

PUBLICATIONS OF THE UNIVERSITY OF BRITISH COLUMBIA

The University
OF
British Columbia



CALENDAR

THIRTY-SECOND SESSION
1946-1947

VANCOUVER, BRITISH COLUMBIA
1946

NOTICE OF IMPORTANT CHANGES

REGISTRATION AND PAYMENT OF FEES

Attention is drawn to the new regulations.

TIME TABLES

Schedules showing hours and rooms for lectures and laboratories will be available during the registration period beginning September 12th.

FACULTY OF LAW

Regulations affecting Law Students and an outline of courses will be found in the section devoted to the Faculty of Law.

NEW COURSES

Numerous additional courses are provided in various departments.

RENUMBERING OF COURSES

All courses in the Faculty of Arts and Science, the Faculty of Applied Science, and the Faculty of Agriculture have been renumbered. Old numbers are set in square brackets after the new in the departmental outlines.

SCHOLARSHIPS AND BURSARIES

Numerous additional scholarships and bursaries will be found in the introductory pages of the Calendar.

THE DOMINION-PROVINCIAL YOUTH TRAINING BURSARIES AND PROVINCIAL LOAN FUND

It is the desire of the Dominion and Provincial Governments that no student of ability shall through lack of funds be denied the opportunity to continue his or her education beyond the level of the secondary school.

A sum of money has been set aside to aid University students who can offer proof of scholastic ability and financial need. This assistance is available to regular students in any year and any faculty. Students will receive 60 per cent. of the total assistance as a bursary and 40 per cent. as a loan. The loan is repayable commencing one year after the applicant enters gainful employment, and will not bear interest until that time.

Application forms may be obtained from the Department of Education, Technical Education Branch, Victoria, B. C., and must be returned by August 15th, 1946.

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ACADEMIC YEAR

1946

August

- 9th Friday } Supplemental examinations—Second Year Nursing.
10th Saturday }
15th Thursday } Last day for submission of applications for supplemental examinations.
15th Thursday } Last day for submission of applications for admission to Second Year Nursing.
15th Thursday } Last day for submission of applications for bursaries.

September

- 1st Sunday } ACADEMIC YEAR begins.
2nd Monday } Labour Day. University closed August 31st to September 2nd inclusive.
3rd Tuesday to } Supplemental examinations.
10th Tuesday }
12th Thursday } Registration in person for Winter Session begins.
18th Wednesday } Last day for registration and payment of First Term fees of all First and Second Year students. (See August 15th, above.)
20th Friday } Last day for registration and payment of First Term fees of all other undergraduates except students in Extra-Sessional Classes and Directed Reading Courses.
19th Thursday, 9 a.m. }
to 4 p.m. } Programme for students registering for the first time. Session begins for new students.
20th Friday, 9 a.m. to }
4 p.m. }
23rd Monday } Lectures begin at 8:30 a.m.

October

- 1st Tuesday } Last day for handing in graduation essays and theses (Autumn Congregation).
4th Friday } Meeting of the Faculty Council. (Subsequent meetings to be held at the call of the President.)
7th Monday } Last day for change in students' courses.
9th Wednesday } Meeting of the Faculty of Arts and Science.
11th Friday } Meeting of the Faculty of Agriculture.
14th Monday } Meeting of the Faculty of Law.
15th Tuesday } Thanksgiving Day. University closed.
Last day for registration and payment of fees of graduate students and of students in Extra-Sessional Classes and Directed Reading Courses.
23rd Wednesday } Meeting of the Senate.
30th Wednesday } Congregation.

December

- 4th Wednesday } Meeting of the Faculty of Arts and Science.
6th Friday } Meeting of the Faculty of Agriculture.
9th Monday } Meeting of the Faculty of Law.
18th Wednesday } Meeting of the Senate.
21st Saturday } First Term ends.
25th Wednesday } Christmas Day. University closed December 24th to 26th inclusive.

1947

January

1st Wednesday	New Year's Day. University closed December 31st to January 2nd inclusive.
6th Monday	Second Term begins.
15th Wednesday	Last day for payment of Second Term fees. Payment of second instalment of scholarship money.

February

5th Wednesday	Meeting of the Faculty of Arts and Science.
7th Friday	Meeting of the Faculty of Agriculture.
10th Monday	Meeting of the Faculty of Law.
19th Wednesday	Meeting of the Senate.

April

4th Friday	Good Friday. University closed April 4th to 7th inclusive.
17th Thursday	Last day of lectures.
17th Thursday	Last day for handing in graduation essays and theses.

19th Saturday

May

2nd Friday	} Sessional examinations.
2nd Friday	
3rd Saturday	Last day for handing in applications for scholarships.
10th Saturday	Field work in Applied Science begins immediately at the close of the examinations.
12th Monday	Meeting of the Faculty of Agriculture.
12th Monday	Meeting of the Faculty of Arts and Science.
13th Tuesday	Meeting of the Faculty of Law.
15th Thursday	Meeting of the Senate.
15th Thursday	Congregation.
24th Saturday	Meeting of Convocation.
	Victoria Day. University closed.

June

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

July

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

August

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

THE UNIVERSITY OF BRITISH COLUMBIA

VISITOR

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

CHANCELLOR

THE HON. ERIC W. HAMBER, C.M.G., B.A., LL.D.

PRESIDENT

NORMAN A. M. MACKENZIE, C.M.G., M.M. and Bar, B.A., LL.B., LL.M., LL.D.,
D.C.L., K.C., F.R.S.C.

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THE HON. ERIC W. HAMBER, C.M.G., B.A., LL.D. (Chairman).

NORMAN A. M. MACKENZIE, C.M.G., M.M. and Bar, K.C., B.A., LL.B.,
LL.M., LL.D., D.C.L., F.R.S.C.

(b) Elected by Senate:

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

KENNETH P. CAPLE, M.S.A., Vancouver.

Terms expire 1947.

AUSTIN B. SHINBEIN, O.B.E., M.B., F.A.C.S., Vancouver..

Term expires 1949.

(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 1948.

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

Term expires 1948.

R. H. NEELANDS, Vancouver. Term expires 1947.

GEORGE T. CUNNINGHAM, Vancouver. Term expires 1947.

SENATE

(a) The Chancellor, THE HON. ERIC W. HAMBER, C.M.G., B.A., LL.D.

The President (Chairman), NORMAN A. M. MACKENZIE, C.M.G., M.M. and
Bar, K.C., B.A., LL.B., LL.M., LL.D., D.C.L., F.R.S.C.

(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.

Dean of the Faculty of Law:

GEORGE FREDERICK CURTIS, LL.B., B.A., B.C.L.

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 1948.

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 1948.

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 1948.

Representative of the Faculty of Law:

FREDERICK READ, LL.B. Term expires 1948.

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The Principal of the Provincial Normal School, Victoria, H. O. ENGLISH, B.A., B.S.A.

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Victoria College, Victoria, JOHN M. EWING, B.A., D.Paed. Term expires 1948.

Union College of British Columbia, Vancouver (Theological), Rev. J. G. BROWN, M.A., D.D. Term expires 1948.

The Anglican Theological College of British Columbia, Vancouver, Rev. H. R. TRUMPOUR, M.A., B.D., D.D. Term expires 1948.

(g) Elected by Convocation:

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

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KENNETH P. CAPLE, M.S.A., Vancouver.

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

AUSTIN B. SCHINBEIN, O.B.E., M.B., F.A.C.S., Vancouver.

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

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Terms expire 1948.

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

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Special Spring Session:

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Special Spring Session:
 RODERICK F. ROBERTSON, B.A. (Brit. Col.), Instructor.

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 JOSEPH E. A. KANIA, M.A.Sc. (Brit. Col.), Ph.D. (Mass. Inst. of Technology), Special Lecturer.

Department of Classics

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GEOFFREY B. RIDDEHOUGH, M.A. (Brit. Col.), M.A. (California), Assistant Professor.
WILLIAM LEONARD GRANT, B.A. (Brit. Col.), A.M. (Harvard), Ph.D. (Toronto), Assistant Professor.
PATRICK C. F. GUTHRIE, B.A. (Manitoba), M.A. (Toronto), Assistant Professor.

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. (On leave of absence.)
JAMES C. TAYLOR, B.A. (Western Ontario), C.A., Associate Professor.
DONALD K. BELL, B.Com., M.A. (Brit. Col.), Associate Professor.
CECIL N. BRENNAN, B.Com. (Brit. Col.), M.Com. (Columbia), C.A., Associate Professor.
FREDERICK FIELD, C.A., Lecturer in Accountancy.
JOHN FARRIS, B.A. (Brit. Col.), M.B.A., LL.B. (Harvard), Lecturer in Commercial Law.
JOHN E. STARK, B.Com. (Brit. Col.), M.B.A. (Harvard), Lecturer.
C. WILLIAM VAN HOUTEN, B.Com. (Brit. Col.), Lecturer.
Special Winter Session:
GORDON W. STEAD, D.S.C. and Bar, B.Com., B.A., LL.D. (Brit. Col.), Instructor.

Department of Dairying

- BLYTHE EAGLES, B.A. (Brit. Col.), Ph.D. (Toronto), Professor and Head of the Department.**
J. J. R. CAMPBELL, B.S.A. (Brit. Col.), Ph.D. (Cornell), Associate Professor.
MISS NORA NEILSON, 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.**
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), Professor of Sociology.
JOSEPH A. CRUMB, B.B.A. (Washington), M.S., Ph.D. (California), Professor.
NORMAN A. M. MACKENZIE, C.M.G., M.M. and Bar, K.C., B.A., LL.B. (Dalhousie), LL.M. (Harvard), LL.D. (Mount Allison, New Brunswick, Toronto), D.C.L. (Whitman), F.R.S.C., Honorary Lecturer in Government.
STUART JAMIESON, B.A. (Brit. Col.), M.A. (McGill), Ph.D. (California), Lecturer.
LLOYD F. DETWILLER, A.F.C., M.A. (Brit. Col.), Lecturer. (Session 1945-46.)
DAVID A. HARPER, B.Com. (Brit. Col.), Lecturer. (Session 1945-46.)
ROBERT M. CLARK, B.A., B.Com. (Brit. Col.), Lecturer.
Special Winter Session:
GORDON W. STEAD, D.S.C. and Bar, B.Com., B.A., LL.D. (Brit. Col.), Instructor.

Department of Education

MAXWELL A. CAMERON, M.A. (Brit. Col.), Ph.D. (Toronto), Professor and Head of the Department.

FREDERICK T. TYLER, B.Sc., M.A., B.Ed. (Alberta), Ph.D. (California), Associate Professor of Education and Psychology.

Part-time Lecturers:

Miss C. Black, Miss E. B. Bell, Miss S. M. Boyles, A. C. Cooke, Mrs. A. G. Graham, T. R. Hall, H. P. Johns, A. R. Lord, Dr. I. MacInnes, Major J. F. McLean, Miss M. McManus, E. J. Merrell, R. Osborne, C. J. Scott, Mrs. M. Sleightholme, H. B. Smith, Miss D. Somerset, O. J. Thomas, Dr. O. J. Todd, B. E. Wales, H. D. Whittle, W. C. Wilson.

Demonstration Teachers:

T. H. Adney, W. W. Armstrong, W. A. Ashley, E. Broome, N. Clark, Mrs. E. R. Davies, J. S. Donaldson, T. B. Edwards, D. M. Flather, D. A. Hards, A. H. Hutson, Miss M. Langridge, W. Y. McLeish, H. Northrop, Miss K. M. Portsmouth, W. Putnam, W. E. Reed, O. M. Sanford, Miss M. Sellon, J. E. Smith, B. E. Wales, J. T. Young.

Special Spring Session:

K. F. ARGUE, B.A. (Alberta), M.A. (Oxon.), D.Ed. (Columbia), Instructor.

Department of English

G. G. SEDGEWICK, B.A. (Dalhousie), Ph.D. (Harvard), F.R.S.C., 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), Professor.

J. ROY DANIELLS, B.A. (Brit. Col.), Ph.D. (Toronto), Professor.

A. EARLE BIRNEY, B.A. (Brit. Col.), M.A., Ph.D. (Toronto), Professor.

HUNTER CAMPBELL LEWIS, M.A. (Brit. Col.), Associate Professor.

MRS. DOROTHY BLAKEY SMITH, M.A. (Brit. Col.), M.A. (Toronto), Ph.D. (London), Associate Professor.

EDMUND MORRISON, B.A. (Brit. Col.), A.M., Ph.D. (California), Associate Professor.

JOHN H. CREIGHTON, M.A. (Toronto), Associate Professor.

WILLIAM ROBBINS, M.A. (Brit. Col.), Ph.D. (Toronto), Associate Professor.

ROBERT A. HUME, LL.B. (Stanford), Ph.D. (Cornell), Associate Professor.

STANLEY E. READ, M.A. (McGill), Associate Professor.

R. E. WATTERS, M.A. (Toronto), Ph.D. (Wisconsin), Associate Professor.

G. PHILIP V. AKRIGG, M.A. (Brit. Col.), A.M., Ph.D. (California), Assistant Professor. (On leave of absence.)

MISS EDITH MACRAE, M.A. (New Brunswick), Assistant Professor.

MISS RUTH HUMPHREY, B.A. (Mount Allison), M.A. (Oxford), Assistant Professor.

R. C. CRAGG, B.A. (Toronto), Assistant Professor.

M. W. STEINBERG, B.A. (Queen's), Assistant Professor.

JOHN D. GRANT, B.A. (Brit. Col.), M.A. (Toronto), Assistant Professor.

HOLGER O. V. NYGARD, B.A. (Brit. Col.), Instructor.

MISS DOREEN ALLEY, B.A. (Dalhousie), Lecturer.

ROBERT P. APROBERTS, B.A. (Brit. Col.), Lecturer. (Session 1945-46.)

MISS EDNA BAXTER, B.A. (Brit. Col.), A.M. (Washington), Lecturer.

MRS. KATHLEEN CREIGHTON, B.A. (Brit. Col.), M.A. (Toronto), Lecturer.

A. J. FYFE, B.A. (Western Ontario), Lecturer.

A. R. HAINES, D.F.C., B.A. (Brit. Col.), Lecturer.
 MRS. FERNE JAMES, B.A. (California), Lecturer.
 WALTER E. KNOTTS, B.A. (Brit. Col.), Lecturer. (Session 1945-46.)
 BURTON KURTH, B.A. (Brit. Col.), Lecturer.
 MRS. STELLA LEWIS, M.A. (Brit. Col.), Lecturer.
 ERIC P. NICOL, B.A. (Brit. Col.), Lecturer.
 MRS. MARGARET NYGARD, B.A. (Brit. Col.), Lecturer.
 ROBERT H. G. ORCHARD, M.A. (Cantab.), Lecturer.
 HOWARD RIGNEY, B.A. (Western Ontario), Lecturer.
 CHRIS. SANFORD, B.A. (Oxon.), Lecturer.

Special Winter Session:

MISS M. CREELMAN, B.A. (Dalhousie), Instructor.

Special Winter and Spring Sessions:

ROBERT MACDOUGALL, B.A. (Brit. Col.), Instructor.
 MISS CATHERINE McNIVEN, B.A. (Dalhousie), Instructor.
 MISS K. MARCUSE, M.A. (Brit. Col.), Instructor.
 RODNEY P. D. POISSON, M.A. (Brit. Col.), Instructor.

Department of Farm Mechanics

J. R. W. YOUNG, B.S.A., M.Sc. (Sask.), Associate Professor and Acting Head.

Department of Forestry

JOHN EDWARD LIERSCH, B.A., B.A.Sc. (Brit. Col.), M.F. (Washington), M.C.S.F.E., M.S.A.F., Professor and Head of the Department.
 F. MALCOLM KNAPP, B.S.F. (Syracuse), M.S.F. (Washington), M.C.S.F.E., M.S.A.F., Professor.
 BRAHAM G. GRIFFITH, M.A. (Brit. Col.), M.F. (Harvard), Ph.D. (Washington), M.C.S.F.E., Associate Professor.
 THOMAS G. WRIGHT, B.F. (Penn. State), M.F. (Duke), M.C.S.F.E., M.S.A.F., Associate Professor.
 GEORGE S. ALLEN, M.A.Sc. (Brit. Col.), Ph.D. (California), Associate Professor.
 ROBERT W. WELLWOOD, B.A.Sc. (Brit. Col.), Ph.D. (Duke), Associate Professor.
 HARRY C. HAINES, B.Sc. (Purdue), M.F. (Duke), Assistant Professor.
 J. L. ALEXANDER, B.Sc.F. (Toronto), Special Lecturer.
 R. M. BROWN, B.Sc.F. (Toronto), M.C.S.F.E., Honorary Lecturer in Forest Products.
 L. B. DIXON, Part-time Lecturer.
 WILLIAM BYERS, M.C.S.F.E., Part-time Lecturer.
 IAN McQUEEN, B.A.Sc. (Brit. Col.), Part-time Lecturer.

Department of French

DAVID OWEN EVANS, M.A., D.Phil. (Oxon.), D.Lett. (Univ. of Paris), Professor and Head of the Department.
 A. F. B. CLARK, B.A. (Toronto), Ph.D. (Harvard), Officier d'Académie, F.R.S.C., Professor.
 MISS DOROTHY DALLAS, M.A. (Brit. Col.), D.Lett. (Univ. of Paris), Associate Professor.
 MISS DEBORAH A. K. AISH, M.A. (Brit. Col.), D.Lett. (Univ. of Paris), Assistant Professor.
 MADAME Y. DARLINGTON, Assistant Professor.
 MISS ETHEL HARRIS, A.B. (Columbia), M.A. (Toronto), D.Lett. (Univ. of Paris), Officier de l'Instruction Publique, Instructor.
 MRS. W. KAYE LAMB, M.A. (Brit. Col.), D.Lett. (Univ. of Paris), Lecturer. (Session 1945-46.)
 RONALD OLDHAM, D.F.C., Croix de Guerre, B.A. (Brit. Col.), Lecturer.

H. ASHTON, M.A., Litt.D. (Cantab.), D.Lett. (Birmingham), D.Lett. (Univ. of Paris), F.R.S.C., Officier de l'Instruction Publique, Chevalier de la Legion d'Honneur, Special Lecturer.

Special Winter Session:

ODIN S. SOSTAD, B.A. (Brit. Col.), Instructor.

Special Spring Session:

A. F. WALSH, B.A. (Brit. Col.), Instructor.

Department of Geology and Geography

M. Y. WILLIAMS, B.Sc. (Queen's), Ph.D. (Yale), F.G.S.A., F.R.S.C., Professor and Head of the Department.

CLARENCE OTTO SWANSON, M.A.Sc. (Brit. Col.), Ph.D. (Wisconsin), F.G.S.A., F.R.S.C., Professor of Mineralogy and Petrography. (Session 1945-46.)

HENRY CECIL GUNNING, B.A.Sc. (Brit. Col.), M.S., Ph.D. (Mass. Inst. of Technology), F.G.S.A., F.R.S.C., Professor of Economic Geology.

H. V. WARREN, B.A., B.A.Sc. (Brit. Col.), B.Sc., D.Phil. (Oxon.), Assoc. Inst. M.M., F.G.S.A., F.R.S.C., Professor of Mineralogy and Petrography.

VLADIMIR J. OKULITCH, M.A.Sc. (Brit. Col.), Ph.D. (McGill), F.G.S.A., F.R.S.C., Associate Professor.

KENNETH DE P. WATSON, B.A.Sc. (Brit. Col.), Ph.D. (Princeton), Associate Professor.

THOMAS R. WEIR, B.A. (Brit. Col.), M.A. (Syracuse), Lecturer.

Department of German

MISS ISABEL MACINNES, M.A. (Queen's), Ph.D. (California), Professor and Head of the Department.

MISS JOYCE HALLAMORE, M.A. (Brit. Col.), Ph.D. (Munich), Associate Professor.

CHARLES ERNEST BORDEN, M.A., Ph.D. (California), Associate Professor.

MURRAY A. COWIE, M.A. (Queen's), Ph.D. (Chicago), Assistant Professor.

MRS. P. TAYLOR, M.A. (Brit. Col.), Instructor.

MRS. M. LOURIÉ, D. Juris, (Vienna), Instructor.

MRS. J. HARRIS, A.B. (Smith), M.A. (Brit. Col.), Instructor.

DAVID OGILVIE, M.A. (Glasgow), Lecturer. (Session 1945-46.)

MISS MARGARET MILLER, B.A. (Queen's), Lecturer.

Department of History

W. N. SAGE, B.A. (Toronto), M.A. (Oxon.), Ph.D. (Toronto), F.R.Hist.S., F.R.S.C., Professor and Head of the Department.

F. H. SOWARD, B.A. (Toronto), B.Litt. (Oxon.), Professor and Director of International Studies.

A. C. COOKE, B.A. (Manitoba), M.A. (Oxon.), Professor.

MISS MARGARET A. ORMSBY, M.A. (Brit. Col.), Ph.D. (Bryn Mawr), Assistant Professor.

T. J. OLESON, M.A. (Manitoba), Lecturer. (Session 1945-46.)

Special Winter and Spring Sessions:

R. J. BOROUGHS, M.A. (Brit. Col.), Instructor.

Special Spring Session:

JOHN P. HEISLER, B.A. (Brit. Col.), M.A. (McGill), Instructor.

Department of Home Economics

MISS DOROTHY P. LEFEBVRE, B.H.Sc. (Sask.), M.S. (Iowa State College), Associate Professor and Acting Head of the Department.

MISS STELLA BEIL, B.S., M.S. (Kansas State College), Assistant Professor.

MISS CHARLOTTE S. BLACK, B.Sc. (H.Ec.) (Manitoba), A.M. (Columbia), Assistant Professor.

MISS NINA H. MORLEY, M.A. (Toronto), Assistant Professor.

MISS MARY HOLDER, B.Sc. in H.Ec. (Mt. Allison), Assistant Professor.

MISS BARBARA NEWCOMBE, B.Sc. in H.E. (Manitoba), M.S. (Minnesota), Assistant Professor.

Part-time Lecturers:

Dr. Stewart Murray, Miss Katherine Reebel, Dr. R. E. Willits, Mrs. S. N. F. Chant.

Department of Horticulture

A. F. BARSS, A.B. (Rochester), B.S. in Agr. (Cornell), M.S. (Oregon Agricultural College), Ph.D. (Chicago), Professor and Head of the Department.

G. H. HARRIS, B.S.A. (Brit. Col.), M.S. (Oregon State College), Ph.D. (California), Professor.

FRANK E. BUCK, B.S.A. (McGill), Lecturer. (Session 1945-46.)

Special Winter Session:

MISS M. J. McMULLAN, B.S.A. (Brit. Col.), Instructor.

Department of Mathematics

DANIEL BUCHANAN, M.A. (McMaster), Ph.D. (Chicago), LL.D. (McMaster), F.R.S.C., Professor and Head of the Department.

F. S. NOWLAN, B.A. (Acadia), A.M. (Harvard), Ph.D. (Chicago), Professor.

R. D. JAMES, M.A. (Brit. Col.), Ph.D. (Chicago), F.R.S.C., Professor.

WALTER H. GAGE, M.A. (Brit. Col.), Professor.

S. A. JENNINGS, M.A., Ph.D. (Toronto), Associate Professor.

D. C. MURDOCH, M.A. (Brit. Col.), Ph.D. (Toronto), Associate Professor.

DOUGLAS DERRY, B.A. (Toronto), Dr.Phil. (Göttingen), Associate Professor.

MISS MAY L. BARCLAY, M.A. (Brit. Col.), Assistant Professor.

JOHN E. A. PARNALL, B.A. (Brit. Col.), Lecturer.

MISS CORA BREHAUT, B.A. (McGill), Lecturer. (Session 1945-46.)

MISS ELIZABETH JENKINSON, B.A. (Brit. Col.), Lecturer.

BYRON W. STRAIGHT, B.A. (Brit. Col.), Lecturer.

DONALD G. DUNCAN, M.A. (Brit. Col.), Lecturer.

W. H. SIMONS, M.A. (Brit. Col.), Lecturer.

NORMAN S. FREE, M.A. (Brit. Col.), Lecturer.

WILLIAM C. CAMPBELL, B.A. (Manitoba), Lecturer.

Special Winter Session:

ALLAN BOWLES, B.A. (Toronto), Instructor.

Special Winter and Spring Sessions:

F. J. FIELD, B.A. (Brit. Col.), M.Sc. (Chicago), Instructor.

Department of Mechanical and Electrical Engineering

HECTOR JOHN MACLEOD, O.B.E., B.Sc. (McGill), M.Sc. (Alberta), A.M., Ph.D. (Harvard), Mem.A.I.E.E., M.E.I.C., Mem.I.R.E., Fellow A.S.E.E., Professor and Head of the Department.

F. W. VERNON, B.Sc. Eng. (London), Wh.Sch., A.M.I.Mech.E., A.F.R.A.S., Professor of Mechanical Engineering and Lecturer in Aeronautical Engineering.

S. C. MORGAN, B.Sc. (Queen's), M.Sc. (Alberta), M.S. (Calif. Inst. of Technology), Mem.A.I.E.E., M.I.E.S., Professor of Electrical Engineering.

W. B. COULTHARD, B.Sc. (London), Mem.A.I.E.E., A.M.I.E.E., Associate Professor of Electrical Engineering.

W. O. RICHMOND, B.A.Sc. (Brit. Col.), M.S. (Pittsburg), Mem.A.S.M.E., Associate Professor of Mechanical Engineering.

H. M. McILROY, M.Sc. (Queen's), Associate Professor of Mechanical Engineering.

- FRANK NOAKES**, B.Sc. (Alberta), M.Sc., Ph.D. (Iowa State College), Associate Professor of Electrical Engineering.
- WILLIAM WOLFE**, B.A.Sc. (Brit. Col.), M.Sc. (Case School of Ap.Sc.), Assistant Professor of Mechanical Engineering.
- D. W. THOMSON**, B.A.Sc. (Brit. Col.), M.Sc. (Illinois), Assistant Professor of Mechanical Engineering.
- LOBNE R. KERSEY**, B.A.Sc. (Brit. Col.), Assistant Professor of Electrical Engineering.

Department of Mining and Metallurgy

- FRANK A. FORWARD**, B.A.Sc. (Toronto), M.C.I.M., Mem.A.I.M.E., M.Aust.I.M.M., Professor and Head of the Department.
- LESLIE G. R. CROUCH**, B.Sc. (Victoria, Australia), M.Sc. (Utah), Professor of Mining Engineering.
- C. S. SAMIS**, M.Sc. (Manitoba), Ph.D. (London), Associate Professor of Metallurgy.
- HAROLD M. WRIGHT**, B.S. (Utah), M.A. (Brit. Col.), M.S. (Utah), Part-time Lecturer. (Session 1945-46.)

