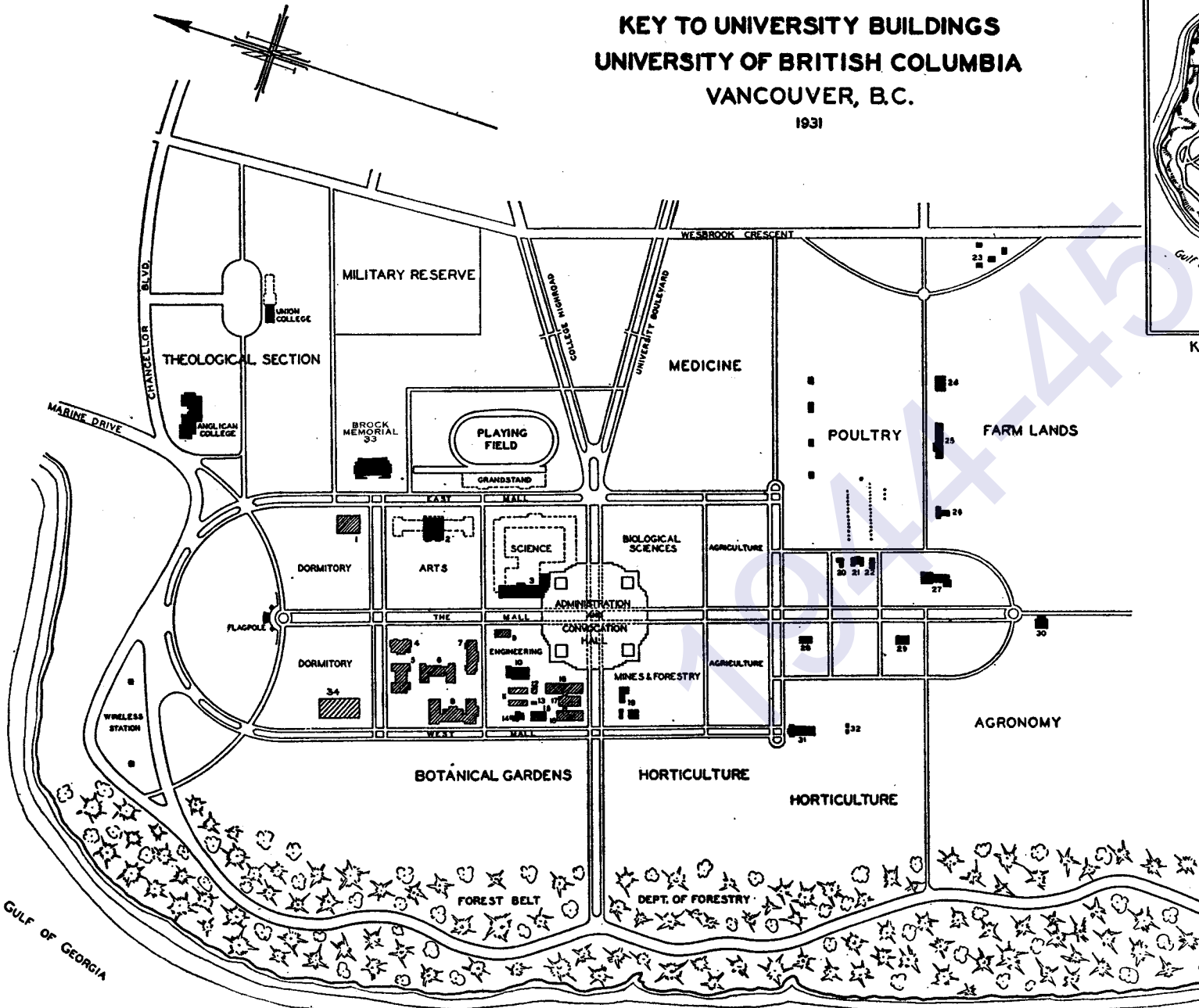
For further information in reference to Faculty, courses of study, etc., see Calendar of the College.

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
- 32 FORESTRY FIELD HOUSES
- 33 BROCK MEMORIAL
- 34 ARMOURY

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 32
- GARAGES 11
- GREENHOUSE 30
- GYMNASIUM 1
- HORSE BARN 30
- HORTICULTURAL BARN 26
- HYDRAULICS LABORATORY 16
- LIBRARY 2
- MECHANICAL LABORATORIES 18
- MINING & METALLURGY 16
- PIGGERY 28
- POWER HOUSE 10
- RECEIVING HOUSE 13
- SCIENCE 3
- SHEEP BARN 24
- VOCATIONAL BUILDINGS (AGRICULTURAL) 21, 22
- WORKSHOPS 15
- BROCK MEMORIAL 33
- ARMOURY 34

■ PERMANENT BUILDINGS
▨ SEMI-PERMANENT BUILDINGS

SCALE OF FEET
0 500 1000 1500