Department of Nursing and Health

- C. E. DOLMAN**, M.R.C.S. (England), L.R.C.P., M.B., B.S., M.R.C.P., D.P.H., Ph.D. (London), F.A.P.H.A., Professor and Head of the Department.
- MISS H. EVELYN MALLORY**, R.N., B.Sc. (Columbia), Associate Professor.
- MISS RUTH MORRISON**, R.N., B.S. (Minnesota), Assistant Professor.
- MISS PAULINE CAPELLE**, R.N., B.A., B.A.Sc. (Brit. Col.), Instructor.
- MISS BARBARA BREETON**, R.N., B.A.Sc. (Brit. Col.), Part-time Instructor. (Session 1945-46.)
- LAWRENCE E. RANTA**, M.D., D.P.H. (Toronto), Lecturer.
- Part-time Lecturers:*

Dr. C. H. Gundry, Miss Josephine Kilburn, Dr. Gordon Hutton, Dr. A. H. Spohn, Mr. T. R. Hall, Miss Donna Kerr.

Department of Pharmacy

- ESLI LONGWORTH WOODS**, B.S.P. (Sask.), M.Sc. (Wisconsin), Professor and Head of the Department.
- MRS. PHYLLIS BREWSTER BREWER**, B.Sc. (Alberta), M.S. (Minnesota), Associate Professor.

Department of Philosophy and Psychology

- S. N. F. CHANT**, O.B.E., M.A. (Toronto), Professor and Head of the Department.
- THOMAS GREENSHIELDS HENDERSON**, M.A. (McGill), Ph.D. (Harvard), Associate Professor. (Session 1945-46.)
- JOSEPH E. MORSH**, B.A. (Brit. Col.), Ph.D. (Johns Hopkins), Associate Professor. (On leave of absence.)
- ALEXANDER P. MASLOW**, A.B., A.M. (Michigan), Ph.D. (California), Associate Professor.
- FREDERICK T. TYLER**, B.Sc., M.A., B.Ed. (Alberta), Ph.D. (California), Associate Professor of Psychology and Education.
- E. S. W. BELYEA**, M.A. (Toronto), Assistant Professor.
- W. G. BLACK**, B.A. (Brit. Col.), M.A., Ph.D. (Chicago), Part-time Lecturer. (Session 1945-46.)
- J. W. A. FLEURY**, M.A. (Brit. Col.), Part-time Lecturer. (Session 1945-46.)

Department of Physics

- GORDON MERRITT SHRUM**, O.B.E., M.M., M.A., Ph.D. (Toronto), F.R.S.C., Professor and Head of the Department.
- A. E. HENNINGS**, M.A. (Lake Forest College), Ph.D. (Chicago), Professor.

- HAROLD D. SMITH, M.A. (Brit. Col.), Ph.D. (Toronto), Professor.
 A. M. CROOKER, B.A. (McMaster), M.A., Ph.D. (Toronto), Professor.
 KENNETH C. MANN, O.B.E., B.A. (Sask.), Ph.D. (Toronto), Professor.
 GEORGE MICHAEL VOLKOFF, M.A. (Brit. Col.), Ph.D. (California), Professor.
 FREDERICK J. BELINFANTE, B.Sc., M.S.C., Ph.D. (Leiden), Associate Professor.
 KENNETH R. MACKENZIE, B.A. (Brit. Col.), Ph.D. (California), Associate Professor.
 R. KEITH BROWN, B.A. (Brit. Col.), Lecturer.
 THOMAS L. COLLINS, M.A. (Brit. Col.), Instructor. (Session 1945-46.)
 H. R. MILLEY, M.A. (Brit. Col.), Lecturer. (Session 1945-46.)
 HARRY H. A. DAVIDSON, B.A., M.A.Sc. (Brit. Col.), Lecturer.
 J. G. RETALLACK, B.A. (Brit. Col.), Lecturer. (Session 1945-46.)
 Otto Blüh, Ph.D. (Prague), Lecturer.
 CHARLES A. HERALD, B.Sc., M.Sc. (Dalhousie), Lecturer.
Special Spring Session:
 ARTHUR C. JOHNSON, B.A., M.A. (Brit. Col.), Instructor.

Department of Poultry Husbandry

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

Department of Social Work

- MISS MARJORIE J. SMITH, A.B. (Minnesota), A.M. (Chicago), Professor and Head of the Department.
 MISS KATHERINE REEBEL, B.A. (Penn. College for Women), M.A. (Pittsburgh), M.S.S. (Smith), Associate Professor. (Session 1945-46.)
 MISS MARGARET C. JOHNSON, B.A. (Brit. Col.), M.S.W. (Washington University), Assistant Professor.
 MISS ELIZABETH V. THOMAS, A.B. (Wesleyan College), M.S. (New York School of Social Work), Assistant Professor.
 GORDON H. HUTTON, M.D., D.P.H., D.Psy. (Toronto), Diploma of American Bd. of Psychiatry and Neurology, Lecturer. (Session 1945-46.)

Part-time Lecturers:

- Dr. C. E. Gould, Dr. J. MacDermott, Dr. W. H. Hatfield, Dr. R. A. Walton, Dr. W. C. Mooney, Dr. J. Piters, Dr. C. E. Davies, Dr. L. Leeson, Dr. D. Williams, Dr. A. M. Evans, Dr. J. Naden, Dr. J. Neilson, Dr. H. Baker, Dr. A. E. Trites, Dr. J. S. Kitching, Miss Trenna Hunter, Dr. S. E. C. Turvey, Dr. G. F. Strong, Dr. L. Hodgins, Dr. Lee Smith.

Department of Spanish

- CHARLES VYNER BROOKE, B.A. (Queen's), A.M., Ph.D. (Harvard), Associate Professor and Chairman of the Department.
 G. F. McSPADEN, A.B., M.A. (Univ. of New Mexico), Ph.D. (Stanford), Associate Professor.
 JACK HORACE PARKER, M.A., Ph.D. (Toronto), Assistant Professor. (Session 1945-46.)
Special Winter Session:
 MRS. E. DAVISON, Instructor.

Department of Zoology

- W. A. CLEMENS, M.A. (Toronto), Ph.D. (Cornell), F.R.S.C., Professor and Head of the Department.
 G. J. SPENCER, B.S.A. (Toronto), M.S. (Illinois), Professor.

IAN McTAGGART COWAN, B.A. (Brit. Col.), Ph.D. (California), Professor.
 W. S. HOAR, B.A. (New Brunswick), M.A. (Western Ontario), Ph.D. (Boston Univ. Medical), Professor of Zoology and Fisheries.

Staff of Faculty of Law

GEORGE FREDERICK CURTIS, LL.B. (Sask.), B.A., B.C.L. (Oxon.), Professor of Law and Dean of the Faculty.

FREDERICK READ, LL.B. (Manitoba), Associate Professor of Law.

Lecturers:

Senator J. W. deB. Farris, F. A. Sheppard, S. J. Remnant, Alex Fisher, Mr. Justice J. O. Wilson, Mr. Justice J. M. Coady, Mr. Justice Sidney Smith, J. S. Maguire, C. W. Brazier, H. R. Bray, Mr. Justice H. I. Bird, Darrell T. Braidwood.

Special Lecturers:

Chief Justice Wendell B. Farris, Mr. R. H. Tupper.

Department of University Extension

GORDON MERRITT SHRUM, O.B.E., M.M., M.A., Ph.D. (Toronto), F.R.S.C., Director.

ROBERT T. MCKENZIE, B.A. (Brit. Col.), Assistant to the Director. (On leave of absence.)

MISS DOROTHY SOMERSET, A.B. (Radcliffe), Assistant in Dramatics.

NORMAN BARTON, M.A. (Brit. Col.), Assistant in Visual Education.

MISS MARJORIE V. SMITH, B.A. (Sask.), Assistant.

ARTHUR H. SAGER, B.A. (Brit. Col.), Assistant.

ARTHUR RENNEY, B.S.A. (Brit. Col.), M.S.A. (California), Assistant in Agriculture.

University Health Service

STEWART MURRAY, M.D., D.P.H. (Toronto), Medical Health Officer, Metropolitan Health Committee, University Health Officer.

J. S. KITCHING, B.A., M.D., D.P.H. (Toronto), Assistant Senior Medical Health Officer of the Metropolitan Health Department of Vancouver and Director of the University Health Service.

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

GEORGE T. CUNNINGHAM, University representative on the Metropolitan Health Committee.

MISS MURIEL UPSHALL, R.N., B.A.Sc. (Brit. Col.), Public Health Nurse.

MRS. JEANNE E. WORRALL, B.A.Sc. (Brit. Col.), Public Health Nurse.

MISS DOROTHY M. LADNER, B.A.Sc. (Brit. Col.), Public Health Nurse.

Physical Education

ROBERT F. OSBORNE, B.A. (Brit. Col.), Director of Physical Education, Men.

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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. When he retired at the end of two terms in 1918, Dr. R. E. McKechnie was elected Chancellor, and served continuously until his death, May 24th, 1944. On September 18th of that year the Hon. Eric W. Hamber was elected by acclamation to fill out Dr. McKechnie's unexpired term, and on March 7th, 1945, again by acclamation, for the ensuing regular term.

In March, 1913, the Lieutenant-Governor in Council appointed as first President of the University F. F. Wesbrook, M.A., M.D., C.M., LL.D. On his death, October 20th, 1918, L. S. Klinck, Dean of the Faculty of Agriculture, was appointed by the Board of Governors as Acting President, and on June 1st, 1919, as President. When he retired, June 30th, 1944, he was succeeded by Dr. Norman A. M. MacKenzie.

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 160,000 volumes. 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 pro-

ceedings 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 1,800 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.

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

The Library also administers the book collection of the University Extension Department. This consists of about 1,600 volumes, and is increasing as the Department's work develops.

The Extension Department's collection also includes more than 4,000 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. Doors are open from 4 to 6 hours five days a week throughout the year.

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 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 invertebrates 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. The playing floor has an area of 6,000 square feet, and is surrounded on all 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. On the main floor of the building are located the offices of the instructors in physical education, a training and first-aid room, a store room, and a kitchen. Equipment for physical education activities and indoor athletics has 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 in alleviating 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. Another playing field is being prepared east of the Brock Memorial Building.

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 for this reason the present bleachers are so constructed as to be movable. Underneath the present main stand there are locker rooms, dressing rooms, showers, ticket booths, drying rooms, and a room for special activities, such as boxing, handball, weight-lifting, basketball, and fencing. Funds for the construction of the grandstand were provided through a \$40,000 bond issue sponsored by the Alma Mater Society. The Provincial Government has undertaken to assume the annual charges for interest on the bonds.

Additional Accommodation Provided in 1946

The special activities room in the stadium referred to above was completed and equipped early in 1946. In addition, an army hut,

located north of the Brock Memorial Building, was supplied to relieve the congestion in the gymnasium. This hut will be used primarily for dancing classes and recreational activities.

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.

GENERAL INFORMATION

The Session

The academic year begins on the first of September and ends on the last day of August. The Winter Session is divided into two terms—the first, September to December; the second, January to May. The Summer Session consists of seven weeks' instruction in July and August. For *Admission to the University*, see page 34, and for *Registration and Attendance*, see page 36.

Courses of Study

The University offers instruction in each of the four faculties, Arts and Science, Applied Science (including Nursing), Agriculture, and Law, leading to the degrees of Bachelor of Arts, Bachelor of Commerce, Bachelor of Education, Bachelor of Home Economics, Bachelor of Social Work, Bachelor of Applied Science, Bachelor of Science in Forestry, Bachelor of Science in Agriculture, and Bachelor of Laws. In the Faculty of Arts and Science a course is offered leading to a Teacher Training Diploma. Advanced courses of instruction and facilities for research leading to a Master's degree are offered in each faculty except Law. Admission to these advanced courses, or to the privileges of research, does not in itself imply admission to candidacy for a higher degree.

In the session 1946-47 the University proposes to offer one year of work leading to a degree in Pharmacy and also work leading to a degree or diploma in Physical Education.

In each case the details are subject to the consideration of the Senate of the University. Full information will be issued in a supplementary bulletin as soon as possible.

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 colour of the degree obtained; the Master's hood is the same, lined with the distinctive colour. The Bachelor of Arts hood has a border of University blue; the Bachelor of Commerce hood differs from that of Bachelor of Arts by the addition of a white cord; the Bachelor of Education hood has a border of white edged with a cord of University blue. The hood for the degree of Bachelor of Home Economics has a border of turquoise, and that for the

degree of Bachelor of Social Service has a border of magenta. The colour for the degree of Bachelor of Applied Science is scarlet red; for the Bachelor of Science in Agriculture it is maize. The hood for the degree of Bachelor of Science in Forestry differs from that of the Bachelor of Applied Science by the addition of a green cord.

University Health Service

In 1925 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 University Health Service is at present housed in Hut No. 2, just west of the Auditorium Building. The original furniture and first aid equipment for this office were the generous gift of the Graduating Class of 1927.

Functions of the University Health Service

On admission to the University each new student must report to the Health Service Office to make an appointment for a medical examination. All ex-service students are required to fill in the medical history card, obtainable at the office. Such students are not required to have a University medical examination until at least nine months after discharge unless special examination is indicated. Students registered in the Second Year (ex-service excepted) must report to make an appointment for a re-check medical examination to determine their capacity for physical exercise. Those students who have been away from the University for a year or more are also required to report. At the time of the examination the student is informed of any physical defect, given advice, and urged to have remediable conditions corrected. 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. Therefore the University Health Service, with the co-operation of the Provincial Board of Health, Tuberculosis Division, and the B. C. Tuberculosis Association through its Christmas Seal fund, provides for a chest X-ray. 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 report to the Health Service Office before attending lectures. If a doctor has been in attendance the student is to bring a medical certificate from him. If the student is absent from an examination he must present a medical certificate, which is to be in the Health Service Office within one day after the termination of the examination period. The dean of the faculty is notified of absence from classes or exam-

inations because of illness. A medical certificate must show the nature and the period of the disability. Medical report forms may be obtained from the Health Service Office.

Summer Session

The University Health Service provides a health service for students attending the Spring and Summer Sessions. Details of this service may be found in the *Announcement of the Summer Session*.

Ex-service students attending the University for the first time must report to fill in the University medical history card.

PHYSICAL EDUCATION

The Programme of Physical Education includes three main divisions:

- (1) Physical Education activity programme.
- (2) Intramural sports and recreation.
- (3) Professional education in teacher training and recreational leadership, limited to members of the teacher training class and members of voluntary instructors' classes.

In September, 1946, the University proposes to begin to give work in Physical Education leading to a degree or diploma, the details being subject to the consideration of the Senate.

Physical Education Requirements for Men and Women

Two hours weekly of Physical Education activity courses are required of all students in First and Second Years except ex-service personnel and members of military units operating on the campus.

Students who enter with Senior Matriculation or equivalent, with the exception of ex-service personnel and members of military units operating on the campus, will be required to take the Physical Education courses during their first year at the University and for one year only.

Students who enter with a standing equivalent to the first two years at the University will not be required to take Physical Education courses.

No student will receive a degree who has not completed the Physical Education courses required of him at entrance. If a student's work in the Physical Education courses is unsatisfactory in any year, he will be required to repeat the work during the following year.

Students who are placed in a special medical category by the University Health Service will be assigned to remedial classes or

special groups after individual consultation with the Physical Education Staff.

Men: Male students who pass the medical examination will choose two courses or activities from the following.

Group I.

- (a) Archery
- (b) Badminton
- (c) Beginners' Games and Sports
- (d) Fencing
- (e) Golf
- (f) Square and Ballroom Dancing
- (g) Weight Lifting

Only one period a week may be selected from Group I.

Group II.

- (a) Boxing
- (b) Physical Training
- (c) Swimming—Beginners, Intermediates, Life Saving
- (d) Track and Field
- (e) Tumbling and Apparatus
- (f) Volunteer Instructors' Corps

Two periods a week may be selected from Group II.

First Year students may substitute membership on a Varsity team for one period and must select the other period from either Group I or Group II.

Second Year students may satisfy the regulations by:

1. membership on a Varsity team and one period from either Group I or Group II;

OR

2. membership on a Varsity team and participation in three intramural leagues or events;

OR

3. participation in three intramural leagues or events, and one period from either Group I or Group II.

Women:

Women who pass the medical examination will choose two courses from the following groups during each of the first two years. Only one course may be chosen from each group.

Group I.

- (a) Archery and Fencing
- (b) Badminton and Table Tennis
- (c) Golf
- (d) Swimming—(1) Life Saving
(2) Beginners and Intermediates

- (e) Team Sports for Beginners—Volleyball, Field Hockey, Basketball
- (f) Advanced Tumbling and Apparatus

Group II.

- (a) Folk Dancing
- (b) Fundamental Rhythmics
- (c) Gymnastics
- (d) Modern Dance (course (b) of this group is a prerequisite)
- (e) Square and Ballroom Dancing

First Year students may substitute membership on a Varsity team for one period and must select the other period from either Group I or Group II.

Second Year students may satisfy the regulations by:

1. membership on a Varsity team and one period from either Group I or Group II;

OR

2. membership on a Varsity team and participation in three intramural leagues or events;

OR

3. participation in three intramural leagues or events, and one period from either Group I or Group II.

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

Women

The Dean of Women undertakes the inspection of all accommodation offered for women students. Lists of available boarding houses and housekeeping rooms may be secured by applying to the Dean of Women's office. Men and women students are not permitted to lodge in the same house, unless they are members of the same family or receive special permission from the Senate. Women students under twenty-five years of age are permitted to occupy suites in apartment houses only when accompanied by some older person. Any 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 \$35 to \$40 a month.

Room and breakfast can be secured for \$20 a month. Meals may be obtained in the Cafeteria and the Brock Memorial Building; light refreshments are available at different points on the campus.

For the session 1946-47 there will be accommodation for about 50 women at Acadia Camp. The dining room at the camp is under the supervision of a trained dietitian. Accommodation is in single, double, or triple rooms, and the rates charged are \$38 or \$40 a month. Request for reservations should be made to the Dean of Women's office. Preference will be given to returned service women.

Men

Information concerning accommodation available for men may be obtained by applying to the Department of Extension or to the Registrar of the University. Charges for board and room vary from \$35 to \$45 a month, for room and breakfast from \$20 to \$25 a month, and for room alone from \$15 to \$20 a month. Meals may be obtained in the Cafeteria and the Brock Memorial Building; light refreshments are available at different points on the campus.

Students wishing accommodation either in Acadia Camp or in the Fort huts should apply to the Department of Extension at the University. The charge for room and board is \$40 a month, and about 330 students can be accommodated. Preference will be given to returned service men.

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 First Year of the Combined Course and the Second 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 First Year of the course in Nursing (or the Second Year of the Double Course in Arts and Nursing) a student must be eighteen years of age, and for admission to the 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

Preliminary registration may be made by mail. Except in the case of ex-service students receiving educational benefits from the Department of Veterans' Affairs, applications must be accompanied by the registration fee of \$5.00. Students registering for the first time must present their certificates in accordance with the regulations given under *Admission to the University*. Those who apply by mail will receive notice concerning their admission and standing.

Registration, except for Directed Reading courses, must be completed *in person* at the Registrar's office between September 12th and the last day for registration as follows: for First and Second Year students, Wednesday, September 18th; for other undergraduate students of the regular Winter Session, Friday, Septem-

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

ber 20th; for graduate students and for students in Extra-Sessional classes and Directed Reading courses, Tuesday, October 15th.

Registration is not complete until the applicant has turned in his registration booklet at the Registrar's office and has paid his First Term fees. Those who have not completed registration by the last day prescribed will be subject to payment of the late registration fee of \$2.00. Students who have been awarded scholarships or bursaries, the first instalment of which is less than the First Term fees, will be required to pay the difference upon registration.

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

In the Faculty of Arts and Science no student will be admitted who has more than three units of failures outstanding either from Senior Matriculation or from a previous year in the University.

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

Application for admission to First Year Nursing 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.

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 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. No registration for undergraduate students of the regular Winter Session will be accepted after Monday, September 30th, 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. 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 Uni-*

versity 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 Health Service 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. 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.

10. All students new to this University (First and other years) and all students registered in the Second Year must report to the Student Health Service for a medical examination.

LECTURESHIPS

The Hewitt Bostock Lectureship

Through the generosity of the Misses Bostock a lectureship has been established in honour of their father, the late Senator Hewitt Bostock, providing for a public lecture at least once in three years by a speaker of national or international reputation on a subject of educational or social importance.

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.

Registration is not complete until the First Term fees have been paid, and no student is entitled to admission to classes until after such payment.

Holders of scholarships or bursaries the first instalment of which is less than the First Term fees must pay the difference before registration is complete.

Ex-service students whose eligibility for assistance under P.C. 5210 has been approved by the Department of Veterans' Affairs are not required to pay fees.

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 last day of registration:	
Sessional Fee	\$ 80.00
Alma Mater Fee.....	13.00
	93.00
<i>Second Term</i> —Payable on or before January 15th.....	75.00
	\$173.00

IN SOCIAL WORK COURSE:

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before last day of registration:	
Sessional Fee	\$ 80.00
<i>Second Term</i> —Payable on or before January 15th.....	75.00
	\$160.00

IN TEACHER TRAINING COURSE:

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before last day of registration:	
Sessional Fee	\$ 77.00
Alma Mater Fee.....	13.00
	90.00
<i>Second Term</i> —Payable on or before January 15th.....	75.00
	\$170.00

IN APPLIED SCIENCE:

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before last day of registration:	
Sessional Fee	\$105.00
Alma Mater Fee.....	13.00
	118.00
<i>Second Term</i> —Payable on or before January 15th.....	100.00
	\$223.00

IN NURSING AND PUBLIC HEALTH*:

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before last day of registration:	
Sessional Fee	\$ 80.00
Alma Mater Fee.....	13.00
	93.00
<i>Second Term</i> —Payable on or before January 15th.....	75.00
	\$173.00

IN AGRICULTURE:

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before last day of registration:	
Sessional Fee	\$ 80.00
Alma Mater Fee.....	13.00
	93.00
<i>Second Term</i> —Payable on or before January 15th.....	75.00
	\$173.00

IN LAW:

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before last day of registration:	
Sessional Fee	\$105.00
Alma Mater Fee.....	13.00
	118.00
<i>Second Term</i> —Payable on or before January 15th.....	100.00
	\$223.00

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

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 \$10.00 per unit.

OCCUPATIONAL COURSE:*

<i>Registration</i> —Payable before registration.....	\$ 5.00
<i>First Term</i> —Payable on or before last day of registration:	
Sessional Fee	\$ 32.00
Alma Mater Fee	13.00
	45.00
<i>Second Term</i> —Payable on or before January 15th.....	30.00
	\$ 80.00

FOR PARTIAL STUDENTS

Fees per "Unit"	\$10.00
<i>Registration</i> —Payable before registration	
For 6 units or less.....	3.00
For over 6 units.....	5.00
<i>First Half</i> payable on or before last day of registration, along with	
Alma Mater Fee.....	13.00
<i>Second Half</i> payable on or before January 15th.	

FOR STUDENTS IN EXTRA-SESSIONAL CLASSES AND
DIRECTED READING COURSES

<i>Registration</i> —Payable before registration.....	\$ 3.00
Fees per 3-Unit Course.....	30.00
<i>First Half Unit Fees</i> payable on or before October 15th.	
<i>Second Half Unit Fees</i> payable on or before January 15th.	

FOR GRADUATES

<i>Registration</i> —Payable before registration	
For 6 units or less.....	\$ 2.00
For over 6 units.....	5.00
<i>Course Fees</i> (payable at \$10.00 per unit for courses taken)	125.00
Course fees due in any session may be paid in two equal instalments, on October 15th and January 15th.	

FOR BACHELOR OF EDUCATION

<i>Registration</i> —Payable before registration	
For 6 units or less.....	\$ 2.00
For over 6 units.....	5.00
<i>Course Fees</i> (payable at \$10.00 per unit for courses taken)	150.00
Course fees due in any session may be paid in two equal instalments, on October 15th and January 15th.	

LATE REGISTRATION

See page 36.....	\$2.00
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*NOTE. Students transferring credit from the Occupational to the Degree Course in Agriculture must pay the difference in fees.

The Alma Mater Fee, authorized by the Board of Governors at the request of the students, is a fee exacted from all students for the support of the Alma Mater Society.

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 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.

<i>Registration</i> —Payable before registration.....	\$ 3.00
Minimum Class Fee.....	15.00
Per "Unit".....	10.00
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

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.

MEDALS, SCHOLARSHIPS, PRIZES, BURSARIES, AND LOANS FOR 1946-47

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, fellowships, prizes, and bursaries are made by Senate, on the recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries and the faculties concerned, 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, one at the beginning of 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, except in the Teacher Training Course, 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 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.

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 1946-47 on any topic dealing with the history of the United Empire Loyalists and their influence on the development of Canada. 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)

*See paragraph 1, page 44.

Honours in Chemistry in the Faculty of Arts and Science; (b) Chemical Engineering in the Faculty of Applied Science. The award will be based upon the work of the last two years in these courses. The value of the scholarship is approximately \$150. The winning of this scholarship will not preclude the holder from enjoying the proceeds of a further award.

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 Scholarships*

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

Normally the scholarships will be payable in two instalments of \$250 each to provide for two years of graduate work. The payment of the second instalment will be subject to approval by the University of British Columbia of the first year's graduate work. In exceptional circumstances the full sum of \$500 may be made available for work to be completed in a single year.

Recipients must be qualified to undertake graduate and research work, in respect of scholarship, ability, character, and health. These scholarships will be granted with due consideration for the financial

*See paragraph 1, page 44.

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 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 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 available in the session 1945-46. The terms of award were as follows: These scholarships will be awarded to outstanding graduate students in any of the three faculties—Arts and Science, Agriculture, and Applied Science. The winners shall indicate satisfactory plans for graduate study at the University of British Columbia or at any other university approved by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries. Only one scholarship shall be available in any one faculty in one year. Applications must be made on forms available at the Registrar's office.

*See paragraph 1, page 44.

The Standard Oil Company of British Columbia Limited Fellowship*

For research in petroleum engineering the Standard Oil Company of British Columbia Limited offers a fellowship of \$950 open to Honours graduates in Chemistry in the Faculty of Arts and Science or graduates in Chemical Engineering in the Faculty of Applied Science. An additional amount, not to exceed \$150, may be granted 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 Standard of B. C. 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 Department of Geology and Geography 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 in respect not only of scholarship and research ability but also of 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 available in the session 1945-46. 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 Department of Geology and Geography of the University of British Columbia and the Cariboo Gold Quartz Mining Company Limited. Applications should be in the hands of the Registrar by December 10th.

*See paragraph 1, page 44.

Recipients must be qualified to undertake the research work in respect not only of scholarship and research ability but also of 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 Cominco Fellowship*

The Consolidated Mining and Smelting Company of Canada Limited offers annually a fellowship of \$750 for research related to the general field of metals, chemicals, and fertilizers. An additional sum of \$450 will be available for special equipment, supplies, and other expenses incidental to the investigation to be carried out under the fellowship. The fellowship is open to graduates in the Faculty of Arts and Science, Applied Science, or Agriculture of this or any approved university, provided that in the Faculty of

*See paragraph 1, page 44.

Arts and Science their 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 the donors. Copies of the full terms of award, which must be read by all applicants, may be obtained at the Registrar's office. Applications for the Cominco Fellowship should be submitted to the Registrar not later than April 15th.

The Edith Ashton Memorial Scholarship*

A scholarship of \$250, given by Mr. and Mrs. Daniel M. Armstead in memory of Edith Ashton, will be offered in the Department of Biology and Botany. This scholarship will be awarded to an outstanding graduate student whose topic of research is in the field of marine and freshwater botany or some field approved by the Head of the Department.

The Lions Club Fellowship*

The Lions Service Club offers a fellowship of \$1200 for training and research in some problem connected with cancer or virus diseases. An additional amount of approximately \$300 will be available for special equipment. The fellowship is open to a recent graduate who has taken Honours or majored with high standing in the Department of Bacteriology and Preventive Medicine. The topic of research will be chosen by the Head of the Department.

The Canadian Pulp and Paper Association, Western Branch, Fellowship*

The Canadian Pulp and Paper Association, Western Branch, Vancouver, offers a fellowship of \$1000 renewable annually, and tenable at the University of British Columbia, to students who are graduates in Forestry of this or any approved university and who are planning a career in some field related to Forestry. Winners of this award must have high scholastic standing and ability to do research. During tenure of the fellowship they are expected to undertake graduate study and pursue investigation of some problem approved by the Department of Forestry. Applications, on forms available at the Registrar's office, must be submitted not later than March 15th.

The Shell Oil Fellowship for Research*

The Shell Oil Company Limited presents an annual fellowship, tenable at the University of British Columbia, to a graduate of any approved university, for study and research leading to a

*See paragraph 1, page 44.

graduate degree in Chemistry, Chemical Engineering, Geology, Geophysics, Mechanical Engineering, or Physics. Through this fellowship, the student will receive \$750 for living expenses, and his University fees for that year will be paid by the Shell Oil Company. Full details of the award should be obtained from the Registrar's office. Applications, on forms available for that purpose, must be received by the Registrar not later than March 15th.

The Dorothy and William Dorbils Scholarship*

A scholarship of total value of \$2000, the gift of Dorothy and William Dorbils, will be available for award in 1950, and subsequently, to enable a student to undertake an approved programme of graduate studies in the field of the humanities or the pure sciences. To be eligible for the scholarship, an applicant must have completed four years at the University of British Columbia, including at least one year of graduate study. The award will be made to an outstanding student on the basis of scholastic achievement and promise in research. The winner will receive one third of the total value of the scholarship during each of the first three years of his graduate work outlined in the approved programme. In the event that he complete his course in less than three years, the balance of the award will be used to provide a scholarship for another graduate student. Further details may be obtained from the Chairman of the Committee.

The Shanahan's Limited Scholarship*

For research in colloidal chemistry Shanahan's Limited offers a scholarship of \$500, open to Honours graduates in Chemistry in the Faculty of Arts and Science, or graduates in Chemical Engineering in the Faculty of Applied Science. The topic of research will be chosen after consultation with the Department of Chemistry of the University and the donors. Recipients must be qualified to undertake graduate and research work in respect of scholarship, research ability, personality, and health.

The General Construction Company Limited Scholarship

(Donated through the Vancouver Men's Canadian Club)

A scholarship of \$300, the gift of the General Construction Company Limited, will be available for graduates in Civil Engineering of the University of British Columbia to undertake graduate study in engineering at this or any approved university. Recipients

*See paragraph 1, page 44.

must be qualified to undertake graduate work in respect of scholarship, ability, character, and health. If, in the opinion of the Department of Civil Engineering, no applicant is sufficiently qualified, the sum will be used to provide scholarships or bursaries for students completing the Third Year of Civil Engineering, and proceeding to the Fourth Year.

SCHOLARSHIPS FOR UNDERGRADUATES

1. IN ALL FACULTIES

University Great War Scholarships*

Two scholarships of \$200 each may be awarded, on the basis of the work of the First Year in Arts and Science or Agriculture, to returned soldiers, their dependents, and the children of deceased soldiers, proceeding to a higher year in any faculty.

2. IN ARTS AND SCIENCE

University Scholarships in Arts and Science

Two scholarships in Arts and Science of \$200 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 94.) 2. To the student standing highest with majors in group (2). (See page 94.) Students taking full Honours in Mathematics will be classified in group (1).

Two scholarships in Arts and Science of \$200 each will be awarded on the basis of the work of the Second Year to students proceeding to a higher year.

Two scholarships of \$200 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 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 200, Latin 202, Greek 90, Greek 101, or Greek 202, 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 44.

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 200 and Economics 100 or 200 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 300-303 with promise of service in the Empire. 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 \$200 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.

The Beverley Cayley Scholarship

A scholarship of \$100, in memory of Beverley Cayley, Arts '18, given under the terms of the will of his mother, the late Mrs. Cayley, will be awarded to the male student standing highest in English 100 and 101 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.

†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 44.

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 202, or 203, or 420).

The John and Annie Southcott Memorial Scholarship*

As on page 48.

The Summer Session Students' Association Scholarship*

A scholarship of \$40, 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.

The Vancouver Women's Canadian Club Scholarship in Home Economics

A scholarship of \$100, given by the Vancouver Women's Canadian Club, will be awarded for general proficiency in the work of the Third Year of the Home Economics course to a student proceeding to the Fourth Year of that course.

*See paragraph 1, page 44.

The Edwin Waterhouse Scholarship*

A scholarship of \$250, the gift of Price, Waterhouse, and Company, will be awarded to a student in Commerce who has completed his Third Year with high standing in the final examinations, and is proceeding to his Fourth Year. The award will be made to an applicant whose academic record, ability, and other qualifications are considered to be outstanding and who is deserving of financial assistance. Applications must be submitted to the Registrar not later than the last day of the final examinations.

The R. J. Pop Scholarship in Zoology

A scholarship of \$150, given annually by Mr. R. J. Pop, will be awarded to the student who completes the third year of the Honour Course in Zoology with highest standing and intends to pursue an investigation into terrestrial vertebrate Zoology related to the conservation of natural resources. If no third year student presents work of sufficient merit, the award may be made to a student in the fourth year who is proceeding to graduate work in the above field at this or any other university.

The Alaska Pine Company Scholarship in Wood Chemistry*

(Donated through the Vancouver Men's Canadian Club)

A scholarship of \$150, the gift of the Alaska Pine Company Limited, will be awarded to a student completing the Third Year of the Honours Course in Chemistry with high standing, and proceeding to the Fourth Year. The award will be made to a student who intends to undertake research in wood chemistry.

The Alaska Pine Company Scholarship in Commerce

(Donated through the Vancouver Men's Canadian Club)

A scholarship of \$150, the gift of the Alaska Pine Company Limited, will be awarded to the student who obtains the highest standing in Second Year Commerce and is proceeding to the Third Year of that course. To be eligible for this award the student must take Commerce 251 in the Second Year.

The Vancouver Daily Province Scholarship

(Donated through the Vancouver Men's Canadian Club)

A scholarship of \$250, given by the Vancouver Daily Province for the promotion of the study of government, will be awarded to a student taking an Honours course in Political Science (or a

*See paragraph 1, page 44.

combined Honours course in Political Science and some other subject). The award will be made to the student who completes the Third Year with highest standing in Government 300 and is proceeding to the Fourth Year of the Honours course.

The Alaska Pine Company Scholarship in Economics

(Donated through the Vancouver Men's Canadian Club)

A scholarship of \$150, the gift of the Alaska Pine Company Limited, will be awarded to the student who obtains highest standing in the Third Year of an Honours course in Economics and is proceeding to the Fourth Year of that course. In making the award, standing will be determined on the basis of the marks obtained in any six units of Third Year courses in Economics.

The Burbidge Scholarships

(Donated through the Vancouver Men's Canadian Club)

Two scholarships of \$125 each, the gift of Mr. P. W. Burbidge, will be awarded for general proficiency in the Honours course in Physics, or in Mathematics and Physics. These awards will be made to the two students obtaining highest standing in the examinations of the Third Year and proceeding to the Fourth Year.

The Alaska Pine Company Scholarship in Forestry

(Donated through the Vancouver Men's Canadian Club)

A scholarship of \$150, the gift of the Alaska Pine Company Limited, will be awarded to the student who obtains highest standing in the Fourth Year of Arts and Science and is proceeding to the final year in Forestry in the course leading to the degree of B.S.F.

The Cunningham Scholarship in Pharmacy

(Donated through the Vancouver Men's Canadian Club)

A general proficiency scholarship of \$100, the gift of Mr. George T. Cunningham, will be awarded annually to the student obtaining highest standing in the Third Year of Pharmacy and proceeding to the Fourth Year of the course.

The Woodward Scholarships

(Donated through the Vancouver Men's Canadian Club)

Two scholarships, the gift of the Honourable W. C. Woodward, will be available as follows.

1. The sum of \$125 will be awarded to the student in Third Year Commerce who obtains highest standing in Commerce 261 and is proceeding to the Fourth Year.
2. The sum of \$125 will be awarded to the student in Third Year Commerce who obtains highest standing in Commerce 467 and is proceeding to the Fourth Year.

To be eligible for either of these awards, a student must also obtain high standing in the other courses of the Third Year.

3. IN APPLIED SCIENCE

University Scholarship in Nursing and Health*

A scholarship of \$200 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 who is proceeding to the Second Year (or in the Double Course, proceeding to the Third Year) of the Course in Nursing and Health and has 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 Third Year in Applied Science, and proceeding to the Fourth Year.

University Scholarship in Applied Science

A scholarship of \$200 will be awarded to the student who obtains the highest marks in the Second Year in Applied Science and who is proceeding to the Third Year in that Faculty.

†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 44.

Royal Institution Scholarship in Applied Science

A scholarship of \$200 will be awarded for general proficiency in the work of the First Year in Applied Science to a student who is proceeding to the Second 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 Third Year of the Faculty of Applied Science, and proceeding to the Fourth Year.

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

A scholarship of \$50, given by the Women's Auxiliary No. 77 of the B'nai B'rith, will be awarded to the student in the Third Year Applied Science standing highest in the class of Chemical Engineering or Chemistry and proceeding to the Fourth 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 Third Year in Applied Science and proceeding to the Fourth 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 Third Year in Applied Science, and proceeding to the Fourth Year;
- (2) the sum of \$200 will be awarded to the undergraduate student standing highest in the Mechanical Engineering course of the Third Year in Applied Science, and proceeding to the Fourth Year.

The Canadian Forest Products Limited Scholarships

(Donated through the Vancouver Men's Canadian Club)

Two scholarships of \$150 each, the gift of Canadian Forest Products Limited, will be awarded to the students obtaining highest standing in the Third Year of the Forest Engineering course and proceeding to the Fourth Year.

The Lambert Scholarship

(Donated through the Vancouver Men's Canadian Club)

A scholarship of \$200, the gift of Brigadier Noel D. Lambert, will be awarded annually to the student obtaining highest standing in the Third Year of Civil Engineering and proceeding to the Fourth Year of that course.

The General Construction Company Limited Scholarship

(Donated through the Vancouver Men's Canadian Club)

A scholarship of \$200, the gift of the General Construction Company Limited, will be awarded to a student who completes the Second Year of Applied Science (Engineering) and is proceeding to the Third Year. The award will be for proficiency in the work of the First and Second Years.

The John Inglis Company Limited Scholarships

(Donated through the Vancouver Men's Canadian Club)

Two scholarships of \$125 each, the gift of the John Inglis Company Limited, Toronto, will be awarded annually to the students completing the Second Year with highest standing and proceeding to the Third Year in Mining or Metallurgical Engineering. Second Year students who intend to specialize in either of these fields, and are therefore eligible to be considered for these awards, should notify the Head of the Department of Mining and Metallurgy not later than the last day of the final examinations.

4. IN AGRICULTURE

University Scholarship in Agriculture

A scholarship in Agriculture of \$200 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 \$125, 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.

The Hogarth Scholarships

(Donated through the Vancouver Men's Canadian Club)

Two scholarships of \$125 each, the gift of Major General D. M. Hogarth, Toronto, will be awarded annually to students completing the Third Year of Agriculture and proceeding to the Fourth Year. The recipients will be recommended by the Faculty of Agriculture on the basis of general proficiency and outstanding ability in one or more of the fields of Agricultural Economics, Agronomy, Animal Husbandry, Dairying, Horticulture (including Plant Nutrition), Poultry Husbandry, and Farm Mechanics.

5. IN LAW

The Norgan Scholarships

(Donated through the Vancouver Men's Canadian Club)

Six general proficiency scholarships, the gift of Mr. George W. Norgan, will be awarded annually in the Faculty of Law as follows:

1. \$150 each to the three students obtaining highest standing in the examinations of the First Year and proceeding to the Second Year;
2. \$150 each to the three students obtaining highest standing in the examinations of the Second Year and proceeding to the Third Year.

*See paragraph 1, page 44.

UNIVERSITY ENTRANCE AND SENIOR MATRICULATION SCHOLARSHIPS

The Vancouver Sun Scholarships for Carriers*

The Vancouver Sun offers annually two scholarships of \$200 each to students entering the First Year of Arts and Science or Agriculture at the University of British Columbia. The terms of the scholarships require that applicants must have been carriers of the Vancouver Sun for at least two years. The scholarships will be awarded to the two applicants who rank highest on the basis of the marks obtained in any year on the written examinations in the scholarship subjects of University Entrance as outlined in *The Requirements for University Entrance and Senior Matriculation*. The selection of the winners will be made by the University, and applications, accompanied by the service certificate of the Vancouver Sun, should be forwarded to the Registrar not later than September 10th.

The Pacific Mills Limited Scholarship*

The Pacific Mills Limited offers annually a scholarship of \$250 to students entering the First Year of Arts and Science or Agriculture at the University of British Columbia. This scholarship is open to sons and daughters of employees of Pacific Mills Limited and Canadian Boxes Limited who are resident in British Columbia. The scholarship will be awarded to the applicant who ranks highest on the basis of the marks obtained in any year on the written examinations in the scholarship subjects of University Entrance, as outlined in *The Requirements for University Entrance and Senior Matriculation*. Selection of the winner will be made by the University. Full details of the terms of award may be obtained from the Personnel Manager of Pacific Mills Limited, or from the Registrar's office. Applications should be forwarded to the Personnel Manager not later than June 1st.

University 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

*See paragraph 1, page 44.

(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.

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.

Postponement of University Entrance Scholarships will be granted only on medical grounds.

Royal Institution Scholarships for Senior Matriculation

Six general proficiency scholarships will be awarded on the result of the Senior Matriculation examinations: (a) \$200 to the candidate of highest standing in the Province, (b) \$200 to the candidate of next highest standing in the Province, (c) \$200 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) \$200 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.

These scholarships will be paid only to students in attendance at the University of British Columbia.

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 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 News-Herald Awards in Journalism*

The Vancouver News-Herald offers annually two prizes to students who show promise in journalism. The first prize of \$200 is open to undergraduates of the Third or higher years of Arts and Science and Agriculture, the Second or higher years of Applied Science, and any year of Law. The second prize of \$150 is open to First or Second Year students of Arts and Science and Agriculture and First Year students of Applied Science. A winner in one of these categories is not eligible for a second award in the same category. Each competitor must submit five original articles published or suitable for publication in the Ubysey or other newspapers during the year preceding the awards. These articles may be news-stories, feature articles, reports, reviews, or editorials. Awards will be made by Senate on the recommendation of a committee consisting of the Editor of the News-Herald and the Head of the Department of English. Articles must be in the hands of the Registrar not later than March 31st.

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, Education, 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 1946-47 on recommendation of the Heads of the Department of Education and the Department of Economics, Political Science, and Sociology. Essays must be submitted by April 10th, 1947.

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

*See paragraph 1, page 44.

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 Ahepa Prize

A prize of \$100, given by the Gladstone Chapter No. 6, C.J., Order of Ahepa, will be awarded 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 student in the General Course.

The Armstead Prize in Biology and Botany

A prize of \$50, the gift of Mr. and Mrs. Daniel M. Armstead, will be awarded to a graduating student in the Honours course of the Department of Biology and Botany. The winner will be recommended on the basis of scholastic achievement and promise of ability in research.

The Llewellyn Jones Prize in Zoology

A cash prize of \$50, offered by Mr. J. R. J. Llewellyn Jones, 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, in the field of entomology, have been outstanding and worthy of recognition. In the event of there being no undergraduate of outstanding merit, the award will be made to a graduate of the University of British Columbia who is carrying out noteworthy graduate work at this or another university.

The British Columbia Packers Limited Prizes in Fisheries

During the Session 1945-46, the British Columbia Packers Limited offered a first prize of \$100 and a second prize of \$50 for the two best essays on each of two designated subjects in the field of the fishing industry. Any student registered for courses in fisheries was permitted to submit one essay.

The J. W. Dafoe Foundation Prizes

Two prizes of \$100 each, the gift of the J. W. Dafoe Foundation will be awarded to undergraduate students registered in the Third or Fourth Year during the Session 1945-46. Of these prizes, one will be awarded in the Department of Economics, Political Science, and Sociology, and the other in the Department of History, for the best essay on a subject approved by the Department and related to the significance of international co-operation. No candidate will be allowed to write on a subject closely related to that of his graduating essay. Essays must be submitted by October 1st, 1946. If no student reaches the required standard, the awards will be withheld.

The Essay Prize in International Relations

A prize of \$30, provided from the income of a trust fund established by an anonymous donor, will be awarded to Third or Fourth Year undergraduates for an essay in the field of international relations, on a subject to be approved by the Department of Economics, Political Science, and Sociology, and by the Department of History. No candidate will be allowed to write on a subject closely related to that of his graduating essay. Essays must be submitted by April 10th, 1947. If no student reaches the required standard, the award will be withheld.

The Cunningham Prize in Pharmacy

(Donated through the Vancouver Men's Canadian Club)

A cash prize of \$50, the gift of Mr. George T. Cunningham, will be awarded to the student in Pharmacy whose scholastic record in all years of the course has been the most outstanding.

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 Fourth 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 Fourth 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 Third 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 twelve Canadian universities of which the University of British Columbia is one. The prize will be awarded to a student of the Third 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. 370) 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

*See paragraph 1, page 44.

to the student in the Third Year of the Faculty of Applied Science who obtains the highest standing in Mechanical Engineering 358, Machine Shop Practice. Skill in the use of hand tools will receive special consideration.

The Timber Preservers Limited Prizes*

Prizes of the value of \$65, \$45, and \$25, given by the Timber Preservers Limited, will be awarded to the students enrolled in the course in Engineering Law (C.E. 476) of the Fourth Year of the Civil Engineering course in the Faculty of Applied Science who submit plans and specifications judged to be 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.

The Canadian Institute of Mining and Metallurgy (British Columbia Section) Prize

A cash prize of \$100, the gift of the Canadian Institute of Mining and Metallurgy (British Columbia Section), was offered for the best Master's thesis submitted in the Session 1945-46 by a graduate student at the University of British Columbia on the subject of mining, geology, or metallurgy.

The Ingledow Prizes

Two prizes of \$50 each, the gift of Mr. T. Ingledow, are available for undergraduates in Electrical Engineering who are members of the student branch of the American Institute of Electrical Engineers. One of these prizes will be awarded to a Third Year student for proficiency in the laboratory work of the courses E.E. 353 and 355, and the other to a Fourth Year student for proficiency in the laboratory work of E.E. 457. In making the awards, emphasis will be placed on the neatness, accuracy, and completeness of laboratory reports, and on practical ability in experimental work.

The H. R. MacMillan Export Company Limited Prizes

Through the generosity of the H. R. MacMillan Export Company Limited, prizes to the total of \$750 are available annually for undergraduates registered in the Forestry course. This sum will be divided into three equal parts, to provide a first prize of \$150

*See paragraph 1, page 44.

and a second prize of \$100 for the best two reports on each of three specified subjects. Full details regarding the subjects may be obtained from the Head of the Department of Forestry.

The Canadian Forest Products Limited Prizes

(Donated through the Vancouver Men's Canadian Club)

Two prizes of \$100 each, the gift of Canadian Forest Products Limited, will be awarded to students graduating in Forestry with the degree of B.A.Sc. The awards will be made on the basis of general proficiency in the work of the final two years.

The Northern Electric Company Limited Prize

(Donated through the Vancouver Men's Canadian Club)

A cash prize of \$100, the gift of the Northern Electric Company Limited, will be awarded to the student in Electrical Engineering whose scholastic record in the final two years of the course has been the most outstanding.

4. IN AGRICULTURE

The Dr. D. A. McKee Memorial Prize

A cash prize of \$30, established from the income of a trust fund donated by Mrs. D. A. McKee in memory of her husband, will be awarded annually to the student with the highest standing in the Third Year Agriculture, who is proceeding to the Fourth Year.

5. IN LAW

The Carswell Company Limited, Prizes

The Carswell Company Limited, Law Publishers, Toronto, offer annually three book prizes of the value of \$20 each. Of these prizes, one will be awarded in each year of the Law course to the student obtaining highest standing in that year.

The Norgan Essay Prize*

(Donated through the Vancouver Men's Canadian Club)

A cash prize of \$100, the gift of Mr. George W. Norgan, will be awarded to a student in the Third Year of Law for the best essay presented on a topic set or approved by the Faculty. If in any year no student reaches the required standard, the award will be withheld.

*See paragraph 1, page 44.

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 First 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 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 five 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 First Great War. The financial necessities of candidates are also taken into account.

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

Dependents of soldiers and others who have attained the standing as stated above and who are in need of financial assistance should apply to the Registrar not later than August 15th. The next awards will be made in 1947.

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

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

*See paragraph 1, page 44.

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 1946-47 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 August 15th.

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 or Degree 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 August 15th 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 or Degree in Social Work. Application must be made to the Registrar not later than August 15th.

The Frances Milburn P. E. O. Bursary*

A bursary of \$150, given by the Vancouver Chapters of the P. E. O. Sisterhood in memory of the late Frances Milburn, will be available for the session 1946-47 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

*See paragraph 1, page 44.

course. The award will be made on the recommendation of the Dean of Women, to whom applications should be sent not later than August 15th on forms available in the Registrar's office.

The Lady Laurier Club Bursary*

A bursary of \$100, given by the Lady Laurier Club of Vancouver, will be awarded to a woman student in Third or Fourth Year on the basis of scholastic standing and financial need. Applications, on forms available at the Registrar's office, must be received not later than August 15th.

The Alliance Francaise Bursary*

A bursary of not less than \$25, given by the Alliance Française, 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. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 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. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

The Alumni Association Bursary*

A bursary of the value of \$50, given by the Alumni Association of the University of British Columbia, will be awarded on the basis of scholarship and need to a student entering the First Year in Arts and Science or Agriculture. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 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 Second, Third, or Fourth Year of the Faculty of Applied Science, requiring financial assistance to enable

*See paragraph 1, page 44.

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 at the Registrar's office must be filed with the Registrar not later than August 15th.

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 Fourth 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 Second and Third Years at the University of British Columbia, and must give evidence of leadership, sterling character, and physical vigour. He shall also have been engaged during at least two summer sessions in woods employment, logging operations, cruising, or logging engineering. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

The David Thom Bursaries

From the funds of the David Thom Estate a sum of \$300 is available annually for the following bursaries:

1. A sum of \$150 to be awarded to the student who has passed University Entrance or Senior Matriculation with the highest 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 \$75 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 August 15th.
- *3. A sum of \$75 to be awarded to a student who has satisfactorily completed the work of the Third Year in Agriculture and is proceeding to the Fourth Year in that Faculty. Application must be made to the Registrar not later than August 15th.

Delta Gamma Bursary for the Blind*

A bursary of \$100 given by the Delta Gamma Fraternity will be awarded to a blind student requiring financial assistance to enable him or her to enter the University or to proceed to further

*See paragraph 1, page 44.

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 August 15th.

The Geldart Riadore Bursary*

A sum of \$150 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 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 two years at this University and has registered at the University for further study. To be eligible for this award the student must show evidence of academic ability, sterling, unselfish character, and active participation and leadership in University sport. The award will be made in the fall on the recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries, in consultation with interested members of Faculty.

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. Applications should be in the hands of the Registrar by August 15th.

The Mary C. Lipsett Bursary*

A bursary of \$300, 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

*See paragraph 1, page 44.

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 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 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. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

The Cooperative Seed Growers' Bursary*

A bursary of \$100, given by the British Columbia Cooperative Seed Association, will be awarded annually to a student who has 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 by August 15th.

The Vancouver Section National Council of Jewish Women Bursary*

A bursary of \$100, the gift of the Vancouver Section of the National Council of Jewish Women of Canada, will be awarded to a woman student who is an undergraduate in any year of any Faculty, or who is a graduate registered in the Teacher Training or Social Work courses. To be eligible for this award a student must have good ability and financial need. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

*See paragraph 1, page 44.

The Gamma Phi Beta Bursary*

A bursary of \$50, the gift of the Alpha Lambda Chapter of Gamma Phi Beta Sorority, will be awarded annually to a student in any year of the Home Economics course. To be eligible for this award a student must have financial need and high scholastic standing. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

The Provincial Council of British Columbia, Canadian Daughters' League, Bursaries*

Two bursaries of \$100 each, the gift of the Provincial Council of British Columbia, Canadian Daughters' League, will be available annually to assist women students who could not otherwise continue their courses. The awards, which will be made on the basis of character, academic record, and scholastic ability, will be open to students entering the Teacher Training course. In the event that no applicant in this course can qualify, the awards will be open to students entering Social Work. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

University Women's Club Bursary for Social Work*

A bursary of \$100, given by the University Women's Club of Vancouver, will be available to assist a woman student in the Professional Course in Social Work. To be eligible for this award a student must have high scholastic standing, an aptitude for social work, and financial need. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

Bursary for Proficiency (Special Award)*

Through the generosity of an anonymous donor, a bursary of \$1,000 was made available to enable a student with high scholastic standing and need of financial assistance to complete his or her undergraduate course. The recipient was chosen in September, 1944, from among bursary applicants entering First or Second Year in any faculty.

The Jack Cohen Bursary*

A bursary of \$150, the gift of Mr. S. J. Cohen, is available for a student who has completed the Third Year in Commerce and is proceeding to the work of the Fourth Year. To be eligible for this award, the student must have high scholastic standing, and financial

*See paragraph 1, page 44.

need. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

The Kiwassa Club of Vancouver Bursaries*

Four bursaries of \$150 each, the gift of the Kiwassa Club of Vancouver, will be available annually to assist women students proceeding to the course in Public Health Nursing (Nursing B), or the Professional Course in Social Work. To be eligible for these bursaries, applicants must have high scholastic standing, an aptitude for the field in which they are enrolling, and need of financial assistance. In making the awards, preference will be given to dependents of veterans and residents of Vancouver. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

The McLean Bursaries*

Through the generosity of Mr. and Mrs. J. S. McLean of Toronto, four bursaries of \$250 each are available for the Session 1946-47. These bursaries will be awarded to students entering the Second Year in Arts and Science or Agriculture, or the First Year in Applied Science. Preference will be given to students whose homes are in more remote parts of the Province. In making the awards, consideration will be given to scholastic ability and financial need. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

The Pacific Meat Company Bursary*

A bursary of \$200 is offered annually by the Pacific Meat Company of Vancouver for research related to problems of the meat industry. The award is open to a student, or students, in the Department of Animal Husbandry. Applications should be in the hands of the Registrar by August 15th.

The Nat Bell Bursary*

A bursary of \$150, given by Angela Bell in memory of her father, will be awarded annually to a student registered in any year and any faculty who has outstanding ability and financial need. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

*See paragraph 1, page 44.

The R.C.A.F. Veterans' Bursary Fund*

A sum of money given to the University by the Wartime Convalescent Homes, War Charity Funds, Incorporated, Vancouver Division, provides an annual fund of approximately \$300 for bursaries. These bursaries will be available for R.C.A.F. veterans of the War 1939-1945 and for their dependents. Awards will be made on the basis of scholastic standing and financial need. Applications, on forms obtainable at the Registrar's office, should be submitted to the Registrar not later than August 15th. These awards will be available for the first time in the Session 1947-48.

The Teamsters' Joint Council No. 36 Bursary*

(Donated through the Vancouver Men's Canadian Club)

An annual bursary of \$250, donated by the Teamsters' Joint Council No. 36, is offered to a student in any year and faculty. This bursary will be given to a student who has need of financial assistance and has high scholastic standing. To be eligible for the award, an applicant must be the son or daughter of a member of the International Brotherhood of Teamsters in B.C. In the event that no such applicant can qualify, the bursary will be awarded to the son or daughter of a member of any International Trade Union. In choosing the recipient, preference will be given to students who are registered in the lower years. Applications, on forms available at the Registrar's office, must be submitted to the Registrar not later than August 15th.

The Lauder Mercer and Company Limited Bursary*

(Donated through the Vancouver Men's Canadian Club)

A bursary of \$250, donated by Lauder Mercer and Company Limited, will be available to assist a male student entering the final year of the course leading to the degree of Bachelor of Commerce. The award will be made to a student who has high standing in the work of the preceding year, and need of financial assistance. Applications, on forms available at the Registrar's office, must be received by the Registrar not later than August 15th.

The Pattison Bursaries*

(Donated through the Vancouver Men's Canadian Club)

Two bursaries of \$100 each, the gift of Mr. J. W. Pattison, are available for graduates taking the Professional Course in Social Work or for undergraduates who intend to enter this field. The

*See paragraph 1, page 44.

awards will be made to students with high scholastic standing and need of financial assistance. Applications, on forms available at the Registrar's office, must be submitted to the Registrar by August 15th.

Special Bursaries Fund*

For the Session 1946-47 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, on forms available at the Registrar's office, must be in the hands of the Registrar not later than August 15th.

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, Bursaries, and Loans*.

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 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 First and Second Years of that Faculty. All applicants for loans must be recommended by the Dean of the Faculty of Applied Science.

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.

*See paragraph 1, page 44.

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. 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, Agriculture, and 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 H. R. MacMillan Loan Fund

Through the generosity of Mr. H. R. MacMillan, a loan fund has been established to assist students in Forestry. Loans from this fund are to be repaid within three years from graduation, and until then no interest will be charged. Assistance to any one student is limited to \$300. Loans will be made on the basis of scholarship and financial need. Students may obtain application forms and further details from the Bursar.

Dean of Women's Fund

Through the generosity of several donors a fund has been established to assist women students who are temporarily in financial need. The fund is intended for use in emergency situations where limited assistance is required, and is administered by the Dean of Women. In the Session 1945-46 contributions to the fund were received from the Alumnae of the University of Toronto (The Marion McElhanney Memorial Bursary), the Kappa Kappa Gamma Mother's Club, and the Kappa Kappa Gamma Sorority.

SCHOLARSHIPS ANNOUNCED BY THE UNIVERSITY BUT AWARDED BY OTHER INSTITUTIONS

The Rhodes Scholarships

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 will be awarded a third year only if he presents a definite plan of study for that period satisfactory to his College and to the Rhodes Trustees.

In special circumstances Rhodes Scholars may be allowed, if the conditions are approved by their own College and by the Rhodes Trustees, either to postpone the third year, returning to Oxford for it after a period of work in their own countries, or to spend it in graduate work at any university of Great Britain, and in special cases in other parts of the world (excluding, in the case of Canadian Rhodes Scholars, Canada or the United States).

The value of a Rhodes Scholarship is £400 a year. At most Colleges, and for most men, this sum is scarcely sufficient to meet a Rhodes Scholar's necessary expenses for term-time and vacations, and Scholars who can afford to supplement it by, say, £50 a year from their own resources are strongly advised to do so. The cost of the voyage to and from England must be borne by the Scholar.

A candidate to be eligible must be a male British Subject, with at least five years' residence, with the intention of permanent residence, in Canada. At the time of application the candidate must be of such an age that he will have passed his nineteenth and not have passed his twenty-fifth birthday by October 1st, 1947, and must be unmarried. He must have completed at least two years at a Canadian university.

A candidate may apply either in the province of residence or in the province in which he has attended university.

In the election for 1946 (held in the fall of 1945) certain of the rules regarding eligibility, viz. age, marriage, were eased for candidates who had been in war service. At the time of the University Calendar going to press it is not known if the same relaxation will apply to the 1947 election, and candidates should make enquiry from the Registrar at the University or the local Secretary of the Rhodes Trust.

In that section of the Will in which he defined the general type of scholar he desired, Mr. Rhodes mentioned four groups of qualities,

the first two of which he considered most important:

1. Literary and scholastic attainments;
2. Qualities of manhood, truth, courage, devotion to duty, sympathy, kindness, unselfishness, and fellowship;
3. Exhibition of moral force of character and of instincts to lead and to take an interest in his fellows;
4. Physical vigour, as shown by fondness for and success in outdoor sports.

Some definite quality of distinction, whether in intellect, character, or personality, or in any combination of these, is the most important requirement for a Rhodes Scholarship, and it is upon this that Committees will insist. Success in being elected to office in student organizations may or may not be evidence of leadership in the true sense of the word. Mr. Rhodes evidently regarded leadership as consisting in moral courage and in interest in one's fellow men quite as much as in the more aggressive qualities. Physical vigour is an essential qualification for a Rhodes Scholarship, but athletic prowess is of less importance than the moral qualities developed in playing outdoor games. Poverty does not give a special claim to a Scholarship. The best candidate should be appointed regardless of his financial circumstances.

Each candidate for a Scholarship is required to make application by October 31st, 1946, to the Secretary of the Committee of Selection of the province in which he wishes to compete. Full information may be obtained from Mr. W. T. Brown, c/o Odlum Brown Investments Ltd., 470 Granville Street, Vancouver, B. C.

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 £350 per annum are tenable, ordinarily, for two years. Scholarship winners with special needs may receive additional money grants during the period of their tenure. The scholarships 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. Detailed information may be obtained from the Registrar's office.

*See paragraph 1, page 44.

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 First Great War. Nine graduate scholarships to the value of \$1300 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.

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.

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.

The International Brotherhood of Pulp, Sulphite and Paper Mill Workers Scholarship

A scholarship of \$200, given by the International Brotherhood of Pulp, Sulphite, and Paper Mill Workers, Local 312, Ocean Falls, is available annually for a student entering First Year at the

*See paragraph 1, page 44.

University of British Columbia. This scholarship, which is open to students in Ocean Falls, Powell River, Port Alice, Port Mellon, and Woodfibre, will be awarded to the applicant obtaining highest standing in the written examinations in the scholarship subjects for University Entrance. Application forms and further information may be obtained by writing to the Secretary, Local 312, Ocean Falls, B. C.

The French Government Scholarship

Scholarships of the present value of 54,000 francs and fees are donated by the French Government for graduate study in France. They are tenable for one year and are renewable. The awards are made by the French Embassy on the recommendation of the Head of the Department of French in the University.

The Summerland Scholarship*

A scholarship of \$250, given by the citizens of Summerland, is available annually for a student of Summerland High School proceeding to the University of British Columbia, or some other institution of higher learning in the event that courses of the winner's choice are not available at the University of British Columbia. The scholarship will be awarded to the applicant who, in the opinion of the Summerland selection committee, best exemplifies the qualities of the all-round student.

Viscount Bennett Trust Fund*

Under the terms of a deed of gift to the Canadian Bar Association from the Right Honourable Viscount Bennett, P.C., K.C., LL.D., D.C.L., Honorary Life President of the Association, a trust fund known as the Viscount Bennett Trust Fund has been established. The annual income from the fund or the sum of \$1,000, whichever is less, will be paid annually as a scholarship for graduate study at an institution of higher learning to be approved by a scholarship committee. The scholarship is open to a person of either sex who has graduated from an approved law school in Canada or who, at the time of application, is pursuing his or her final year of studies as an undergraduate student. The award is to be made by the committee at the time of the mid-winter meeting of the Council of the Association. The Faculty of Law of this University has been approved by the Committee. Full information as to qualifications of applicants and the necessary forms may be had on application to the Registrar.

*See paragraph 1, page 44.

The Crofton House Alumnae Scholarship*

A scholarship of \$175, the gift of the Crofton House Alumnae, is available annually for a student of Crofton House School who is proceeding to the University of British Columbia. In making the award, consideration will be given to scholastic ability, character, leadership, and participation in the activities of the School. The winner will be selected by the Headmistress and Staff.

The Imperial Oil Graduate Research Fellowships*

The Imperial Oil Limited has established four research fellowships of the value of \$1,000 each, open to graduates of any approved university in Canada. These fellowships are offered for graduate work leading to a Master's or Doctor's degree in the fields of petroleum engineering, petroleum geology, chemistry or chemical engineering, and mechanical engineering. Applications must be submitted to the Imperial Oil Scholarship Committee, Imperial Oil Limited, 56 Church Street, Toronto, not later than June 1st. Application forms are available at the Registrar's office.

*See paragraph 1, page 44.

1946-47

THE
FACULTY
OF
ARTS AND SCIENCE

1946-1947

1946-47

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.), Bachelor of Social Work (B.S.W.), Master of Arts (M.A.), and Master of Social Work (M.S.W.).

In addition, a course is provided leading to a Diploma in Teacher Training.

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 six years on completion of 90 units chosen so as to cover the requirements for both degrees. Students entering Second Year Commerce not later than September, 1946, may complete the double course in five years under the old regulation.

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

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

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

No credit will be granted for work done at other universities in the same academic year in which work has been attempted at this University, whether in the Summer Session or in the Winter Session or otherwise. Extra-mural work done at other universities prior to registration at this University may be accepted, if approved by the Faculty, but may not exceed 3 units in respect of any one academic year or 15 units in all subsequent to Senior Matriculation. If a student is granted credit for extra-mural work taken elsewhere, the number of units which he may take at this University without attendance at a Winter or Summer Session will be correspondingly reduced.

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

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

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

NOTE 1. Students in any of the affiliated Theological Colleges who file with the Registrar a written statement expressing their intention of graduating in Theology will be allowed to offer in each year of their Arts course, in place of optional subjects set down in the Calendar for the year and the course in which they are regis-

tered, 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 100 and 101 in the First Year and English 200 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 100, in the First Year.....	3
(d) Economics 100 or 200, or History 101, 202, 203, or 304, or Psychology 100 or 101, or Philosophy 100, or Sociology 200	3
(e) Biology 100, or Chemistry 100, or Geography 101, or Geology 201 and 202, or Physics 90, or Physics 100	3
(f) Three courses—not already chosen—selected from the following:	

Bacteriology 201, Biology 100, Botany 200, Chemistry 100, Chemistry 200, Chemistry 304 and 305, Commerce 191 (Economics 205 or Geography 205), Economics 100, Economics 200, Economics 335, French 101, French 202, Geography 101, Geography 202, Geology 201 and 202, Geology 302 and 303, †German 90 (Beginners'), German 100 or 101, German 200, †Greek 90 (Beginners'), Greek 101, Greek 202, Greek A (see Calendar 1935-1936)**, Greek 2 (see Calendar, 1936-1937)**, Greek 314, Greek 315, History 101, History 202, History 203, History 304, †Latin

*For credit that can be given for Senior Matriculation standing, complete or partial, see page 92.

†See regulations 2, 7, and 8.

‡See regulations 4, 5, 7, and 8.

**These courses are offered only by Victoria College.

90 (Beginners'), Latin 101, Latin 202, Mathematics 200, Mathematics 201, Philosophy 100, Physics 90, Physics 100, Physics 200, Physics 220, Psychology 100, Psychology 101, Sociology 200, Spanish 90 (Beginners'), Spanish 101, Spanish 201, Zoology 200.....	9
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NOTES

Bacteriology 201, Botany 200, Commerce 191, Economics 200, Economics 335, Geography 202, Geology 201 and 202, 302 and 303, Greek 314, Greek 315, History 304, Philosophy 100, Sociology 200, and Zoology 200 are not open to First Year Students.

History 202 is open to First Year students only if they are preparing for entrance to the Normal School. Geology 201 and 202 are normally Third Year subjects, but may be taken by Second Year students (full undergraduate and conditioned).

Chemistry 304 and 305 are open to Second Year students providing that the prerequisites have been taken.

Geology 201 and 202 must be taken in the Second Year by students intending to take the Honours course in Geology. Geography 101 may not be taken for credit along with Geology 201 and 202. Geography 101, however, may be substituted for Geology 201 and 202 as a prerequisite by the addition of extra laboratory work to be arranged by the Department of Geology and Geography.

2. Students who have not presented German or Greek or Latin or Spanish for University Entrance may fulfil the language requirements for the degree by taking Beginners' German or Beginners' Greek or Beginners' Latin or Beginners' Spanish (courses numbered 90 in the several departments), to be followed respectively by German 100 or 101 and German 200 or Greek 101 and Greek 201 or Latin 101 and Latin 202 or Spanish 101 and Spanish 202 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 200 for the First Year and German 300 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 200, German 200, or Latin 202 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 101, French 202; Latin 90 (Beginners'), Latin 101, Latin 202; German 90 (Beginners'), German 100 or 101, German 200; Greek 90 (Beginners'), Greek 101, Greek 202, Greek A (see Calendar, 1935-36)*, Greek 2 (see Calendar, 1936-37)*; Spanish 90 (Beginners'), Spanish 101, Spanish 201.

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.

*These courses are offered only by Victoria College.

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 units in another subject, both subjects to be chosen from one of the following groups:
- (1) Bacteriology, Biology and Botany, Chemistry, Geography, Geology, Mathematics, Physics, Psychology, Zoology.
 - (2) Economics, Education (not more than six units, chosen from Education 509 and Education 510 to 582 inclusive; and only for those who have completed their Normal Training), English, French, Geography, German, Government, Greek, History, Latin, Mathematics, Philosophy, Psychology, Sociology, Spanish, 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 course or a language course numbered 100-199, 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.

†Those who intend to enter the Teacher Training Course should consult section 3, page 120.

For the purpose of this regulation the following subjects are considered Third and Fourth Year subjects: Botany 200 or Zoology 200 (if both are taken), Chemistry 304* and 305*, Economics 512, Geography 202, Geology 201 and 202, Geology 302 and 303, German 200 (if preceded by German 90 and German 100 or 101), Greek 202, Greek 314, Greek 315, History 304, Latin 202 (if preceded by Latin 90 and Latin 101), and Philosophy 100; also the subjects under 1 (*d*) or 1 (*e*) postponed to the Third or Fourth Year, as provided for under paragraph 6, page 93.

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

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

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

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

B. Honours Curriculum

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

*See prerequisite for Chemistry 304 and 305.

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 1st.

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 1946-47. 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 100, Biology 100.

Required Courses: Bacteriology 301; candidates must select the remaining 15 units required in consultation with the Head of the Department.

Biology and Botany

Prerequisites: Biology 100, Chemistry 100, Botany 200.

Chemistry 300, Physics 100*, and Zoology 200 are required before completion of the course and should be taken as early as possible.

Required Courses: Botany 300, 330, 340, and 315 or 316.

Optional Courses: Biology 301 and 302, Biology 400; courses in Botany not specifically required; and courses in Zoology. Optional courses should be selected in consultation with the Department.

Biology and Botany (Genetics Option)

Prerequisites: Biology 100; Chemistry 100, 300; one of Botany 200, Zoology 200, Biology 310. (Where possible both Botany 100 and Zoology 200 should be taken.)

Course: Biology 300, 301, 302, 303. Six units of more advanced courses in Biology, Botany, Zoology. Three to six units from Agronomy 407, 421, 500; Genetics 302, 303; Animal Husbandry 323; Poultry Husbandry 310, 311. Thesis (three units).

Biology and Botany (Physiology Option)

Prerequisites: Biology 100; Botany 200 or Zoology 200 (both should be taken where possible); Chemistry 300.

Required Courses: Biology 400; Botany 330, 331 (Horticulture 441); problem; thesis.

Optional Courses: At least 9 units from the following: Botany 340; Zoology 300, 303; Chemistry 409, 419; Bacteriology 402; Agronomy 415; Animal Husbandry 421, 422; Dairying 305; Poultry Husbandry 410.

Biology and Botany (Plant Pathology Option)

Prerequisites: Biology 100; Botany 200; Zoology 200; Chemistry 100, 300.

Required Courses: Botany 315, 316, 330, 340, 415; Zoology 302, 305; thesis.

Optional Courses: In consultation with the Department, students in Arts and Science will select at least 8 units from the following: Agronomy 202, 211; Horticulture 213, 317, 441, 442; Agricultural Economics 301; Botany 300, 411. Students in Agriculture are required to select 12 units, from three departments in the Faculty of Agriculture.

*Or, with the consent of the Department of Biology and Botany, Physics 90.

Chemistry

Prerequisites: Chemistry 100 and 200, Physics 100, Mathematics 200.

Course: Chemistry 300, 304, 305, 310, 407, 409, 410, 411.

Classics

Prerequisites: Greek 202, Latin 202.

Course: Greek 310, 410 and Latin 310, 410; any three of Greek 303, 305, 306, 407; any three of Latin 303, 304, 405, 406; and either Greek 330 or Latin 329.

As proof of ability to write Greek and Latin prose, candidates must attain not less than Second Class standing in Greek 310, 410 and Latin 310, 410. During the candidate's Fourth Year, papers will be set in sight translation, and the candidate is advised to pursue a course of private reading under the supervision of the Department.

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

Economics

Prerequisite: A reading knowledge of French or German.

Course: Economics 100, if not already taken; any 15 further units in the Department, to include Economics 300, 330 or 400, and 335; and two from the following group: Economics 305, 310, 320, 325, 405, 435, Government 300, Sociology 200. 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.

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 200. 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 434 and 435 (involving an examination on the life, times, and complete works of some major English author), 440, 442 (in the Third Year), 443 (in the Fourth Year), 444 and 445 (the seminars, of which 445 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

Prerequisite: French 202.

Course: French 300, 301, 302 in the Third Year;
French 400, 401, 402 in the Fourth Year.

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

Geography

Prerequisites: Geography 101 and Geology 201 and 202. If possible Geography 202 should be taken in the Second Year.

Course: Fifteen units chosen from Geography 202, 303, 305, 306, 407, 409, and 412. Because of breadth of field encompassed by Geography, courses in Economics, Geology, History, Mathematics, Sociology, and the natural sciences may be substituted with the approval of the Department of Geology and Geography.

Geology

Prerequisites: Geology 201 and 202. If possible, Geology 302 and 303 and Geology 412 should be taken in the Second Year. Chemistry 100 and if possible Physics 100 should be taken in the First Year, as these are required for Geology 302 and 303, and Geology 407, and are of great value in Geology 201 and 202. Biology 100 is recommended in the Second Year, as it is prerequisite to Zoology 200, which should be taken in the Third Year as a valuable preparation for Geology 406.

Course: Eighteen units to be chosen from Geology 304, 305, 404, 407, 408, 409, 410, 411, and 522. If Geology 302 and 303 have not been taken in the Second Year they must be taken in the Third Year as they are prerequisite to Geology 407 and 408.

History

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

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

Course: History 309 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 202.

Course: Latin 303, 304, 329, 405, 406, and Greek 330. The candidate must also take Latin 310 and 410, 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 200, Physics 100.

Course: Any 18 units of Mathematics 300, 301, 302, 303, 304, 400, 401, 402, and 403, and Physics 200 and 300. A final Honours examination, written or oral, is required.

Philosophy

Prerequisites: Philosophy 100, Psychology 101.

Course: Psychology 200 or 500, and 15 units chosen from Philosophy 200, 201, 300, 301, 302, 303, 400, 401, 402, 500.

Physics

Prerequisites: Mathematics 200, Physics 100, Chemistry 100.

Course: Mathematics 300, 302, 401; Physics 200 and 300; and 15 additional units. Students are advised to take Chemistry 304 and 305 and Chemistry 310, if possible.

Political Science

Prerequisite: A reading knowledge of French or German.

Course: Economics 100, if not already taken, any 15 further units in the Department, to include Government 300, Economics 335, and three from the following group: Sociology 200, 325, Government 325, 400, 425, 430, 435, Economics 300, 305, 310, 320, 325, 330, 400, 435. 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.

Psychology

Prerequisites: Psychology 101, Philosophy 100, Biology 100, Mathematics 200, Physics 90 or 100.

Course: Philosophy 303, and 15 units chosen from Psychology 200, 201, 202, 300, 301, 302, 400, 401, 402, 500.

Sociology

Prerequisite: A reading knowledge of French or German.

Course: A minimum of nine and a maximum of twelve units selected from Sociology 300, 325, 330, 400, 425, 430, 435 and a minimum of six and maximum of nine additional units selected from Economics 100, 300, 310, 320, 325, 330, 335, 435, 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 100, Chemistry 100, Zoology 200.

Physics 100*, Botany 200, and Chemistry 200 and 300 are required before completion of the course and should be taken as early as possible.

*Or, with the consent of the departments concerned, Physics 90.

Required Courses: Zoology 300, 301, 303, 304.

Optional Courses: Zoology 302, 305, 306, 307, 400, 401, 402, courses in Botany; Biology 300, 301, 302, 303, 400; Geology 400. 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, Geography, 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 201, Biology 100, Chemistry 100.

Course: Bacteriology 301, 401, 402, and 403, and a thesis.

Biology and Botany

Prerequisites: Biology 100, Chemistry 100, Botany 200.

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

Chemistry

Prerequisites: Chemistry 100 and 200, Physics 100, Mathematics 200.

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

Classics

Prerequisites: Greek 202, Latin 202.

Course: Latin 310 and 410; any two of Greek 303, 305, 306, 407; any two of Latin 303, 304, 405, 406.

Economics

Prerequisite: A reading knowledge of French or German.

Economics 100 is not available as an option in Economics to students taking combined Honours courses including either History 416 or History 417.

Course: Twelve units, including Economics 300, 330 or 400, 335, and Economics 100, 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 200. 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 440, 444, 445, 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 202.

Course: If the graduating essay is written on a French subject, French 300 and 302, 400 and 402; otherwise either these courses or French 300 and 301, 400 and 401.

Courses 301 and 401 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

Prerequisites: Geology 201 and 202.

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

Geology and Geography

Prerequisites: Geology 201 and 202 and Geography 202.

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

German

Prerequisite: A First Class or high Second Class in German 200.

Course: German 300, 302, and any two of 301, 400, 401, 500.

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 310 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 202.

Course: Latin 310 and 410 and any four of 303, 304, 329, 405, 406. 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 200.

Course: Any twelve units of Mathematics 300, 301, 302, 303, 304, 400, 401, 402, 403.

Philosophy

Prerequisites: Philosophy 100, Psychology 101.

Course: Twelve units chosen from Philosophy 200, 201, 300, 301, 302, 303, 400, 401, 402, 500.

Physics

Prerequisites: Mathematics 200, Physics 100.

Course: Physics 200, 300, and 303 and four units from the following: Physics 301, 302, 401, 402, and 403.

Political Science

Prerequisite: A reading knowledge of French or German.

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

Psychology

Prerequisites: Psychology 101, Philosophy 100.

Course: Twelve units chosen from Psychology 200, 201, 202, 300, 301, 302, 400, 401, 402, 500.

Sociology

Prerequisite: A reading knowledge of French or German.

Course: Twelve units selected from Sociology 300, 325, 330, 400, 425, 430, 435.

Zoology

Prerequisites: Chemistry 100 and 200, Biology 100, Zoology 200.

Course: Zoology 300, 301, 303, and 304.

COURSE LEADING TO THE DEGREE of B.Com.

Students entering the University in the session beginning September, 1946, and thereafter, who have not completed the First Year of Arts and Science or its equivalent or who do not hold an honourable discharge from His Majesty's armed services will be required to complete a full five years of work as prescribed by Calendar regulations before being granted the degree of B.Com.

Students who are eligible to enter the Second Year of Commerce in the session 1946-47 as prescribed in the Calendar announcement of 1945-46 or who hold honourable discharge from His Majesty's armed services will be permitted to proceed to the degree of B.Com. on completion of courses amounting to 60 units chosen in conformity with Calendar regulations (i.e. upon completion of four years of work including First Year Arts and Science or its equivalent).

Honours standing will be accorded those students who obtain an average standing of 80 per cent. in the Fifth Year and 75 per

cent. in the Fourth Year, and who do not fail in any subject taken in the Fourth and Fifth Years.

For the regulations governing the double course leading to the degrees of B.A. and B.Com. 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 three 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 200 or 205; Mathematics 201 or 202, or an additional course in the language taken in the First Year (students who contemplate taking advanced work in Statistics, Economics 435, should take Mathematics 202); Economics 200; Commerce 191; elective, 3 units, preferably Commerce 251.

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 200.

In view of the importance which rightly attaches to the capacity for adequate and clear expression in writing, Regulation 12, on page 127 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 300; Economics 335, or a third course in the language elected in the Second Year; Commerce 261; Commerce 251, 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 310, if not already taken; Commerce 391; Commerce 371; 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 356, 381, 457, 466, 467; Economics 320, 325, 405, 435; Agricultural Economics 301, 400; English, 3 units; Government 300, 400, 425, 430; language, 6 units; Mathematics 201, 202; Mining, 3 units; Philosophy 401; Psychology 101, 201, or 300.

Fifth Year

The details of courses to be taken in the Fifth Year will be announced in subsequent issues of the Calendar.

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 100 and 101 in the First Year	3
(b) Chemistry 100 in the First Year	3
(c) Chemistry 225	3

(d) Biology 100	3
(e) Physics 90 or Physics 100 or Physics 110.....	3
(f) Home Economics 90 (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 91 (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 100 (First Term).....	1½
(i) Home Economics 101 (Second Term).....	1½
(j) Home Economics 200 (First Term).....	1½
(k) Home Economics 201 (Second Term).....	1½
(2) <i>Three courses from the following:</i>	
Agriculture 100, Bacteriology 201, Botany 200, Commerce 191, Economics 200 or Economics 100, English 200 or English 205, Geography 101, History 101 or History 202 or History 203, language (maximum 6 units), Mathematics 100, Mathematics 200 or Mathematics 201, Philosophy 100, Psychology 101, Sociology 200, Zoology 200.....	9

Notes

1. Bacteriology 201, Botany 200, Commerce 191, Economics 200, Philosophy 100, Psychology 101, Sociology 200, and Zoology 200 are not open to First Year students.

2. Bacteriology 201, Economics 200, and Psychology 101 are required courses for the degree in Home Economics and are to be taken in the Second or Third Year. Students should elect Economics 200 and Psychology 101 in the Second Year where possible.

3. If the student has presented Home Economics (CC) III for University Entrance, Home Economics 100 and 101 are to be taken in the First Year and Home Economics 200 and 201 in the Second Year.

If the student has presented Home Economics (A) III for University Entrance, Home Economics 91, 100, and 101 are to be taken in the First Year and Home Economics 200 and 201 in the Second Year.

If the student has presented Home Economics (B) III for University Entrance, Home Economics 90 and 101 are to be taken in the First Year and Home Economics 100, 200, and 201 in the Second Year.

If the student has not the required Home Economics standing from the high schools, Home Economics 90, 91, and 101 are to be taken in the First Year and Home Economics 100, 200, and 201 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 225, 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 201, Biology 401, Chemistry 325, Home Economics 300, 301, 302, and 303.

In the Fourth Year, the course is as follows. Home Economics 420 and 421 are required of all Home Economics students. In addition, those wishing to train as dietitians must take Home Economics 413, 414, 415, and 416, and those planning to enter the teaching profession must take Home Economics 400, 401, and 403.

Animal Husbandry 422 and Horticulture 316, in the Faculty of Agriculture, may be taken as electives.

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 510 to 582 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.

COURSE LEADING TO A BACHELOR'S DEGREE IN PHARMACY

In the Session 1946-47, the first two years of the four-year course leading to a Bachelor's Degree in Pharmacy will be given.

Fuller details of the course in Pharmacy will be available before the opening of the Session.

First Year:

Chemistry 100, English 100 and 101, Mathematics 100, Physics 90 or 100, and one optional subject to be chosen from the list in paragraph 1 (f), page 91. Students who have not obtained standing in Latin III of the high school course of study are advised to take Latin 90 in place of the optional subject.

Second Year:

Biology 100, Chemistry 200, English 205, and the following courses in Pharmacy:

Pharmacy 201—Pharmaceutical Principles;
Pharmacy 202—Metrology and Pharmaceutical Calculations;
Pharmacy 203—Pharmacognosy and Elementary Materia Medica;

Pharmacy 204—Pharmaceutical History, Literature, and Latin.

Practical Training:

Before being recommended for a licence to practise Pharmacy, graduates must complete certain practical training prescribed by the Pharmaceutical Association of British Columbia. It is expected that students will be required to take a year's practical training between the First and Second Years of the course, and further training at the end of the Second and Third Years.

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 1st, 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.

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 should be taken in the Faculty of Arts and Science, but the minor may be taken in another faculty where approval is given by the Dean of the Faculty of Arts and Science and the head of the department in which the major is taken.

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.

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

5. Three typewritten copies of each thesis, together with an abstract approved by the department concerned, 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 1st.

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

7. The following minimum requirements apply to all departments. For the details of the special requirements of the various departments see pages 113-120, 124.

Prerequisites:

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

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

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

M.A. Courses:

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

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

The thesis shall count from three to six units.

There will be a general examination on the major field.

Examinations may be written or oral or both.

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

To fulfil the language requirement for the M.A. degree, a candidate who elects a language not taken in his undergraduate work to conform with Calendar regulations, will be required to have, as a basis, French 101 or German 90, 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 301 must be included.

Major: Bacteriology 401, 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 100, and six additional units in Botany and Zoology.

Major: Biology 100, Botany 200, and eight additional units, including Zoology 200.

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 300, 330 or 400, and 335.

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 500, 501, 502, 509, 510 to 582 inclusive; Psychology 202, 301. 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 500, 501, and 502 will be accepted for both the prerequisites and the course; or

(b) Six units chosen from Education 500, 501, 502, 509, 510 to 582 inclusive.

Major: Nine units chosen from Education 510 to 582 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 301, 401, or 500 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 442, 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 501;
- (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 502.

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.

Geography

Prerequisites:

Minor: Geography 101 or Geology 201 and 202, and six additional units in Agriculture, Anthropology, Biology, Economics, Geography, Geology, History, Sociology, or Zoology.

Major: Nine units in advanced courses in Geography.

M.A. Course:

Minor: Five units chosen in consultation with the Department of Geology and Geography, in Agriculture, Economics, Geology, History, or Sociology.

Major: Ten units in Geography, including four units for thesis.

Geology

Prerequisites:

Minor: Geology 201, 202, 302, and 303, and three or four units from the following: Geology 304, 305, 406, 407, 408, 410, 411, and 412.

Major: Geology 201, 202, 304, 407, 408, 409, 410, and one of Geology 406, 411, and 412, and Economics 205.

M.A. Course:

Minor: Six or more units from the following, not already taken as prerequisites: Geology 304, 305, 406, 407, 408, 409, 410, 411, 412, 520, 521, 522, 523, 524, 525, and 526, and Agronomy 415.

Major: Three units from Geology 520, 521, 522, 523, 524, 525, and 526, 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.

German

Prerequisites:

Minor: At least six units in Third and Fourth Year courses.

Major: At least twelve units in Third and Fourth Year courses.

M.A. Course:

Minor: Six units of credit in advanced courses not previously taken. An examination on the history of German literature will be required.

Major: At least nine units of credit in advanced courses not previously taken, which will include German 501 and a graduating essay to count for three to six units. Examinations on the history of German literature will be required.

History

Prerequisites:

Minor: Three courses (nine units) to be chosen from History 309 to 426 inclusive.

Major: Four courses (twelve units) to be chosen from History 309 to 426 inclusive.

M.A. Course:

Minor: Two courses (six units) to be chosen from History 309 to 426 inclusive, or the equivalent in reading courses.

Major: Two related courses (six units) to be chosen from History 309 to 426 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 533, or submit to an examination on a parallel reading course approved by the Department.

Mathematics

Prerequisites:

Minor: Mathematics 300 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 401.

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

Philosophy

Prerequisites:

Minor: Six units chosen from Philosophy 200, 201, 300, 301, 302, 303, 400, 401, 402, 500.

Major: Psychology 101 or its equivalent, and nine units chosen from Philosophy 200, 201, 300, 301, 302, 303, 400, 401, 402, 500. Students are recommended to take, in addition, Psychology 200.

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 200 and 300 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 300; 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 200, 201, 202, 300, 301, 302, 400, 401, 402, 500.

Major: Philosophy 100 and 303, and nine units chosen from Psychology 200, 201, 202, 300, 301, 302, 400, 401, 402, 500. Students are recommended to take as additional preparation Biology 100, Mathematics 200, and Physics 90 or 100.

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 530, 531, 532, 533, 582 for three units of Psychology.

Sociology

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 100, and six additional units in Botany and Zoology.

Major: Biology 100, Zoology 200, and eight additional units, including Botany 200.

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 3 of page 159.

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 500, 501, and 502 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 101 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 (or Latin and 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 100, and at least nine units of credit in any one of the following subjects: Chemistry, Mathematics, Physics, or Biology (including Botany and Zoology), in addition to Chemistry 100, Physics 100, and Biology 100. 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 100 and 101 and either 200 or 205, 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 100, 101, and 200.....	6
2. Language	6
3. Mathematics 100 and 200	6
4. Biology 100, Chemistry 100, and Physics 100	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 310, Chemistry 300, or 304 and 305, and Physics 230	12
8. Psychology 100 or 101	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 201 and 301. (Regulation 3, page 94, will be waived for this purpose.) They should also take Nursing 466 in their Teacher Training Course.

SOCIAL WORK

Courses Leading to the Degrees of B.S.W. and M.S.W.

The accepted education for the profession of social work consists of two full university years of graduate study including lectures, clinical practice work in the field, and research leading to the Master of Social Work degree. Students may, however, complete one-half of this program, qualifying for the B.S.W. degree, and may accept employment for a period of time before becoming candidates for the Master's degree.

Admission

Requirements for entrance to the Department of Social Work are as follows:

- (a) The Bachelor of Arts degree, or an equivalent, from a recognized university. An adequate background in the social and biological sciences is necessary.
- (b) Personal qualifications for the field of social work. Because maturity is an important factor, students are usually advised to wait until they are at least 21 years of age before beginning their professional education.

Application for entrance is to be made on forms obtainable from the Department and should be filed not later than July 1st for the following September.

Undergraduate students who are looking forward to entering the Department of Social Work should consult the Department each year about their courses. It is considered unwise to specialize in one field of study beyond the minimum requirements for major and minor (nine units and six units respectively) but Honours courses might be recommended in the case of special interest or ability.

Requirements for Degrees

THE DEGREE OF BACHELOR OF SOCIAL WORK

The B.S.W. degree will be granted to students who, having received the B.A. degree or an equivalent, satisfactorily complete one University session including twelve units of lectures and three units of field work. Candidates must successfully write a comprehensive examination on the year's work. Field work will consist of 450 hours of supervised work in a recognized social agency. Lectures are to be chosen from the following courses:

	Units
S.W. 500. History of Social Welfare	1½
S.W. 501 and 502. Social Case Work	3
S.W. 503. Child Welfare	1
S.W. 504. Medical Information	2
S.W. 507. Introduction to Group Work	1½
S.W. 508. Social Psychiatry	1
S.W. 511. Community Organization	1
S.W. 513. Public Welfare	1
S.W. 517. Principles and Practices of Group Work	1
S.W. 518. Development of Personality	1
S.W. 520. Social Research	1

Those who complete S.W. 499 (Sociology 330) in their Fourth Year need not register for S.W. 500. All students are to consult the Department before registering for courses.

THE DEGREE OF MASTER OF SOCIAL WORK

1. Candidates for the M.S.W. degree (except as noted below) must have the B.S.W. degree, and shall begin work leading toward the M.S.W. degree within five years after receiving the B.S.W. degree or they will be required to complete further preparatory work.

2. Candidates for the M.S.W. degree who obtained the Social Work Diploma (for which the B.A. is prerequisite) during the sessions 1943-44 and 1944-45 and who have satisfactory social work experience may proceed with the course for the M.S.W. degree within the five year period without the B.S.W. degree or further work.

3. Candidates for the M.S.W. degree who hold the B.A. degree and the Diploma for Social Work obtained prior to May, 1944, and who have had satisfactory social work experience, may proceed with the course for the M.S.W. degree without the B.S.W. degree but will be required to complete certain other work and to pass a comprehensive examination.

4. Students accepted as candidates for the M.S.W. degree will be required to complete one year of University study including a minimum of nine units of lectures, three units of field work, and a thesis, to count for three units. Students who proceed directly from the B.S.W. degree to the M.S.W. degree without experience in the field of social work will be expected to work for the four months during the summer either in paid or in voluntary employment in a social agency or will be required to complete extended field work during that period.

5. Candidates for the M.S.W. degree should file an application on a special form obtainable from the Registrar not later than September 1st.

6. Three copies of each thesis, together with an abstract, shall be submitted. The latest date for receiving theses in the Second Term will be the last day of lectures; and the corresponding date for the Autumn Congregation will be October 1st.

7. A candidate will be granted the M.S.W. degree after a demonstration of knowledge and of skill of performance in social work. An oral and a written comprehensive examination will provide the final evidence of the competence of the candidate.

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 three years at the University of British Columbia and selecting their courses properly. The following subjects should be taken and such others as may be necessary to meet the requirements of the particular medical school selected.

First Year:

English 100 and 101, Modern Language, Mathematics 100, Chemistry 100, Biology 100. 18 units.

Second Year:

English 200, Physics 100, Chemistry 200, Zoology 200; and an elective. 15 units.

Third Year:

Chemistry 300, Physics 220, Zoology 300, and two electives. 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. 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 106, and in reference to admission to First Year Applied Science, page 93, 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

153 [3]. *Bacteriology in Relation to Health and Disease*.—A special course for Combined Course Nursing students only, consisting of lectures, demonstrations, and laboratory work.

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

References: Henrici, *Biology of Bacteria*, latest edition, Heath; Bigger, *Handbook of Bacteriology*, latest edition, Williams and Wilkins.

Prerequisites: Chemistry 100 and Biology 100, the latter of which may be taken concurrently.

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.

NOTE. See regulations as to laboratory coats under Bacteriology 201 below.

201 [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 100 and Biology 100, the latter of which may be taken concurrently.

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

Lectures:

Group A, 9.30-10.30, Tuesday;

Group B, 9.30-10.30, Thursday.

Laboratory:

Section 1, 10.30-12.30, Tuesday; 10.30-12.30, Thursday;

Section 2, 1.30- 3.30, Tuesday; 1.30- 3.30, Thursday;

Section 3, 8.30-10.30, Wednesday; 8.30-10.30, Saturday;

Section 4, 10.30-12.30, Wednesday; 10.30-12.30, Saturday.

NOTE. Section 4 may or may not be given, depending on registration.

NOTE. Students must provide themselves with white laboratory coats, ready for use at the *first* laboratory.

301 [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, Macmillan.

Prerequisite: Bacteriology 201.

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

Lectures: 9.30-10.30, Friday.

Laboratory: 3.30-5.30, Tuesday and Thursday.

302 [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 201 with at least Second Class standing, and Bacteriology 301, with which this course may be taken concurrently. 3 units.

304 [4a]. *Dairy Bacteriology*.—(This course is the same as Dairying 304, and is given by the Department of Dairying.)

305 [4b]. *Dairy Bacteriology*.—(This course is the same as Dairying 305, and is given by the Department of Dairying.)

312 [6]. *Soil Bacteriology*.—(This course is the same as Agronomy 312, and is given by the Department of Agronomy.)

401 [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 201 and 301, 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.

402 [9]. *Microbiological Physiology*.—Lectures, laboratory work, and demonstrations on the physiology of bacteria, yeasts, and molds, including growth, nutrition, respiration, and other aspects of metabolism. Application of microbial physiology to problems in medicine, sanitation, and industry.

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

Prerequisites: Bacteriology 201 and 301 with at least Second Class standing in both courses; also Bacteriology 401, 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.

403 [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 201 and 301 with at least Second Class standing in both courses; also Bacteriology 401, 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.

404 [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 201 and 301; also one of Bacteriology 401, 402, or 403, with which this course may run concurrently.

407 [7]. *Advanced Dairy Bacteriology*.—(This course is the same as Dairying 407, and is given by the Department of Dairying.)

Department of Biology and Botany

Biology

100 [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 and Botany. For Zoology see note on page 216.

A list of reference books is supplied.

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

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

Section B, 10.30-11.30, Monday and Wednesday;

Section C, 10.30-11.30, Monday and Wednesday.

Laboratory: Section 1, 1.30-3.30, Tuesday;
 Section 2, 3.30-5.30, Tuesday;
 Section 3, 1.30-3.30, Thursday;
 Section 4, 3.30-5.30, Thursday;
 Section 5, 1.30-3.30, Friday;
 Section 6, 3.30-5.30, Friday.

300 [2a]. *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 100.

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.

301 [2b]. *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 300.

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.

302 [2c]. *Problems in Genetics*.—An introduction to genetical methods and investigations. Students interested in plant breeding may elect Agronomy 500 as an equivalent of this course.

Prerequisites: Biology 300 and 301.

Three hours a week. 3 units.

303 [2d]. *Seminar in Genetics*.—A review of advanced phases and the more recent developments in genetics.

Prerequisites: Biology 300 and 301.

Three hours a week. 3 units.

310 [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 100.

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

Lectures: 11.30-12.30, Monday and Wednesday.

Laboratory: 3.30-5.30, Thursday.

400 [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.

401 [5]. *Basic Physiology*.—This course is designed primarily for students in Home Economics and in the Teachers' 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 100, Chemistry 100. 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

200 [1a]. *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. Partial credit (2 units) toward Botany 200 may be obtained through the Evening Course.

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

Prerequisite: Biology 100.

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

Lectures: 10.30-11.30, Tuesday and Thursday.

Laboratory: 3.30-5.30, Monday.

300 [5a]. *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 200.

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.

301 [5b]. *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 200.

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.

302 [5c]. *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 300.

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.

310 [2a]. *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 200.

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

311 [2b]. *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*, Vols. I, II, Macmillan; Tilden, *The Algae and Their Life Relations*, University of Minnesota.

Prerequisite: Botany 200.

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

315 [6e]. *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 200.

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.

316 [6c]. *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, *Introduction to Plant Pathology*, McGraw-Hill.

Prerequisite: Botany 200.

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.

317 [6b]. *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.

320 [7a]. *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; Hardy, *The Geography of Plants*, Oxford.

Prerequisite: Botany 200.

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.

330 [3a]. *Plant Physiology*.—An introduction to the physiological processes of plants. A general survey is made of photosynthesis, transpiration, absorption, enzymes, respiration, plant hormones, and growth. This course is prerequisite for Botany 331, 332, and 333.

Text-book: Meyer and Anderson, *Plant Physiology*, Van Nostrand.

Prerequisite: Botany 100.

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.

331 [3b]. 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 441.)

Prerequisite: Botany 300.

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

2 units.

332 [3c]. An advanced course to supplement 330 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 442.)

Prerequisite: Botany 330.

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

333. *Problems in Plant Physiology*.—Biophysical and biochemical aspects of plant life. Recent advances in the subject are discussed. The course is designed primarily as an experimental approach to the subject. The student is expected to select some problem in plant physiology for original investigation.

Reference: Miller, *Plant Physiology*, McGraw-Hill.

Prerequisites: Botany 330, Chemistry 300, Physics 100.

Two lectures and four hours laboratory a week. Second Term.
2-3 units.

Lectures: 9.30-10.30, Tuesday and Thursday.

Laboratory: 1.30-3.30, Monday and Wednesday.

340 [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 200.

Seven hours a week. Second Term. 2 units.

Lectures: 8.30-9.30, Tuesday.

Laboratory: 1.30-4.30, Monday and Wednesday.

411 [6f]. *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 316.

Lectures: 11.30-12.30, Friday. 1 unit.

415 [6d]. *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 316.

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

Lectures: 11.30-12.30, Monday.

Laboratory: 8.30-12.30, Friday.

420 [7b]. A seminar and problem course in more advanced forest ecology.

Prerequisite: Botany 320.

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 100 is a prerequisite for such students. This course may be substituted for the lecture part of Botany 200; 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

90 [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 200, or any subsequent Chemistry course.

Reference: Deming, *Fundamental Chemistry*, Wiley.

Two lectures and one laboratory period a week. 3 units.

(Not given in 1946-47.)

100 [1]. *General Chemistry*.—A study of inorganic chemistry against a background of theory. Chemical arithmetic, the Periodic Table, and the fundamental theories will be stressed. Students must reach the required standard in both lecture and laboratory work.

Text-book: Foster and Alyea, *An Introduction to General Chemistry*, Van Nostrand. 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.

NOTE. Students who have not taken High School Chemistry A will be required to take additional class work.

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;
Section 5, 8.30- 9.30, Tuesday, Thursday, Saturday.

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

200 [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.

References: Noyes and Swift, *Qualitative Analysis*, Macmillan; Engelder, *Calculations of Qualitative Analysis*, Wiley; Reedy, *Theoretical Qualitative Analysis*, McGraw-Hill.

Prerequisite: Chemistry 100.

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, Furman, and Flagg, *A Short Course in Quantitative Analysis*, Van Nostrand, or Pierce and Haenisch, *Quantitative Analysis*, Wiley.

Prerequisite: Chemistry 100.

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.

225 [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.

Prerequisite: Chemistry 100.

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.

301 [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 100, with special emphasis upon topics in the high school curriculum. The laboratory work will include experiments suitable for high school demonstration purposes.

Prerequisites: Chemistry 100 and 200.

NOTE. Students may substitute Chemistry 300 and 304 for this course.

Text-book: Partington, *Inorganic Chemistry*, Macmillan.

Two lectures and one laboratory period a week. 3 units

(Not given in 1946-47.)

300 [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 300 will be given only to those students taking Chemistry 200, or those who have had the equivalent of Chemistry 200.

References: Conant, *The Chemistry of Organic Compounds*, Macmillan; Desha, *Organic Chemistry*, McGraw-Hill; Wertheim, *Text-book of Organic Chemistry*, Wertheim; 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.

304 [4a]. *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 200 (except for students taking Honours in Physics) and Mathematics 200. Honours students majoring in Chemistry should take Mathematics 300 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.

305 [4b]. This course is the same as Chemistry 304 with the omission of the laboratory, and is open only to students not taking Honours in Chemistry. 2 units.

310 [5]. *Advanced Quantitative and Qualitative Analysis*.

(a) *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 200.

Text-book: Vogel, *Quantitative Analysis*, Longmans Green.

(b) *Qualitative Analysis*.—The work of this course will include the detection and separation of the less common metals, particularly those that are important industrially.

Text-book: Vogel, *Qualitative Analysis*, Longmans Green.

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

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.

325 [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 225.

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.

350 [6]. *Introduction to Chemical Engineering*.—As in Applied Science.

407 [7]. *Physical Chemistry*.—This course is a continuation of Chemistry 304 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 200, 300, and 304; Mathematics 300, 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.

409 [9a]. *Advanced Organic Chemistry*.—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.

410 [9b]. 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 200 and 300.

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.

411 [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.

NOTE. This course is open only to students taking Chemistry 407, 409, and 410.

Two hours a week. Second Term.

1 unit.

419. [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 300 and 409. Chemistry 409 and 419 may, on permission, be taken conjointly.

Two lectures a week. Second Term. 1 unit.

One afternoon laboratory *may* be offered. 1 unit.

458 [8]. *Electrochemistry*.—As in Applied Science.

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

PRIMARILY FOR GRADUATE STUDENTS

511 [11]. *Physical Organic Chemistry*.—Stereochemical theories will be discussed in greater detail than in Chemistry 409 and 410, 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 407, 409, and 410.

One hour a week. 1 unit.

(Not given in 1946-47.)

512 [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 300 and 304.

One hour a week. 1 unit.

517 [17]. *Chemical Thermodynamics*.—Study of first, second, and third laws; derivation of fundamental equations and their application to the gas laws, chemical equilibrium, theory of solutions, electrochemistry, and capillarity.

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

Prerequisite: Chemistry 407.

One lecture a week. 1 unit.

(Given in 1947-48 and alternate years.)

518 [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 200 and 304.

Two lectures a week. Second term. 1 unit.

Lectures: 8.30-9.30, Tuesday and Thursday.

(Given in 1946-47 and alternate years.)

520 [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.

521 [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 1947-48 and alternate years.)

522 [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: Brunauer, *The Adsorption of Gases and Vapours*, Princeton; McBain, *The Sorption of Gases by Solids*, Routledge; Adam, *The Physics and Chemistry of Surfaces*, Oxford; Rideal, *Surface Chemistry*, Cambridge.

Prerequisite: Chemistry 407.

One lecture a week. 1 unit.

(Given in 1946-47 and alternate years.)

530 [30]. *Research Conference*.—This course is required of all graduate students. Students will be required to present a paper on an approved topic.

One hour a week. 1 unit.

Department of Classics

Greek

Greek 101 is open to students who have presented Greek for University Entrance; Greek 202 is open to those who have passed in Greek 90, Greek 101, or Senior Matriculation Greek.

Of the courses numbered 303, 305, 306, and 407 only two are normally available in any one year.

90. *Beginners' Greek*.—The elements of Attic Greek.

Text-book: Chase and Phillips, *A New Introduction to Greek*, Harvard.

Four hours a week, to be arranged.

3 units.

101 [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.

202 [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 Euripides. 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; Euripides, *Medea*, Bayfield, Macmillan.

Four hours a week, to be arranged.

3 units.

THIRD AND FOURTH YEARS

The following courses are open to students who have completed Greek 202.

303 [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.

304 [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.

306 [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.

310 [8a]. *Composition*.—Obligatory for Honours students in the Third Year.

One hour a week.

1 unit.

The following three courses do not require a knowledge of the Greek language. Greek 314 and 315 may be taken by Second Year students.

314 [14a]. *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.

Text-book: Fowler and Wheeler, *A Handbook of Greek Archaeology*, American Book Company.

One hour a week.

1 unit.

315 [14b]. *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.

2 units.

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

330 [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.

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 1947-48 and alternate years.)

407 [7]. *Introduction to Greek Philosophy.*—A survey of the beginnings of Greek philosophic inquiry; the reading of selections from two of the major works of Plato and Aristotle.

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

Three hours a week.

3 units.

410 [8b]. *Composition.*—Obligatory for Honours students in the Fourth Year.

One hour a week.

1 unit.

PRIMARILY FOR GRADUATE STUDENTS

521 [21]. Aristotle, *Politica*, Immisch, Teubner.

Latin

Latin 101 is open to students who have presented Latin for University Entrance or have taken the beginners' course in the University; Latin 202 is open to those who have passed in Latin 101 or in Senior Matriculation Latin.

90. *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 authors 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.

101 [1]. *Introduction to Latin Literature*.—The course opens with selections from prose authors; 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: Pilsbury, *Latin Prose Composition*, Oxford; Robertson and Robertson, *The Story of Greece and Rome*, chap. XXXIII-LIV, Dent.

Texts: *A Book of Latin Prose Selections*, Neville, Dale, Breslove, and Tracy, Macmillan; *A Book of Latin Poetry*, Neville, Jolliffe, Dale, and Breslove, Macmillan.

Three hours a week.

3 units.

Section 1: 9.30-10.30, Monday, Wednesday, and Friday;

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

202 [2]. *Prose and Poetry of the Golden Age*.—Reading in some of the prose 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.

THIRD AND FOURTH 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 303, 304, 405, and 406.

303 [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; Terence, *Heautontimorumenos*.

Three hours a week.

3 units.

8.30-9.30, Tuesday, Thursday, and Saturday.

(Given in 1946-47 and alternate years.)

304 [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 1947-48 and alternate years.)

310 [8a]. *Composition*.—Obligatory for Honours students in the Third Year.

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, Thursday.

329 [7]. *Roman History*—A survey of the growth of Rome and the development of its political institutions. Essays on selected topics will be assigned.

This course does not require a knowledge of Latin.

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.

Three hours a week.

3 units.

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

(Given in 1946-47 and alternate years.)

405 [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.

1.30-2.30, Monday, Wednesday, and Friday.

(Given in 1946-47 and alternate years.)

406 [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 1947-48 and alternate years.)

410 [8b]. *Composition*. — Obligatory for Honours students in the Fourth Year.

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.

509 [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

521 [21]. Cicero, *Select Letters*, 2 vols., How, Oxford.

Three hours a week.

3 units.

523 [23]. *Roman Comedy*.

3 units.

Department of Commerce

The courses in this department, with the exception of Commerce 191 and 371, 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.

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

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

3 units.

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

251 [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 251 without the permission of the instructor. In order to qualify for examination the student is required to submit 75 per cent. of the written assignments.

Commerce 251 is a prerequisite to all other courses in Commerce, but may be taken concurrently with Commerce 261.

Text-book: Noble, *Accounting Principles*.

Four hours a week. Mr. Taylor, Mr. Bell.

3 units.

Lectures: 1.30-2.30, Tuesday and Thursday.

Laboratory: 2.30-4.30, Wednesday.

261 [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. Stark, Mr. Bell.

3 units.

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

356 [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: Noble, Karrenbrock, and Simons, *Advanced Accounting*.

Assigned readings.

Prerequisite: Commerce 251.

Three hours a week. Mr. Field.

3 units.

Lectures: 1.30-3.30, Monday; 10.30-11.30, Saturday.

371 [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.

381 [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. To qualify for the final examination a student is required to submit 75 per cent. of the written assignments and to take in 75 per cent. of the assigned factory visits.

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: 3.30-4.30, Monday, Tuesday, and Thursday.

Field trips: Wednesday and Friday afternoons.

391 [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.

Assigned readings.

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

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

457 [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 251, 261, 381.

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

466 [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 a major report.

Text-book: To be announced.

Prerequisite: Commerce 261.

Assigned readings, and *Commercial Intelligence Journal*.

Three hours a week. Mr. Morrow.

3 units.

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

467 [14]. *Advertising*.—The general field of advertising in its relation to the distribution and merchandising of commodities; in particular, the principles and techniques in printed and aural advertising, the organization of advertising departments, the functions of advertising agencies, and the planning of advertising campaigns. The course entails field work.

Text-book: To be announced.

Prerequisite: Commerce 261.

Three hours a week. Mr. Bell and visiting lecturers. 3 units.

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

Department of Economics, Political Science, and Sociology

NOTE. Economics 200 is the prerequisite for all other courses in this department except Economics 100, Economics 205, and Sociology 200, but may be taken concurrently with Government 300.

Agricultural Economics 301, 400, 500, and 501 and Commerce 191 may be counted as courses in Economics.

Economics

100 [2]. *Economic History*.—A survey of factors of major social and economic significance in the rise and development of Western civilization, from early times to the present day. Special attention will be given to major economic changes in Europe and the North American continent during the last two centuries.

Text-book: Heaton, *Economic History of Europe*, Harpers.

References: Heaton, *History of Trade and Commerce with Special Reference to Canada*, revised edition, Nelson; Currie, *Canadian Economic Development*, Nelson; Faulkner, *American Economic History*.

Three hours a week.

3 units.

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

200 [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: Ise, *Economics*, Harpers.

References: 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;

Section 3, 8.30- 9.30, Tuesday, Thursday, and Saturday.

205 [10]. *Commercial Geography*.—(This is the same as Commerce 191.)

300 [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.

305 [7]. *Business Finance*.—(This is the same as Commerce 371.)

310 [6]. *International Trade*.—The mechanism of international trade; the balance of payments; equilibrium; transfers; investment abroad; price level changes; purchasing power parity; control of exchange rates; the gold standard; gold versus paper; comparative cost; trade policy; free trade; duties on imports; preferences; quotas; general and particular arguments; international cartels and monopolies; trade treaties and international agreements.

References: Haberler, *The Theory of International Trade*, Hodge; Taussig, *International Trade*, Macmillan; Viner, *Studies in the Theory of International Trade*, Allen and Unwin.

Three hours a week. Mr. Drummond.

3 units.

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

320 [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.

325 [3]. *Labour Problems and Social Reform*.—A study of the major labour problems arising out of the factory system and large-scale enterprise. Special attention will be given to the history of trade unions in England, the United States, and Canada, and to recent developments in labour relations, with regard to structure and functions of trade unions, employer policies and associations, collective bargaining and industrial conflict, labour legislation, labour and political action.

Text-book: Watkins and Dodd, *Labor Problems*, Crowell.

References: To be assigned.

Three hours a week. 3 units.

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

330 [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.

(May not be given in 1946-47.)

335 [12]. *Statistics 1*.—Analysis of frequency distributions; the Normal Frequency curve; study of bivariate and multivariate; study of dynamic variability; forecasting.

Text-book: Smith and Duncan, *Elementary Statistics and Applications*, McGraw-Hill.

One lecture and two hours of laboratory work a week. 3 units.
Lectures: 9.30-10.30, Monday or Wednesday.

Laboratory (Statistics Laboratory.)

Sections to be arranged: 1.30-3.30, Monday, Wednesday, Thursday, or Friday.

400 [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; Homan, *Contemporary Economic Thought*, 1928, Harpers; Hicks, *The Theory of Wages*, 1935, Macmillan; Kierstead, *Essentials of Price Theory*, University of Toronto; Meyers, *Elements of Modern Economics*, Prentice-Hall.

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

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

(Given in 1946-47 and alternate years.)

405 [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. 3 units.

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

(May not be given in 1946-47.)

435 [13]. *Statistics 2*.—General theory of frequency curves; elementary theory of random sampling; advanced sampling problems; multivariate analysis.

Text-books: Smith and Duncan, *Elementary Statistics and Applications*, McGraw-Hill; Smith and Duncan, *Sampling Statistics and Applications*, McGraw-Hill.

References: Fisher, *Statistical Methods for Research Workers*, Oliver and Boyd; Ezekiel, *Methods of Correlation Analysis*, Wiley.

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

Two lecture periods: 9.30-10.30, Monday or Wednesday, and Friday.

Laboratory (Statistics Laboratory): 1.30-3.30, Tuesday.

Statistics 2 is open to students who have taken at least Second Class in Statistics 1.

440 [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 (301, 400, 500, 501) open to students in the Faculty of Arts and Science see page 297 under the Faculty of Agriculture.

Forest Economics

481 [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 481.)

Three hours a week.

3 units.

Government

300 [1]. *Constitutional Government*.—This course deals with the nature, origin, and aims of the State; and with the organization of government in the United Kingdom and in the United States of America.

Text-books: Ogg, *English Government and Politics*, Macmillan; Ogg and Ray, *Introduction to American Government*, Appleton-Century.

Three hours a week. Mr. Angus.

3 units.

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

325 [3]. *Imperial Problems*.—A course on problems of government within the British Empire.

Readings to be assigned.

Three hours a week.

3 units.

(Not given in 1946-47.)

400 [5]. *The Government of Canada*.—The development of the Canadian federal system; the crisis in Dominion-Provincial relations; Canadian government in wartime; adaptation of Canadian institutions for the tasks of reconstruction.

Text-book: Clokie, *Canadian Government and Politics*, Longmans.

Reference: *The Report of the Royal Commission on Dominion-Provincial Relations*, King's Printer, Ottawa.

Three hours a week. Mr. Angus.

3 units.

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

425 [4]. *Problems of the Pacific*.—A course on the problems of the Pacific Area discussed at the conferences of the Institute of Pacific Relations. Each problem will be related to its economic and political background.

Readings to be assigned.

Three hours a week.

3 units.

(Given in 1946-47 and alternate years.)

430 [7]. *Reconstruction Problems*.—Relief and reconstruction in Europe and Asia; reconversion and re-employment in Canada; the maintenance of full employment; the restoration of multilateral clearance and multilateral trade; the removal of trade barriers other than tariffs; cartels; fair competition; the economic future of the enemy countries; accommodation between state trading and free enterprise.

Three hours a week. Mr. Angus.

3 units.

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

(Not given in 1946-47.)

435 [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: Oppenheim, *International Law*; Brierly, *The Law of Nations*; MacKenzie and Lang, *Canada and the Law of Nations*.

Three hours a week. Mr. MacKenzie.

3 units.

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

Sociology

200 [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-book: Pendell, *Society Under Analysis*, Cattell.

Three hours a week. Mr. Topping.

3 units.

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

300 [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; 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.

325 [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 not be given in 1946-47.)

330 [6]. *Introduction to Social Work*.—(This course is the same as Social Work 499.)

400 [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 inter-relations 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; Burgess and Cottrell, *Predicting Success or Failure in Marriage*, Prentice-Hall.

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

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

425 [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; Gist and Halbert, *Urban Society*, 2nd edition, Crowell.

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

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

(Given in 1946-47 and alternate years.)

430 [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, Monday, Wednesday, and Friday.

(Given in 1947-48 and alternate years.)

435 [5]. *Sociological Theory*.—The central trend in thinking of sociologists will be traced with special emphasis on recent developments in sociological theory.

Readings to be assigned.

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

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

(Not given in 1946-47.)

445. *Honours Seminar*.—Third and Fourth Year Honours and M.A. students in Sociology are required to take this course.

Two hours a week, to be arranged.

Department of Education

NOTES .

1. Undergraduates who intend to proceed to the Teacher Training Course are required to take Psychology 101, and their attention is called to Philosophy 100, 401, Psychology 202, 301, Sociology 200.

2. Six units chosen from Education 509, 510 to 582 may be taken for undergraduate credit but only by students who have completed their normal school training.

3. The Teacher Training Course consists of Education 500 to 505 inclusive.

4. Only a limited number of courses from Education 510 to 582 will be offered in any one year.

COURSES

500 [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.

501 [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 101.

502 [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; the co-curriculum; accrediting; correspondence courses; the school law of British Columbia.

503 [13]. *Tests and Measurements*.

504 [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.

505 [15]. *Seminar*.—A special study, with an essay or report, in one of the four fields, Education 500, 501, 502, 503.

One hour a week.

509 [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.

510 [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.

511 [26]. *Administration of the Elementary School*.—The organization of the elementary school; the work of the principal; participation of staff in administration.

1½ units.

512 [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.

513 [36]. *Supervision*.—A study of techniques for the improvement of instruction. Responsibilities of inspectors, supervisors, and principals.

1½ units.

520 [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.

521 [22]. *Philosophy of Education*.—A study of current trends in educational philosophy; the social implications of contemporary educational theories.

3 units.

522 [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.

523 [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.

530 [21]. *Advanced Educational Psychology*.—A survey of recent psychological theories and a critical analysis of their implications for education.

3 units.

531 [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.

532 [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.

533 [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.

534 [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.

535 [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.

550 [35]. *Guidance*.—The objectives of guidance; gathering and using information concerning students; counselling with students; articulation of the different forms of guidance; contributions of teachers, principal, and specialists in guidance; analysis of guidance programmes in secondary schools.

1½ units.

560 [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.

561 [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.

570 [40]. *Educational Sociology*.—This course will include such topics as the following: Individual and Social Aims, The Community and Education, Provincial and Federal Aid to Education, Education and Internationalism, Social Problems of Administration and Control, the Various 'isms (Idealism, Realism, Pragmatism) and Education, Curriculum Problems, Moral Education, Education and National Unity, Pending Educational Developments in Canada. Special emphasis will also be placed on problems arising out of rehabilitation and reconstruction.

References: Roucek and associates, *Educational Sociology*, Crowell; various publications by federal government committees on Social Security and on Reconstruction and Re-establishment.

3 units.

580 [23]. *Problems in Education*.—An investigation and report of an educational problem.

3 units.

581 [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 582.

1½ units.

582 [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.

Department of English

FIRST YEAR

All students of the First Year are required to take Courses 100, 101.

100 [1a]. *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 1946-47: Larsen and Macdonald, *A Century of Short Stories*; Euripides, *Bacchae*, in Gilbert Murray's paraphrase, Allen and Unwin; Shakespeare, *Julius Caesar*; Sheridan, *The School for Scandal*, Everyman; Ibsen, *A Doll's House*, Everyman; Dilworth, *Twentieth Century Verse*, Oxford.

Two hours a week.

101 [1b]. *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:

Sections A, 8.30-9.30, Monday, Wednesday, Friday, and 2.30-3.30, Thursday;

Sections B, 11.30-12.30, Monday, Wednesday, Friday, and 2.30-3.30, Thursday;

Sections C, 8.30-9.30, Tuesday, Thursday, Saturday, and 2.30-3.30, Tuesday;

Other sections to be arranged.

SECOND YEAR

200 [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: To be announced.

Three hours a week.

3 units.

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

205 [3 and 4]. *English Composition for Students in Commerce and Agriculture*.—A course in composition especially designed to

meet the needs of students in Commerce and 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-books: To be announced.

Three hours a week. Mr. Read and Mr. Nicol. 3 units.

For courses in English in Applied Science see page 264.

THIRD AND FOURTH YEARS

401. *Literary Criticism and Advanced Composition*.—A course devoted to the study of critical principles and to practice in writing. Enrolment in this course will be limited to twenty students, who must make special application to the Head of the Department.

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

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

402. *Classics of European Literature*.—A course devoted to the study of some great books representative of various strains in Western civilization.

(Not given in 1946-47.)

408 [8]. *Studies in Elizabethan Literature*.—Various literary types will be examined: the lyric, the sonnet, the pastoral, the prose romance, realistic prose and verse, literary criticism, the essay. The work of Spenser, Jonson, and Donne will receive special attention.

Text: Hebel and Hudson, *Poetry of the English Renaissance*, Dodd Mead.

Three hours a week. Miss Mawdsley. 3 units.

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

(Not given in 1946-47.)

409; 410 [9]. *Shakspere*.—These courses may be taken for credit in two successive years. In 1946-47, 409 will be given as follows:

i. A detailed study of the text of *A Midsummer Night's Dream*; *1 Henry IV*; *Othello*; *Antony and Cleopatra*; *Coriolanus*.

ii. Lectures on Shakspere'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 *New Cambridge Shakespeare*, ed. Neilson and Hill, Houghton Mifflin, or the *Oxford Shakespeare*, ed. Craig.

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

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

410 [9a]. (Given in 1947-48 and alternate years.)

411 [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 *New 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.

420. *The History of English Drama Since 1660*.—A survey of the chief developments of dramatic art from the Restoration to the present day.

(Not given in 1946-47.)

421. *Theatre*.—This course deals with both the theory and the practice of the modern theatre: (1) historical backgrounds; (2) acting—analysis of plays, fundamentals of acting, participation in a play; (3) Speech A—fundamentals of voice production; (4) Speech B—interpretation; (5) directing; (6) stagecrafts.

Three hours a week and laboratory practice. Miss Somers et Mrs. Graham.

3 units.

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

425. *The Age of Milton*.—This is a survey course extending from Donne to the death of Milton. It offers a general examination of 17th century thought and art, and relates this to the literature of the age. Among the authors to be read are Jonson and the Cavalier poets, Donne and the Metaphysicals, Bacon, Burton, Browne, Milton, and the poets of the transition to neo-classicism. The King James Bible is included for study. Particular attention will be given to Milton's prose and poetry.

Text: Coffin and Witherspoon, *Seventeenth Century Prose and Poetry*, Harcourt, Brace.

Three hours a week. Mr. Daniells.

3 units.

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

426 [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. Read. 3 units.

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

427 [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.

428. *English Literature of the American Continent*.—A study of the major authors and developments in literature produced in the United States and Canada.

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

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

430 [16]. *Romantic Poetry, 1780-1830*.—Studies in the beginnings and progress of Romanticism, based chiefly on the work of Wordsworth, Coleridge, Byron, Keats, Shelley, Scott.

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

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

Three hours a week. 3 units.

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

431 [17]. *Victorian Poetry*.—This course is chiefly concerned 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.

Text: Brown, *Victorian Poetry*, Ronald. The list of poems for study will include supplementary readings from the collected works of the three major poets named above.

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

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

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

432 [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.

433 [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; novels to be assigned.

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

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

434 [25a]. *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.

435 [25b]. *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.

440 [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.

442 [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.

443 [22]. *The History of the English Language*.—The study of the vocabulary, syntax, accent, and phonology of the English language from the historical point of view. A brief introduction to philological method; the ancestry of English; the language

in the Old and Middle English periods, with illustrative readings; the development of modern English.

Prerequisite: English 442.

Two hours a week. Mrs. Blakey Smith.

2 units.

Lectures: 11.30-12.30, Monday and Friday.

SEMINARS

444 [24a]. *Bibliography and General Method*.—Third Year Honours students in English are required to take this course.

One hour a week. Mrs. Blakey Smith.

1 unit.

Lectures: 11.30-12.30, Wednesday.

445 [24b]. In this class Honours students will get practice in some of the simpler methods of criticism and investigation. The subject for 1946-47 will be the criticism of poetry. All Honours students, of both *Third and Fourth Years*, are required to take this course. Credit is given at the end of the Fourth Year.

Two hours a week. Mr. Larsen.

2 units.

Lectures: 3.30-5.30, Friday.

TEACHER TRAINING COURSE

526 [26]. *Methods in High School English*.—This course does not carry undergraduate credit.

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

Department of French

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 French 300 and 400; and a student taking a B.Com. degree may be admitted to French 301 in lieu of French 300. Students from other universities who have already taken the work of French 300 and 400 may be given special permission by the Head of the Department to substitute other courses.

101 [1]. Texts: *Types of the French Short Story*, Ronald; Beaumarchais, *Le Barbier de Séville*, Larousse; Barton and Sirich, *New 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.

202 [2]. Texts: Balzac, *Le Père Goriot*, Larousse; *Anatole France*, Nelson. Independent reading to include Balzac, *Eugénie Grandet*, and the author listed under *Summer Reading*.

Composition in French based on the above readings, and from Barton and Sirich, *New French Review Grammar and Composition*, Crofts.

Prerequisite: French 101 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.

300 [3a]. *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 202 is a prerequisite. Students who cannot write French with some facility are advised not to attempt French 300.

Students who intend to take French throughout the four years or who wish to teach this subject should take also French 302.

Three hours a week.

3 units.

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

301 [3b]. *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*; or Lamartine, *Jocelyn*. 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.

302 [3c]. *French Practice.*—Composition and phonetics, training in writing, conversation, and pronunciation. This course should be taken by all who elect French as a Third Year subject. It may not be substituted for French 300.

Text-books: Wilson, *Modern French Prose*, Nelson; Bond, *The Sounds of French*, Heath; Bascan, *Manuel pratique de prononciation et de lecture*, Dent.

Three hours a week.

3 units.

400 [4a]. *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, *Fantasio*, *On ne badine pas avec l'amour*, *Il ne faut jurer de rien*, Lorenzaccio, Larousse. Independent readings include the plays of Marivaux, Voltaire, Sedaine, and Banville listed under *Summer Reading*.

References: Stewart and Tilley, *The Romantic Movement in French Literature*, Cambridge; Roger Picard, *Le Romantisme social*, Brentano.

Prerequisites: French 300 and 302.

Three hours a week.

3 units.

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

401 [4b]. *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 300 and 301.

Three hours a week.

3 units.

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

402 [4c]. 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 400, but not in place of it.

Prerequisite: French 302.

Three hours a week.

3 units.

COURSES FOR GRADUATE STUDENTS

501 [5b]. *The middle Ages and XVIIth Century*.—Texts: *Aucassin et Nicolette*, Classiques français du moyen-âge, Champion; selected readings from Montaigne, Rabelais, and the poets of the Pléiade in *Anthologie littéraire de la Renaissance française*, Holt.

3 units.

502 [5c]. *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.

503 [5d]. *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; Valéry Larbaud, *Amants, heureux*
amants, Gallimard. Further readings to be specified. 3 units.

Summer Reading

Upon entering the courses for the years stated, the student must satisfy the instructor that he has read the books mentioned below.

Second Year:

1. Louis Hémon, *Maria Chapdelaine*, Fayard.

Third Year:

1. Chateaubriand, *Atala*, Larousse.
2. Madame de Staël, *De l'Allemagne*, Larousse*.
3. Rivarol, *Discours sur l'universalité de la langue française*, Larousse.

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.

Department of Geology and Geography

Geology

201 [1a and 1c]. *General Geology*.—This course serves as an introduction to the science of geology, and includes the following subdivisions:

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 January 31. Mr. Watson.

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

Prerequisite: See under Geology 202.

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

Lectures: 9.30-10.30, Monday and Wednesday.

202 [1b and 1d]. *Laboratory Exercises*.—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. Watson, Mr. Warren, and assistants.

Laboratory Exercises in Historical Geology, including the study of index fossils representative of the periods of geological time, and geological maps.

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

Prerequisite for Geology 201 and 202: University Entrance Chemistry or Physics, or Chemistry 90 or 100, or Physics 90 or 100, taken either before or concurrently.

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

Laboratory: 1.30-3.30, Tuesday or Thursday.

Students will be required to make passing marks in the combined written and the combined practical divisions of the course, and may be required to pass in each of the laboratory divisions. 3 units.

302 [2a]. *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 201 and 202 must, and Chemistry 100 and Physics 100 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.

303 [2b]. *Descriptive and Determinative Mineralogy*.—This course supplements 302 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 302, Chemistry 100, and Physics 100 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 302 or 303 separately will be required to pass in both the lecture and the laboratory divisions. Those who take both 302 and 303 may be required to pass in each.

304 [4]. *Structural Geology*.—A study of primary and secondary structures in rocks. The course includes practice in methods for solving various structural problems.

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

Prerequisites: Geology 201 and 202.

Two hours a week. Mr. Gunning.

2 units.

Lectures: 11.30-12.30, Friday, and one more hour.

305 [5]. *Theoretical and Historical Geology*.—A brief study of the development of the geological sciences, theories employed in geological interpretations, and the historical geology of North America.

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; Schuchert and Dunbar, *Textbook of Geology, Part II, Historical Geology*, 4th edition, 1941, Wiley.

Prerequisites: Geology 201 and 202.

Two hours a week. Mr. Williams.

2 units.

Lectures: 11.30-12.30, Tuesday and Thursday.

NOTE. Geology 305 may be counted as a course in Geography.

308 [8, part]. *Fuels and Structural Materials*.—A study of the origin and occurrence of coal, petroleum, and structural materials, with special reference to Canadian deposits.

Text-book: Bateman, *Economic Mineral Deposits*, 1942, Wiley.

Prerequisites: Geology 201, 202, 302, and 303.

Three hours a week. First Term. Mr. Williams.

1½ units.

Lectures: Hours to be arranged.

406 [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: Shimer and Shrock, *Index Fossils of North America*, Technology Press; Zittel-Eastman, *Text-book of Palaeontology*, Macmillan; Raymond, *Prehistoric Life*, 1939, Harvard; Shimer, *An Introduction to the Study of Fossils*, 1933, Macmillan.

Prerequisites: Geology 201 and 202. Biology 100 and Zoology 200 are recommended. For students majoring or taking Honours in Geography or Zoology, a reading course in historical geology may be substituted for Geology 201 and 202.

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

3 units.

Lectures: 10.30-11.30, Tuesday and Thursday.

Laboratory: 3.30-5.30, Thursday.

407 [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.

Prerequisites: Geology 302 and 303.

Two lectures and four hours laboratory a week. Mr. Watson.

4 units.

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

Laboratory: 1.30-3.30, Tuesday; 9.30-11.30, Saturday.

408 [8, part]. *Mineral Deposits*.—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 302, 303, 304, and 407 must precede or accompany this course.

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

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

409 [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 408 must precede or accompany this course.

Three hours a week by arrangement. Mr. Warren.

1½ units.

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

410 [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 302, 303, and 304.

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.

411 [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*, Tempusky; maps and reports of various national surveys.

Prerequisite: Geology 305.

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

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

412 [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.

Text-book: Lobeck, *Geomorphology*, 1939, McGraw-Hill.

References: Von Engeln, *Geomorphology*, 1942, Macmillan; Hinds, *Geomorphology*, 1943, Prentice-Hall; reports of the Canadian Geological Survey; reports and maps of the U. S. Geological Survey; geological and geographical journals.

Prerequisite: Geography 101 or Geology 201 and 202.

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

3 units.

Lectures: 11.30-12.30, Tuesday and Thursday.

Laboratory: 3.30-5.30, Tuesday.

COURSES FOR GRADUATE STUDENTS

520 [20]. *Sedimentation*.

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

Prerequisites: Geology 302, 303, and 411.

Two seminars and 6 hours of reading or laboratory a week. Mr. Williams. 3 units.

521 [21]. *Problems in Palaeontology*.

Prerequisite: Geology 406.

One seminar and 6 hours laboratory a week. Mr. Williams.

3 units.

522 [23a]. *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 302.

One seminar and four hours laboratory a week. First Term. Mr. Warren. 1½ units.

Lectures: 8.30-9.30, Monday.

NOTE. This course may be taken as an undergraduate course, subject to the approval of the Department.

523 [23b]. *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 408.

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.

524 [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 409.

Occasional seminars and from five to seven hours laboratory a week. Mr. Warren. 3 to 4 units.

525 [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 407.

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

3 units.

(Not given in 1946-47.)

526 [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 308, 407, and 408.

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

Geography

NOTE.—One or other of (a) Geography 101 or (b) Geology 201 and 202 is prerequisite to all other courses in Geography, except that students not intending to major in Geography are permitted to take Geography 202 and Geography 303 without the prerequisites. It is desirable to have Geography 202 precede or be taken concurrently with Geography 303.

101 [1]. *Elementary Physical Geography*.—This introductory course aims to furnish a foundation for the study of geography. It will be useful not only to those who may intend to continue a study of geography or to teach it in schools, but to all those who are interested in man's physical environment and its effects on his principal occupations. This course covers the study of land forms, processes of weathering, erosion, diastrophism, materials of the earth's crust, climate, and history of the earth. The laboratory part of the course includes elementary surveying and map making, interpretation of topographic maps, making of relief models, the study of common minerals, rocks, and fossils.

References: Wilmore, *Groundwork of Modern Geography*, Bell; Finch and Trewartha, *Elements of Geography*, McGraw-Hill; Moore, *Elementary Geology for Canada*, Dent.

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

3 units.

Lectures: 2.30-3.30, Monday and Wednesday.

Laboratory: 3.30-5.30, Monday or Friday.

202 [2]. *Weather and Climate*.—A study of weather phenomena, climatic classification and description, and distribution of climatic types.

Text-book; Trewartha, *An Introduction to Weather and Climate*, 2nd edition, 1943, McGraw-Hill.

References: Blair, *Weather Elements*, Prentice-Hall; Kendrew, *Climate of the Continents*, Oxford.

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

Lectures: 11.30-12.30, Monday and Wednesday.

Laboratory: 3.30-5.30, Wednesday.

205 [5]. *Commercial Geography*.—(This is the same as Commerce 191.) Geography 205 may be taken as a Second Year subject, but not as a Third or Fourth Year subject. 3 units.

303 [3]. *Regional Geography*.—An outline course of regional geography covering the world. The physical structure or build of the continents, their climate, population, history of settlement, natural resources, industry, and transportation are studied. Emphasis may change from year to year as to the continents studied.

References: Renner and associates, *Global Geography*, Crowell; Newbigin, *A New Regional Geography of the World*, Harcourt, Brace; Hubbard, *The Geography of Europe*, Appleton-Century; Taylor, *Environment and Nation*, University of Toronto; Taylor, *Environment, Race, and Migration*, University of Toronto; Stamp, *Asia*, Dutton.

An atlas is a requisite: e.g., *University Atlas*, Phillips; *Oxford Advanced Atlas*, Oxford; *Modern School Atlas*, Appleton-Century.

Three hours a week. Mr. Weir.

3 units.

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

305. *History of the Earth Sciences, Geological Theories, and Historical Geology*.—(This course is identical with Geology 305.)

2 units.

306 [6]. *Economic Aspects of World Geography*.—An introduction to economic geography. Geographic basis of food supply, energy, natural resources, population, transportation, and trade. This course is intended to give a background for those interested in international and national affairs.

Text-books: Klimm, Starkey, and Hall, *Introductory Economic Geography*, 2nd edition, Harcourt-Brace; Stamp, *An Intermediate Commercial Geography*, Part 1, *Commodities and World Trade*, Longmans. An atlas is a requisite; *Modern School Atlas*, Appleton-Century, is recommended.

Two hours a week and one hour seminar or two hours laboratory. Mr. Warren.

3 units.

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

407 [7]. *Human and Cultural Geography*.—Geological history of man; ethnographical criteria; effects of environment; fundamentals of human distribution; general ecological problems of race, nation, and language.

Text-book: Taylor, *Environment, Race and Migration*, 1937, University of Toronto.

References: Boas, *General Anthropology*, 1938, Heath; Huntington, *Mainsprings of Civilization*, 1945, Wiley.

One hour a week. Mr. Okulitch.

1 unit.

Lectures: To be arranged.

409. *Geography of North America*.—Regional geography of North America, with special reference to Canada, in terms of structure, climate, history of settlement, resources and their exploitation, transportation, and trade.

Text-book: Smith and Phillips, *North America*, 1940, Harcourt, Brace.

Three lectures a week. Mr. Weir and Mr. Okulitch. 3 units.

412 [4]. *Geomorphology*.—This course is identical with Geology 412. 3 units.

Department of German

90. *Beginners' Course*. — Greenfield, *An Outline of German Grammar*, Barnes and Noble; Kästner, *Emil und die Detektive*, Holt.

Four hours a week. 3 units.

Lectures:

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

Section 2, 9.30-10.30, Monday, Wednesday, Friday, and 11.30-12.30, Saturday;

Section 3, 10.30-11.30, Monday, Wednesday, Friday, and 11.30-12.30, Tuesday;

Sections 4 and 5, 10.30-11.30, Monday, Wednesday, Friday, and 11.30-12.30, Thursday;

Sections 6 and 7, 11.30-12.30, Monday, Tuesday, Wednesday, and Friday;

Section 8, 11.30-12.30, Monday, Wednesday, Thursday, and Friday;

Section 9, 11.30-12.30, Monday, Wednesday, Friday, and 10.30-11.30, Saturday;

Section 10, 1.30-2.30, Monday, Wednesday, Friday, and 11.30-12.30, Tuesday;

Section 11, 1.30-2.30, Monday, Wednesday, Friday, and 11.30-12.30, Thursday;

Section 12, 2.30-3.30, Monday, Wednesday, Friday, and 1.30-2.30, Tuesday;

Section 13, 2.30-3.30, Monday, Wednesday, Friday, and 9.30-11.30, Saturday;

Sections 14 and 15, 10.30-11.30, Tuesday, Thursday, Saturday, and 1.30-2.30, Friday.

100 [1a]. Texts: Chiles, *German Composition and Conversation*, Part I, Ginn; Müller-Partenkirchen, *Kaum genügend*, Holt; 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, Saturday;

Sections 2 and 3, 9.30-10.30, Tuesday, Thursday, Saturday.

101 [1b]. *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.

Prerequisite: University Entrance or Beginners' German.

Three hours a week.

3 units.

Lectures:

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

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

200 [2]. Texts: Chiles, *German Composition and Conversation*, Part II, Ginn; Diamond and Schomaker, *Lust und Leid*, Holt; Heine, *Die Harzreise*, Holt; Huch, *Der letzte Sommer*, Farrar and Rinehart; Bruns, *Book of German Lyrics*, Heath.

Prerequisite: German 100 or 101 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.

300 [3a]. *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. For less detailed study: Lessing, *Minna von Barnhelm*; Goethe, *Iphigenie*; Schiller, *Maria Stuart*.

Three hours a week.

3 units.

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

Summer Reading. Before entering German 300 students must read: Fleissner, *Deutsches Literatur-Lesebuch*, Crofts, to page 92. (Robertson, *The Literature of Germany*, Home University Library, is also recommended.)

301 [3b]. *The Novelle*.—Lectures on the development of the German Novelle, with special emphasis on the nineteenth century.

Texts: Fleissner, *Die Kunst der Prosa*, Crofts; Röseler, *Deutsche Novellen des 19. Jahrhunderts*, Holt; Steinbauer, *Die Deutsche Novelle 1880-1933*, Norton. Extensive independent reading will be expected. 3 units.

302 [3c]. A course in oral and written composition, based largely on a study of the development of German civilization.

Text: Jordan, *Deutsche Kulturgeschichte*, Crofts.

Three hours a week.

3 units.

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

400 [4a]. *Nineteenth Century German Drama*.—Text: Campbell, *German Plays of the Nineteenth Century*, Crofts. 3 units.

401 [4b]. *Nineteenth Century German Fiction*.—Lectures on the development of the German novel, with special emphasis on the nineteenth century, and study of the outstanding novels of that period. 3 units.

500 [5a]. *Lessing, Goethe, and Schiller*.—Reading and discussion of the most important works of these authors. 3 units.

501 [5b]. *Middle High German*.—Text-book: Bachmann, *Mittelhochdeutsches Lesebuch*. 3 units.

Department of History

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 100, 200, 205, 330, Government 300, 325, 425, Sociology 200, Philosophy 300, 401, Psychology 201, and Geography 101 will be found especially helpful. *Attention, however, is called to the regulation in paragraph 3, page 94, 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 101, 202, 203.*

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.

Greek 330 and Latin 329 will be accepted for credit in History.

FIRST AND SECOND YEARS

101 [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: Benns, *Europe Since 1914*, Crofts, or Chambers, Grant, and Bayley, *The Age of Conflict*, Harcourt, Brace; 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.)

Four hours a week. Mr. Soward.

3 units.

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

The fourth hour will be devoted to group discussions.

202 [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; Creighton, *Dominion of the North*, Houghton Mifflin; 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 1946-47 and alternate years.)

203 [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; 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 1947-48 and alternate years.)

THIRD AND FOURTH YEARS

History 304, 309, 310, 311, 312, 313, 314, 316, and 318 are intended primarily for Third Year students; History 415, 417, 419, 420, 425/525, and 426 for Fourth Year. History 309 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.

304 [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. Miss Ormsby. 3 units.

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

309 [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; 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.

310 [11a]. *The Development and Problems of the British Commonwealth*.—British colonial policy; the development of the Dominions; 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.

(Given in 1946-47 and alternate years.)

311 [11b]. *The Development and Problems of the British Colonial Empire*.—The history of the crown colonies and India; problems of colonial administration.

Text-book: To be announced.

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.

(Given in 1947-48 and alternate years.)

312 [12]. *History of the United States of America*.—This course begins with a sketch of the American colonies at the outbreak of the Revolution and traces the history of the United States from the commencement of the War of Independence to the outbreak of the Second World War.

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

Essays will be assigned throughout the session.

Three hours a week. Mr. Soward.

3 units.

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

313 [13]. *The Age of the Renaissance and Reformation*.—A study of the cultural development of Europe from the 14th to the 17th century, including a consideration of the transition from the

mediaeval to the modern world; humanism; Renaissance art; overseas exploration and expansion; the rise of national states; the Reformation; the scientific revolution and intellectual developments.

Text-books: Lucas, *The Renaissance and the Reformation*, Harpers; Smith, *The Age of the Reformation*, Holt.

Readings and reports will be assigned.

Three hours a week. Mr. Cooke.

3 units.

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

314 [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; Gershoy, *From Despotism to Revolution*, 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: 2.30-3.30, Monday, Wednesday, and Friday.

316 [16]. *Social and Economic History of Mediaeval Europe*.—A course on the development of economic and social life through the Middle Ages in Europe, c. 500-1500 A.D.

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

Essays will be assigned throughout the session.

Three hours a week.

3 units.

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

(Not given in 1946-47.)

318 [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 1946-47.)

329. *Roman History*.—The same as Latin 329. For details see Department of Classics.

330. *Greek History to 14 A.D.*—The same as Greek 330. For details see Department of Classics.

333 [22a]. *Third Year Honours Seminar*.—Problems of bibliography and historical method.

Mr. Cooke, Miss Ormsby.

415 [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. Mr. Soward.

3 units.

417 [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.

(Not given in 1946-47.)

419 [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; 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.

420 [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.

424 [24]. *History of Latin America.*

(Not given in 1946-47.)

3 units.

425 [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.

426 [26]. *Canada After 1867.*—A survey of the main features of political and economic development of Canada after 1867, with some consideration of foreign policy. The following subjects will be dealt with: The Federal System; Expansion and Unification; Railway Building and Western Settlement; Protective Tariffs or Reciprocity; Regionalism and the Better Terms Movement; The Courts and the Constitution; Imperial Federation; Immigration; Growing Industrialism; The First World War and the Growth of Canadian Autonomy; Canada's Position in the British Commonwealth of Nations; Canada's Relations with the United States; Problems of the Period between the Wars; Agrarian Revolt; Tariffs; Labor; Discontented Provinces; National Unity; Canada Enters the Second World War.

Text-books: Wittke, *A History of Canada*, McClelland and Stewart; Creighton, *Dominion of the North*, Houghton Mifflin; *Report of the Royal Commission on Dominion-Provincial Relations, Book I, Canada, 1867-1939*, King's Printer, Ottawa; Soward and others, *Canada in World Affairs, the Pre-War Years*, Oxford.

Three hours a week. Miss Ormsby.

3 units.

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

427. *Canadian-American Relations.*—A study of the interplay between the United States and Canada, "the Siamese twins of

North America which cannot separate and live." Diplomatic relations will be stressed but attention will also be given to the social, economic, and cultural aspects of the subject.

Text-books: Brebner, *North Atlantic Triangle*, Ryerson; Keenleyside, *Canada and the United States*, Crofts.

Three hours a week.

3 units.

428. *Economic and Social History of the United States*.—A study of social and economic development in the United States, from the colonial period to the present day. The following subjects will be dealt with: the settling of the United States; provincial America; agrarian democracy; the westward movement; the conflict of sectional interests; the growth of humanitarianism; the triumph of business enterprise; the labour movement; the rise and development of the modern city; the era of "social politics"; social, intellectual, and cultural changes in the new society. Essays will be assigned throughout the session.

Text-books: Merle Curti, *The Growth of American Thought*, Harpers; Beard, *The Rise of American Civilization*, 1945, Macmillan.

Three hours a week. Miss Ormsby.

3 units.

433 [22b]. *Fourth Year Honours Seminar*.—Development of Canadian external policy. Mr. Soward.

521 [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.

533 [23]. *M.A. Seminar*.—The history of British Columbia. Mr. Sage.

Department of Home Economics

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

90 [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; Pattinson, *Canadian Cook Book*, 17th edition, Ryerson.

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

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory:

Section 1, 1.30-4.30, Monday;

Section 2, 1.30-4.30, Tuesday.

91 [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:

Section 1, 1.30-4.30, Thursday;

Section 2, 1.30-4.30, Monday.

100 [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-book: Chaney and Ahlborn, *Nutrition*, 3rd edition, Houghton Mifflin.

Prerequisite: Home Economics 90 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, 1.30- 4.30, Tuesday;

Section 2, 8.30-11.30, Saturday;

Section 3, 1.30- 4.30, Wednesday.

101 [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, 1.30- 4.30, Tuesday;

Section 2, 8.30-11.30, Saturday;

Section 3, 1.30-4.30, Monday.

200 [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 91 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, 1.30-5.30, Tuesday;

Section 2, 1.30-5.30, Thursday;

Section 3, 1.30-5.30, Wednesday.

201 [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: Justin, Rust, and Vail, *Foods*, revised edition, Houghton Mifflin.

Prerequisite: Home Economics 100.

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

1½ units.

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory:

Section 1, 1.30- 4.30, Tuesday;

Section 2, 1.30- 4.30, Thursday;

Section 3, 8.30-11.30, Saturday.

300 [5]. *Household Equipment and Furnishings*.—A study of house plans, furnishings, and equipment. Problems of selection and care of equipment and furnishings.

Text-book: Nickell and Dorsey, *Management in Family Living*, Wiley.

Prerequisite: Physics 90 or Physics 100 or Physics 110.

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

1½ units.

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

Laboratory:

Section 1, 8.30-10.30, Saturday;

Section 2, 10.30-12.30, Saturday.

301 [6]. *Economics of the Household*.—Family expenditures and standards of living. Budgeting of time, energy, and family funds.

Text-book: Nickell and Dorsey, *Management in Family Living*, Wiley.

Prerequisite: Economics 200.

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

Lectures: 9.30-10.30, Monday and Wednesday.

Discussion:

Section 1, 8.30-10.30, Saturday;

Section 2, 10.30-12.30, Saturday.

302 [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 100.

One lecture and five hours laboratory a week.

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

Lectures: 10.30-11.30, Friday.

Laboratory:

First Term, Section 1, 1.30-4.00, Wednesday; 1.30-4.00, Friday;

Section 2, 1.30-4.00, Thursday; 1.30-4.00, Friday;

Second Term, 1.30-4.00, Thursday; 1.30-4.00, Friday.

303 [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.

Text-book: Monsch, *Feeding Babies and Their Families*, Wiley.

Prerequisite: Home Economics 100.

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

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory:

Section 1, 1.30-4.30, Wednesday;

Section 2, 1.30-4.30, Friday.

400 [9]. *Textiles*.—A study of textile construction, finish, and design. Identification of fibres. Problems of textile consumers.

Text-book: Hess, *Textile Fibers and Their Use*, revised edition, Lippincott.

Prerequisite; Chemistry 225.

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

Lectures: 9.30-10.30, Monday and Wednesday.

Laboratory: 1.30-4.30, Monday.

401 [10]. *Advanced Clothing*.—Development of dress design by means of draping. A study of the social significance of fashion.

Prerequisite: Home Economics 200.

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

Lectures: 10.30-11.30, Tuesday and Thursday.

Laboratory:

Section 1, 1.30- 5.30, Tuesday;

Section 2, 1.30- 5.30, Friday;

Section 3, 8.30-12.30, Saturday.

403 [12]. *Interior Decoration*.—Application of design principles to furnishing and decorating homes.

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

Prerequisite: Home Economics 101.

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

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: 1.30-5.30, Wednesday.

410 [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.

Prerequisite: Home Economics 201.

One lecture, two hours discussion, and three hours laboratory a week. First Term.
1½ units.

Lectures and Discussion: Section 1, 9.30-12.30, Thursday;

Section 2, 8.30-11.30, Saturday.

Laboratory: Section 1, 1.30-4.30, Wednesday;

Section 2, 1.30-4.30, Thursday.

413 [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.

Reference: McLester, *Nutrition and Diet in Health and Disease*, 4th edition, Saunders.

Prerequisite: Home Economics 303.

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

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory: Section 1, 1.30-4.30, Monday;

Section 2, 1.30-4.30, Thursday.

414 [14]. *Quantity Cookery*.—Experience in the preparation of food in large quantities.

Text-book: Fowler and West, *Food for Fifty*, 2nd edition, Wiley.

Prerequisite: Home Economics 201.

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

1½ units.

415 [15]. *Institution Administration*.—Discussion of the organization and administration problems of food departments of institutions.

Text-book: West and Wood, *Food Service in Institutions*, 2nd edition, Wiley.

Open only to Third and Fourth Year students.

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

1½ units.

416 [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.

Text-book: West and Wood, *Food Service in Institutions*, 2nd edition, Wiley.

Open only to Third and Fourth Year students.

Three lectures a week. First Term.

1½ units.

Field trips to be arranged.

420 [17]. *Home Management*.—(To be arranged.)

Open only to Third and Fourth Year students.

First or Second Term.

1½ units.

421 [18]. *Child Development and Family Relations*.—The physical, mental, social, and emotional development of the infant and child; a study of family relations. Open only to Third and Fourth Year students.

Three lectures a week and observation periods.

3 units.

Lectures:

First Term, 8.30-9.30, Tuesday, Thursday, Friday;

Second Term, 8.30-9.30, Monday, Wednesday, Friday.

Observation periods to be arranged.

Department of Mathematics

FOR FIRST YEAR STUDENTS

100 [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: Currier, Watson, and Frame, *General Mathematics*, Macmillan; any book of five or six place trigonometric and logarithmic tables. Students who plan to enter the Faculty of Applied Science should obtain McGraw-Hill's *Six Place Tables*.

Four hours a week.

3 units.

Lectures:

Sections A, 9.30-10.30, Monday, Wednesday, Friday; 1.30-2.30, Tuesday;

Sections B, 9.30-10.30, Tuesday, Thursday, Saturday; 1.30-2.30, Thursday;

Sections C, 11.30-12.30, Tuesday, Thursday, Saturday; 1.30-2.30, Wednesday.

Other hours to be arranged.

PRIMARILY FOR SECOND YEAR STUDENTS

200 [2]. *Algebra and Geometry*.—Review of fundamentals, mathematical induction, complex numbers, theory of equations, determinants, convergency and divergency of series, and probability; review of conics, polar coordinates, and solid analytic geometry.

Text-books: Nowlan, *College Algebra*, McGraw-Hill; Nowlan, *Analytic Geometry*, 3rd edition, McGraw-Hill.

Three hours a week.

3 units.

Lectures:

Section 1, 10.30-11.30, Monday, Wednesday, Friday. Mr. Jennings.

Section 2, 10.30-11.30, Tuesday, Thursday, Saturday. Mr. Nowlan.

201 [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. Miss Barclay.

3 units.

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

202. *Calculus*.—Introduction to differential and integral calculus, with applications.

In 1947-48 and subsequent years this course will be prerequisite to Mathematics 300, 301, and 302.

Text-book: Miller, *Calculus*, Wiley.

Three hours a week. Mr. James.

3 units.

Lectures:

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

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

203. *Mathematics for Forestry*.—Introduction to the calculus; practical trigonometry; elementary statistics; mathematics of investments.

This course is open only to students in Forestry.

Text-book: To be announced.

Three hours a week. Mr. Murdoch.

3 units.

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

PRIMARILY FOR THIRD YEAR STUDENTS

Mathematics 2 (old course) is prerequisite to the following.

300 [10]. *Calculus*.—The elementary theory and applications of the subject.

Text-book: Miller, *Calculus*, Wiley.

Three hours a week. Mr. Nowlan.

3 units.

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

301 [11]. *Mathematical Analysis*.—A study of mathematical principles which are of importance in pure and applied mathematics. Applications to specific problems in mathematics, chemistry, physics, statistics.

Text-books: Hyslop, *Infinite Series*, Oliver and Boyd; Rutherford, *Vector Methods*, Oliver and Boyd.

Two hours a week. Mr. James.

2 units.

Lectures: 1.30-2.30, Monday and Friday.

302 [12]. *Differential Equations*.—An introductory course, with applications to geometry, mechanics, physics, and chemistry.

Text-book: Piaggio, *Differential Equations*, Bell.

This course may be taken concurrently with Mathematics 300.

Three hours a week. Mr. Buchanan.

3 units.

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

303 [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*, 3rd edition, McGraw-Hill.

Three hours a week. Mr. Nowlan.

3 units.

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

304 [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 1946-47 and alternate years.)

PRIMARILY FOR FOURTH YEAR STUDENTS

400 [15]. *Modern Algebra*.—The number system of algebra and analysis. An introduction to groups, fields, linear vector spaces. Various applications.

Text-book: MacDuffee, *Introduction to Abstract Algebra*, Wiley.

References: Birkhoff and MacLane, *A Survey of Modern Algebra*, Macmillan; Albert, *Modern Higher Algebra*, University of Chicago.

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

Lectures: 8.30-9.30, Wednesday and Friday.

(May not be given in 1946-47.)

401 [16]. *Advanced Calculus*. — Singular points, asymptotes, differentiation and integration under the sign of the integral, line and surface integrals; Euler's functions, Fourier series, elliptic integrals and functions, integration with a complex variable, Bessel functions.

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

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

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

402 [17]. *Theory and Applications of Differential Equations*.—An advanced course, with applications to selected topics in dynamics, the theory of potential, and quantum mechanics.

Text-book: Margenan and Murphy, *The Mathematics of Physics and Chemistry*, Van Nostrand.

Prerequisites: Mathematics 302, Physics 300.

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

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

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

(May not be given in 1946-47.)

403 [19]. *Advanced Geometry*.—An introduction to the geometry of the projective plane; a critical study of the axioms of Euclidean and non-Euclidean geometry; coordinate systems and imaginary elements.

Text-books: Robinson, *The Foundations of Geometry*, University of Toronto; Coxeter, *Non-Euclidean Geometry*, University of Toronto.

Prerequisite: Mathematics 303.

Two hours a week. 2 units.

Lectures: 11.30-12.30, Tuesday and Thursday.

(Given in 1946-47 and alternate years.)

440 [18]. *Honours Seminar*.—Fourth Year Honours students in the Department are required to take this course.

1 unit.

COURSES FOR GRADUATE STUDENTS

500 [20]. *Tensor Analysis*.—Text-book: McConnell, *Applications of the Absolute Differential Calculus*, Blackie.

501 [21]. *Theory of Functions of a Real Variable*.

502 [22]. *Theory of Functions of a Complex Variable*.

503 [23]. *Differential Geometry*.—Text-book: Weatherburn, *Differential Geometry*.

504 [24]. *Projective Geometry*.—Text-book: Veblen and Young, *Projective Geometry*, Vol. I.

505 [25]. *Celestial Mechanics*.—Text-book: Moulton, *An Introduction to Celestial Mechanics*.

506 [26]. *Ordinary and Partial Differential Equations*.

507 [27]. *Theory of Numbers and Algebraic Numbers*.

508 [28]. *Linear Algebras*.—Text-book: Dickson, *Algebras and Their Arithmetics*.

509 [29]. *Modern Algebraic Theories*.—Text-book: Birkhoff and MacLane, *Survey of Modern Algebra*.

510 [30]. *Harmonic and Elliptic Functions*.—Text-books: Byerly, *Integral Calculus*; Whittaker and Watson, *Modern Analysis*; Gray, Mathews, and MacRobert, *Bessel Functions*.

511 [31]. *Topology*.

512 [32]. *Theory of Groups*.

Department of Philosophy and Psychology

Philosophy

100 [1]. *Introduction to Philosophy*.—An introductory study of the questions raised by major philosophers who have contributed to the background of present-day thought. This study will be based on a reading of selected primary sources, and it will aim at obtaining perspective on contemporary scientific, literary, social, and religious issues.

Text-books: Plato, *The Republic*, Scribners; Randall, Buckler, and Shirk, *Readings in Philosophy*, Barnes and Noble; Whitehead, *Adventures of Ideas*, Pelican.

Three hours a week.

3 units.

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

200 [2]. *Ancient and Mediaeval Philosophy*.—Western philosophic thought from Thales to St. Augustine, with the principal stress on the works of Plato and Aristotle.

Text-books: To be announced.

Three hours a week. Mr. Maslow.

3 units.

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

201 [3]. *Early Modern Philosophy*.—The Renaissance; the rise of modern science, and its transformation of traditional beliefs; the function of reason and the conception of nature in the seventeenth and eighteenth centuries. The course will be based on selected readings from the works of Bacon and Hobbes, the Continental Rationalists (Descartes, Spinoza, Leibniz), and the British Empiricists (Locke, Berkeley, Hume).

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.

Three hours a week.

3 units.

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

300 [4]. *Modern Philosophy from 1781 to 1900*.—The main currents of philosophic thought during this period and their relation to the scientific, social, political, and general cultural changes during the period.

Text-book: Rand, *Modern Classical Philosophers*, Houghton Mifflin.

References: To be announced.

Three hours a week. Mr. Maslow.

3 units.

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

301 [5]. *Philosophic Trends in the Twentieth Century*.—A discussion of major philosophic problems prevalent since the turn of the twentieth century. Pragmatism, logical positivism, intuitionism, critical realism, and the philosophy of organism will be studied with emphasis on pertinent theories of meaning, truth, mechanism, vitalism, purpose, the qualitative and relational aspects of experience, possibility and actuality, the process of events, and the feeling of value. The relevance of these theories to science, literature, and human conduct will be considered throughout the course.

Text-books: James, *Pragmatism*, together with four related essays from *The Meaning of Truth*, Longmans; Edman, *The Philosophy of Santayana*, The Modern Library, Random House; Whitehead, *Science and the Modern World*, Macmillan.

Three hours a week.

3 units.

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

302 [6]. *Ethics*.—The development of ethical thought within the history of civilization. The historical approach will be followed by a systematic discussion of the fundamental problems of ethics.

Text-books: Lippmann, *Preface to Morals*, Macmillan; Clark and Smith, *Readings in Ethics*, Dodd, Mead.

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

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

303 [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.

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

400 [7]. *Aesthetics*.—A philosophical analysis of aesthetic experience; its relation to daily life, science, and moral principles; the nature of fine art; the materials, forms, and expressive functioning of typical artistic objects; the beautiful, the sublime, the tragic, and the comic; naturalism, idealism, classicism, romanticism, expressionism. No technical knowledge of any of the arts is presupposed.

Text-book: Flaccus, *The Spirit and Substance of Art*, Crofts.

Three hours a week. 3 units.

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

401 [9]. *Social and Political Philosophy*.—A study of modern political theory, with emphasis upon the relation between changes in the general current of political ideas and beliefs and changes in the social and political structure. The leading political ideas today: democracy and aristocracy; collectivism and individualism; socialism, communism, fascism; nationalism and pluralism.

Text-book: To be announced.

Three hours a week. 3 units.

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

402 [10]. *Symbolic Logic and Semantics*.—Introduction to the elements of symbolic logic and to the general theory of signs and their applications. Philosophy 303 or its equivalent is desirable as a preparation for this course.

Text-book: To be announced.

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

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

(Not given in 1946-47.)

500 [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: To be announced.

Three hours a week.

3 units.

Lectures: 1.30-2.30, Monday.

Seminar: 2.30-4.30, Thursday.

(Not given in 1946-47.)

Psychology

Psychology 100 or 101 is a prerequisite for all courses in Psychology numbered 200-500.

100 [A]. *Introductory Psychology*.—The study of basic forms of human thinking and acting from a scientific and a practical standpoint.

Text-book: To be announced.

Three hours a week.

3 units.

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

101 [1]. *Elementary Psychology*.—Psychology as a science; basic forms of human activity, maturation, adjustment and maladjustment, emotion, sensation, learning, intelligence, reasoning, and personality. Open to students in Home Economics, Nursing, and pre-professional courses.

Text-book: Dashiell, *Fundamentals of General Psychology*, Houghton Mifflin.

Three hours a week.

3 units.

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

200 [2]. *Experimental Psychology*.—Experimental methods applied to human behaviour; the performance of individual and group experiments; basic principles of psychological measurement. Open to Third and Fourth Year students by permission of the instructor.

Text-books: To be announced.

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.

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.

201 [3]. *Social Psychology*.—The psychological analysis of social life from the point of view of the individual. Topics included are the social setting of human behaviour, personality and group participation, language, suggestion, imitation, attitudes, stereotypes, propaganda, crowd behaviour, social movements, and leadership.

Text-books: Katz and Schanck, *Social Psychology*, Wiley; Young, *Social Psychology*, 2nd edition, Crofts.

Three hours a week.

3 units.

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

202 [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.

Three hours a week.

3 units.

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

300 [7]. *Applied Psychology*.—The application of psychology in business and industry, personnel management, salesmanship, vocational guidance; the measurement of aptitudes, interests, and personality.

Text-books: Bingham, *Aptitudes and Aptitude Testing*, Harpers; Moore, *Psychology for Business and Industry*, McGraw-Hill.

Three hours a week.

3 units.

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

301 [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.

Three hours a week.

3 units.

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

302 [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 401 before Psychology 302.

Text-book: To be announced.

Three hours a week. Mr. Tyler.

3 units.

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

(Given in 1946-47 and alternate years.)

400 [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: Doreus and Shaffer, *Abnormal Psychology*, 2nd edition, Williams and Wilkins.

Three hours a week.

3 units.

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

401 [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: Garrett, *Statistics in Psychology and Education*, Longmans.

Three hours a week.

3 units.

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

402 [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-books: Linton, *The Study of Man*, Appleton-Century; Linton, *The Cultural Background of Personality*, Appleton-Century.

Three hours a week.

3 units.

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

(Not given in 1946-47.)

500 [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 Be-*

havior in Animals and Men, Appleton-Century; Troland, *The Fundamentals of Human Motivation*, Van Nostrand; Young, *Motivation of Behavior*, Wiley.

Three hours a week.

3 units.

Lectures: 11.30-12.30, Monday.

Seminar: 2.30-4.30, Thursday.

(Given in 1947-48 and alternate years.)

Department of Physics

PRIMARILY FOR FIRST AND SECOND YEAR STUDENTS

90 [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 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, Saturday;

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

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

Section 4, 11.30-12.30, Tuesday, Thursday, Saturday.

100 [1]. *Elementary Physics*.—A study of general college physics suitable for those students who have obtained credit for University Entrance Physics A 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: Physics 90 or University Entrance 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.

110 [C]. *General 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.

200 [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 100.

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.

220 [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 100.

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

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

230 [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 100.

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

PRIMARYLY FOR THIRD YEAR STUDENTS

300 [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 100.

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.

301 [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.

If credit has not been obtained in Mathematics 300 and 302 they should be taken concurrently with this course.

Two lectures a week. 2 units.

Lectures: 8.30-9.30, Tuesday and Thursday.

302 [7]. *Introduction to Mathematical Physics*.—A course of lectures upon selected topics including vector analysis, elasticity, wave motion, potential, hydrodynamics, viscosity, surface tension, and heat conduction.

If credit has not been obtained in Mathematics 300 and 302 they should be taken concurrently with this course.

Two lectures a week. 2 units.

303 [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.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday. 3 units.

310 [10]. *Light*.—A short lecture course for students who have not taken Physics 303. 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.

330 [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 90 or 100.

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

PRIMARILY FOR FOURTH YEAR STUDENTS

401 [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.

Lectures: 10.30-11.30, Wednesday and Friday.

402 [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 200 and 300, and Mathematics 300.

Two lectures a week.

2 units.

Lectures: 11.30-12.30, Tuesday and Thursday.

403 [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.

Lectures: 11.30-12.30, Monday and Wednesday.

404 [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.

Lectures: 11.30-12.30, Friday.

409 [19]. *Experimental Physics*.—This is a laboratory course covering work in thermionics, spectroscopy, high vacuum techniques, machine shop practice, 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

500 [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.

501 [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.

502 [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.

503 [23]. *Vector Analysis*.—A course of lectures upon the applications of vector analysis to problems in physics.

One lecture a week. 1 unit.

504 [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.

505 [25]. *Theory of Measurements*.—A lecture course on the combination of observations, interpolation formulae, frequency distributions, least squares, correlation coefficients, significance tests, application of statistical methods to quality control.

One lecture a week. 1 unit.

506 [26]. *Advanced Analytical Dynamics*.—A lecture course on the generalized methods of Lagrange, Hamilton, and Jacobi.

1 unit.

507 [27]. *The Theory of Relativity*.—An introductory course to the theory of relativity.

One lecture a week. 1 unit.

508 [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.

509 [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.

510 [30]. *Electron Optics*.—A study of the theory of electrostatic and magnetic electron focusing systems with practical applications in both the electrostatic and the magnetic electron microscopes, cathode ray tubes, television cathode ray tubes, and electron multipliers.

511. *Low Temperature Physics*.—A survey of modern methods and experimental techniques of gas liquefaction together with a study of the properties of matter at low temperatures and related topics selected from current literature.

One lecture a week. 1 unit.

512. *Electronics*.—A course on the application of electromagnetic theory to electronic problems—guided transmission, frequency transients, and vacuum tube phenomena.

One lecture a week. 1 unit.

513. *Thermodynamics*.—A more advanced treatment than that given in Physics 404.

One lecture a week. 1 unit.

530 [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 Social Work

NOTE. The following courses, except Social Work 499, are open only to students who have made application and have been accepted for admission to the Department.

499 [1]. *Introduction to Social Work*.—The historical background of the different fields of social work together with a study of present-day agencies and programmes.

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

Prerequisite: Fourth Year standing or permission.

Three hours a week. 3 units.

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

500 [1a]. *History of Social Welfare*.—Comparable to the first term of S.W. 499 but intended for experienced social workers or students entering with advanced standing.

Text-book: de Schweinitz, *England's Road to Social Security*, University of Pennsylvania.

Prerequisite: Permission.

Time to be arranged. First Term. Miss Smith. 1½ units.

501 [2a]. *Social Case Work*.—An introductory course including the philosophy of social case work, the types of problems to which case work can make a contribution, and case work methods and technique. Interviewing and recording are emphasized and the use of personal and community resources is presented through analysis of case material.

Prerequisite: S.W. 499 or 500.

Three hours a week. First Term. 1½ units.

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

502 [2b]. *Social Case Work*.—A continuation of 501 with more detailed study of cases in the fields of child and family welfare.

Three hours a week. Second Term. $1\frac{1}{2}$ units.

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

503 [3]. *Services to Children*.—An introductory course in the development and methods of child care; the social movements and social agencies which have developed in response to the needs of children; present practices and trends in the field of child welfare.

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

Lectures: 10.30-11.30, Monday and Wednesday.

504 [4]. *Medical Information*.—The purpose of this course is to provide social work with effective ways of understanding and working with people who are ill or handicapped. This requires a knowledge of the anatomy and physiology of the various systems of the body and the diseases and disorders related to each system and their social and emotional components. The course also includes an understanding of the role of the social worker and relations with doctors, nurses, and patients.

Two hours a week. Miss Johnson and special lecturers. 2 units.

Lectures: 9.30-10.30, Wednesday and Friday.

505 [5]. *Advanced Case Work*.—Discussion of case material from specialized fields of practice meant to give the student a greater understanding of personality and to increase the student's skills in case work methods. Sections will be arranged in various fields of specialization.

Two hours a week. First Term. 1 unit.

Time to be arranged.

506. *Advanced Case Work*.—A continuation of 505.

Two hours a week. Second Term. 1 unit.

507 [7]. *Introduction to Social Group Work*.—This course includes a study through lectures and a discussion of group records of the place of group work in the general field of social work. Specific attention is given to the group process; group work objectives; programme planning and leadership.

Three hours a week. First Term. Miss Thomas. $1\frac{1}{2}$ units.

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

508. *Social Psychiatry*.—A consideration of the dynamics of behaviour in the neuroses and in functional and organic psychoses. Social implications and treatment possibilities of deviations from the normal. The course will include lectures, discussions, and clinical demonstrations.

Two hours a week. Second Term. Mr. Hutton. 1 unit.

Lectures: 8.30-9.30, Monday and Wednesday.

509 [9]. *Beginning Field Work*.—Practice work under supervision in various social agencies.

Tuesday and Thursday. 3 units.

510 [10]. *Advanced Field Work*.—Supervised work in specialized agencies.

Time to be arranged. 3 units.

511 [11]. *Community Organization*.—A study of the problems of identifying social needs in the community and of developing programmes to meet them. An analysis of the function of coordinating agencies in the community and the place of the professional social worker in social planning.

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

Lectures: 8.30-9.30, Wednesday and Friday.

513 [13a and 13b]. *Public Welfare Programmes*.—A descriptive study of public welfare organization. Relations between various levels of government. Principles of organization.

Two hours a week. First Term. 1 unit.

Lectures: 10.30-11.30, Monday and Wednesday.

517. *Social Group Work II*.—Principles and practices of group work. This course must be preceded by S.W. 507 and is to be taken only in conjunction with field work in a group work agency or by students with previous group work experience.

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

Time to be arranged.

518. *Development of Personality*.—A study of the dynamics of personality development from birth to old age.

Two hours a week. First Term. 1 unit.

520 [20]. *Social Research*.—An introduction to social statistics and to methods of social research.

Two hours a week. Second Term. 1 unit.

Lectures: 8.30-10.30, Monday.

545 [12]. *Social Work and the Law*.—Principles of law with which the social worker should become familiar. The structure of the court system. Problems of judicial administration and law which particularly affect persons with low incomes.

Two hours a week. First Term. 1 unit.

Time to be arranged.

546. *Administration of Social Agencies*.—The basic principles of administration and organization. A study of the delegation of authority, finance, personnel practices, public relations, office procedures.

Two hours a week. Second Term. 1 unit.

560. *Legal Protection of the Child*.—A study of the administration of statutes designed to protect the child from the standpoint of health, education, employment, dependency, and general welfare. Two hours a week. First Term. 1 unit.

565. *Methods in Community Organization*.—An advanced course in methods and techniques of community organization. Two hours a week. First Term. Miss Thomas. 1 unit.

566. *Seminar in Medical Social Work*.—An advanced discussion of the functions of medical social service departments; organization and administration; inter-agency relations; the place of the medical social worker in non-institutional public health and public welfare programmes. Open only to students specializing in medical social work.

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

567. *Seminar in Rural Public Welfare Programmes*. Three hours a week. Second Term. 1½ units.

575. *Seminar in Supervision*. Open only to advanced, experienced students. Three hours a week. Second Term. 1½ units.

580. *Seminar in Social Group Work*. Open only to students specializing in group work. Three hours a week. Second Term. Miss Thomas. 1½ units.

581. *Seminar in Advanced Case Work*.—A discussion of advanced problems in case work. Administrative and community aspects. Time to be arranged. 1½ units.

582. *Seminar in Problems of Public Welfare Administration*. Time to be arranged. 1½ units.

585. *Thesis Seminar*.—The planning and preparation of theses. The work includes group discussions and individual conferences. Time to be arranged. 3 units.

Department of Spanish

For the terms under which Spanish may satisfy the language requirement, see pages 92-93.

Spanish 201 is prerequisite to a major.

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

Texts: House and Mapes, *The Essentials of Spanish Grammar*, Ginn; Eoff and King, *Spanish American Short Stories*, Macmillan; Brenes & Patterson, *Conversemos*, Crofts.

Four hours a week. 3 units.

Lectures:

- Section 1, 8.30-9.30; Monday, Wednesday, and Friday; 1.30-2.30, Tuesday;
 Section 2, 9.30-10.30, Monday, Wednesday, and Friday; 1.30-2.30, Thursday;
 Section 3, 8.30-9.30, Tuesday, Thursday, and Saturday; 1.30-2.30, Friday;
 Section 4, 9.30-10.30, Tuesday, Thursday, and Saturday; 1.30-2.30, Monday;
 Section 5, 10.30-11.30, Tuesday, Thursday, and Saturday; 1.30-2.30, Wednesday.

101 [1]. Review of grammar; composition, translation, conversation.

Texts: Adams, *Brief Spanish Review Grammar and Composition*, Holt; Ramos Carrión and Vital Aza, *Zaragüeta*, Heath; Arjona, *Siglo de Aventuras*, Macmillan; Blasco Ibáñez, *Siete Cuentos*, Holt; Camba, *La Rana Viajera*, Heath.

Three hours a week.

3 units.

Lectures:

- Section 1, 10.30-11.30, Monday, Wednesday, and Friday;
 Section 2, 11.30-12.30, Monday, Wednesday, and Friday;
 Section 3, 10.30-11.30, Tuesday, Thursday, and Saturday;
 Section 4, 11.30-12.30, Tuesday, Thursday, and Saturday.

201 [2]. Translation and discussion of modern authors and *Don Quijote*, composition and commercial correspondence, conversation.

Texts: Mitchell, *Intermediate Spanish Composition*, Longmans; Blasco Ibáñez, *La Barraca*, Macmillan; Stoudemire, *Cuentos de España y de América*, Houghton Mifflin; Cervantes, *Don Quijote de la Mancha*, Macmillan; Amner-Staubach, *Revista de América*, Ginn.

Three hours a week.

3 units.

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

301. *The Golden Age*.—Spanish Literature of the 16th and 17th centuries.

Texts: Buchanan, *Spanish Poetry of the Golden Age*, University of Toronto; Alarcon, *La Verdad Sospechosa*, Heath; Castro, *Las Mocedades del Cid*, Holt; *La Estrella de Sevilla*, Heath; Northup, *Selections from the Picaresque Novel*, Heath; Cervantes, *Novelas Ejemplares*, Holt.

Three hours a week. Mr. Parker.

3 units.

Lectures: To be arranged.

302. *Modern Authors*.—Romanticism and Realism.

Texts: Knickerbocker and Levy, *Modern Spanish Prose Readings 1830-1930*, Appleton-Century; Hills and Morley, *Modern Spanish Lyrics*, Holt.

Three hours a week. Mr. Brooke.

3 units.

Lectures: To be arranged.

Department of Zoology

NOTE. Biology 100 is prerequisite to all courses in Zoology.

200 [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: Storer *General Zoology*, McGraw-Hill.

References: Hegner, *College Zoology*, Macmillan; 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;

Section 4, 2.30-4.30, Wednesday.

300 [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: Berland, *Manual of Comparative Anatomy*, 1943, McGraw-Hill.

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:

Section 1, 2.30-6.30, Monday and Wednesday;

Section 2, 1.30-5.30, Tuesday and Thursday;

Section 3, 1.30-5.30, Tuesday; 8.30-12.30, Saturday.

301 [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 two hours laboratory a week. Mr. Clemens. 3 units.

Lectures: 9.30-10.30, Tuesday and Thursday.

Laboratory: 1.30-3.30, Tuesday.

302 [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*, Macmillan; 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.

303 [5]. *Histology*.—Normal histology of representative human tissues with references to and illustrations from domestic and common wild animals. Methods in histology, fixing, embedding, sectioning, and staining with standard stains; the golgi method. Each student will prepare a series of about 50 slides during the term.

Text-books: Pre-medical students are advised to purchase the text-book adopted by the medical school they expect to attend; with other students the selection of a text-book is optional. The following are recommended: Maximow and Bloom, *Text-book of Histology*, 2nd edition, Saunders; Elwyn and Strong, *Bailey's Text-book of Histology*, 8th edition, latest reprint, Wood; Bremer, *A Text-book of Histology*, Blakiston; Schäfer, *Essentials of Histology*, Lea and Febiger; Jordan, *A Text-book of Histology*, Appleton-Century.

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

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

Laboratory:

Section 1, 2.30-6.00, Monday; 1.30-6.00 Wednesday;

Section 2, 1.30-5.30, Tuesday and Thursday.

304 [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: Huettner, *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 and Wednesday.

Laboratory:

Section 1, 2.30-6.30, Monday and Wednesday;

Section 2, 1.30-5.30, Tuesday and Thursday.

305 [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, Friday.

306 [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.

Laboratory manual: Pettingill, *A Laboratory and Field Manual of Ornithology*.

One lecture and four hours laboratory a week. 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.

307 [12]. *Biology of Fishes*.—Classification, identification, life histories, and ecology of fishes with special reference to the British Columbia species.

One lecture and four hours laboratory a week. Mr. Hoar. 3 units.
Lectures: 8.30-9.30, Friday.
Laboratory: 1.30-5.30, Friday.

400 [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.

401 [9]. *Practical Entomology*.—Habitat studies of local representatives of all insect orders; collecting, preserving, mounting, dissecting, and sectioning equipment and technique; clearing methods; meteorological instruments and records; rearing methods and equipment; the keeping and writing up of records; literature; the elements of insect photography. Students will rear certain insects under natural and controlled conditions, keeping full records.

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

Six hours a week by appointment. First Term. Mr. Spencer. 2 units.

402 [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.

403. *Economics of the Fisheries*.—The Canadian fishing industry and research problems related to it; populations of important food fishes and factors affecting them, including varying degrees of fish-

ing intensity, mortality rates, etc. Students are advised to take Agronomy 421 in the First Term in preparation for this course.

Two lectures and one laboratory period a week, times to be arranged. Second Term. Mr. Hoar. 1½ units.

404. *Environmental Factors*.—An analysis of the relations of temperature, pressure, light, humidity, salinity, gases, etc., to animals and animal populations.

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

Lectures: 8.30-9.30, Tuesday.

Laboratory: 9.30-1.30, Tuesday.

Students majoring or taking Honours in Zoology may take the courses Biology 300, 301, 302, 303, 400, Agronomy 421, and Geology 406 in fulfilment of credit requirements upon the approval of the Head of the Department of Zoology. As a prerequisite for Geology 406, a reading course in historical geology may be substituted for Geology 201 and 202 and may be taken concurrently with Geology 406.

COURSES FOR GRADUATE STUDENTS

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

500 [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 a week. Mr. Clemens, Mr. Spencer, Mr. Cowan, and Mr. Hoar. 1 unit.

Required of all graduate students.

501 [21]. *Limnology and Marine Zoology*.—A course dealing with the physical and chemical conditions in streams, lakes, and seas; life histories and ecology of aquatic organisms; methods of investigation.

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 two hours laboratory a week, times to be arranged. Mr. Clemens. 3 units.

502 [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, by appointment.
Mr. Spencer. 3 units.

503 [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 306.

Lectures, seminar, and laboratory, four hours a week. Hours to be arranged. Mr. Cowan. 3 units.

504. *Experimental Fisheries Zoology*.—Advanced studies in the physiology of cold-blooded animals, with particular reference to fishes.

Text-book: Heilbrunn, *Outline of General Physiology*, 1944, Saunders.

Prerequisite: Biology 400 and Zoology 404.

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

Lectures: 8.30-9.30, Thursday.

Laboratory: 9.30-1.30, Thursday.

Fisheries

Arrangements will be made whereby students in Commerce may elect courses in Zoology and Fisheries. Students desiring such a combined course should consult with the Departments of Commerce and Zoology.

Programmes for courses in fisheries technology and in fish plant management are under consideration and students interested in these fields may obtain advice from Mr. Hoar.

1946-47

THE
FACULTY
OF
APPLIED SCIENCE
(ENGINEERING; NURSING AND HEALTH)

1946-1947

1946-47

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 First and Second 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 Second Year; and to associate themselves with the appropriate engineering societies.

ADMISSION

The general requirements for admission to the University are given on pages 34-36.

For admission to Applied Science it is required that the student shall have completed the First Year in Arts and Science, with credit for the courses shown below, or that he shall have fulfilled these requirements by Senior Matriculation or similar work taken outside the University.

Required subjects are:

English 100 and 101

Mathematics 100

Chemistry 100

Physics 100*

Latin 101 or French 101 or German 90†

The passing grade for entrance to Applied Science is 60 per cent. in Mathematics, Chemistry, Physics, and Biology, and 50 per cent. in other subjects.

Students intending to enter 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. For detailed requirements for admission to courses in Nursing and Health see pages 245, 247, 249.

No student with defective standing will be admitted to the First Year in Applied Science.

Students who are considering entering Applied Science are recommended to take the First Year Arts and Science 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 Applied Science. This experience includes special orientation lectures, contact with Arts students, with Applied Science senior students, with specialists, with college organization, and with university methods, thus providing a period of adjustment in preparation for the difficult and heavy work of the First Year in Applied Science and an opportunity for the student to decide whether or not he is suited for Engineering or whether he might prefer to proceed in other courses without loss of time.

*Students planning to enter the B.S.F. Course or the Degree Courses in Nursing are required to take Biology 100 instead of Physics 100.

†Students intending to enter Applied Science are advised to take German 90.

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 and their applications will be considered subject to the results of these examinations.

The Faculty reserves the right of selection and admission of the students entering the First Year of the Combined Course and the Third Year of the Double Course in Nursing. Applications for admission to the First 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.

Students desiring to enrol in the double course for the degrees of B.A. and B.A.Sc. require complete University Entrance for admission. They will register for the first two years in Arts and Science and take the courses outlined on pages 91-93. Satisfactory completion of the two years' work qualifies the student to register in the First Year Applied Science.

Students intending to enter Applied Science are advised to present Chemistry A and Physics A for University Entrance, and should, preferably, have completed at least one course in French and one course in German before applying for admission to the Faculty of Applied Science.

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 235.)

Master of Applied Science (M.A.Sc.). (See page 250.)

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. Agricultural Engineering.
2. Chemical Engineering.
3. Civil Engineering.
4. Electrical Engineering.
5. Forest Engineering.
6. Geological Engineering.
7. Mechanical Engineering.
8. Metallurgical Engineering.
9. Mining Engineering.
10. Engineering Physics.
11. Nursing and Health.

*The curriculum described in the following pages may be changed from time to time as deemed advisable by the Senate.

Double courses are offered in Arts and Science and Applied Science leading to the degrees of B.A. and B.A.Sc. (Engineering), and B.A. and B.A.Sc. (Nursing). 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 Arts and Science as set forth on page 91. The latter can select subjects in their Second Year Arts and Science that will satisfy the Arts and Science requirements for the double degree, and at the same time complete the work of First Year Arts and Science. Thus they may qualify for the degree of B.A. without expending any more time than would be required to qualify them for entrance into First Year Applied Science.

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 completed a suitable amount of practical work related to his chosen profession. Third and Fourth Year essays (see page 231) 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

1. 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.

2. 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 253.

NOTE. As the year 1946-47 marks a transitional period in some courses in Applied Science, the curricula shown for the Fourth Year in these courses will be subject to minor adjustment in the year 1947-48 to bring the curricula to their final form. The courses affected are: Agricultural Engineering, Electrical Engineering, Mechanical Engineering, Metallurgical Engineering, Mining Engineering, Engineering Physics.

COURSES FIRST AND SECOND YEARS

The work of both years is the same in all curricula, except those in Nursing and Health, Forestry, and Forest Engineering.

No student with defective standing will be admitted to First or Second Year Applied Science.

Students entering Second 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.

FIRST YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Math. 150 Trigonometry and Solid Geometry.....	271	2	.....	2	.....
Math. 151 Algebra.....	271	2	.....	2	.....
Math. 152 Calculus.....	272	2	.....	2	.....
M.E. 152 Drawing.....	273	.....	3	.....	3
Physics 150 Mechanics.....	285	3	3	.....	.....
Physics 151 Heat.....	286	.....	.....	3	3
*Chem. 150 Qual. Analysis.....	256	1	3	1	3
C.E. 150 General Engineering.....	258	1	.....	1	.....
C.E. 155 Graphical Statics.....	258	.....	2	.....	2
C.E. 160 Engineering Problems.....	258	.....	4	.....	4
English 150 Composition.....	264	2	.....	2	.....
†For. 252 Forest Botany.....	265	2	2	2	2

SECOND YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....	.....	.....	.....	.....	.....
Math. 250 Calculus.....	272	3	.....	3	.....
Math. 251 Geometry.....	272	2	.....	2	.....
*Chem. 250 Quan. Analysis.....	256	1	3	1	3
Physics 250 Electricity.....	286	2	3	2	3
C.E. 250 Field Work and Mapping.....	258	.....	4	.....	4
C.E. 251 Surveying.....	258	2	.....	2	.....
C.E. 255 Descriptive Geometry.....	259	.....	3	.....	3
C.E. 260 Mechanics and Engineering Problems.....	259	2	3	2	3
Geol. 201 General Geology.....	270	2	.....	2	.....
Geol. 202 Geology Laboratory.....	270	.....	2	.....	2
English 250 Technical Writing.....	264	1	.....	1	.....
†For. 150 General Forestry.....	265	2	.....	2	.....
†For. 250 Silvics.....	265	1	2	1	2

NOTE.—The sum of \$3.00 as caution money must be deposited before the opening of the courses in Surveying Field Work.

*Not required for Forest Engineering students.

†For Forest Engineering students only.

THIRD AND FOURTH YEAR ESSAYS

Essays are required of all students entering the Third and Fourth Years, except that the essay is optional for students entering Fourth Year Chemical Engineering and is not required of students entering Third or Fourth Year Engineering Physics or Fourth 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 15th.*
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.

A maximum of 100 marks is allowed, the value being based on presentation, English, and matter.

1. Agricultural Engineering

The curriculum in Agricultural Engineering is designed to meet the requirements of students who intend to qualify for the engineering profession as it is applied to agriculture.

Broad training is given in basic subjects: Mathematics, Physics, Chemistry, Geology, General Engineering, Mapping, Surveying. To this is added training in general phases of Civil, Mechanical, and Electrical Engineering.

In the final years, special stress is placed on the application of engineering to various phases of agriculture and to specific problems connected with land reclamation, soil conservation, irrigation, and drainage, as well as to problems in engineering as applied to building construction, agricultural machinery design, construction, operation, and adaptation; refrigeration; plant management; rural electrification.

Fourth Year Course will not be given in 1946-47.

THIRD YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....		.....	.....	.....	.....
M.E. 352 Mechanical Drawing.....	273	At end of 2nd Term, 2nd Year			
C.E. 355 Strength of Materials.....	260	2	3*	2	3*
C.E. 357 Materials Testing.....	260	.....	3*	.....	3*
C.E. 360 Hydraulics.....	260	1	2	1	2
M.E. 371 Applied Thermodynamics.....	274	2	3	2	3
Geol. 403 Petrology.....	270	2	.....	2	.....
Biology 100 Introductory Biology.....	255	2	2	2	2
Ag. Eng. 350 Applications of Engineering.....	255	2	2	2	2
Agric. 100 General Agriculture.....	255	2	2	2	2
Agron. 211 Soils.....	255	2	2	2	2

FOURTH YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....	.....	.....	.....	.....	.....
C.E. 370 Structural Design 1.....	261	2	3	2	3
C.E. 475 Engineering Economics.....	263	1	1	1	1
E.E. 451 Electrical Engineering.....	277	2	2	2	2
Geol. 411 Regional Geology.....	270	2	2	2	2
Geog. 303 Regional Geography.....	180	3	.....	3	.....
Ag. Ec. 301 Agricultural Economics.....	297	3	.....	3	.....
Agron. 313 Drainage, Irrigation.....	255	2	2	.....	.....
Agron. 314 Soil Conservation.....	255	.....	.....	2	2
Ag. Eng. 450.....	255	2	2	2	2
Ag. Eng. 451.....	255	2	2	2	2

*Alternate weeks.

2. Chemical Engineering

The curriculum 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 Third Year the student receives an introduction to the principles of chemical engineering proper, and in the Fourth 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.

THIRD YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....	.....	.....	.....	.....	.....
M.E. 352 Mechanical Drawing.....	273	At end of 2nd Term, 2nd Year			
Math. 350 Applied Calculus and Differential Equations.....	272	3	.....	3	.....
Geol. 302 Mineralogy.....	270	2	.....	.....	.....
Geol. 303 Laboratory.....	270	.....	2	.....	.....
Chem. 300 Organic.....	256	2	3	2	3
Chem. 304 Theoretical.....	256	2	3	2	3
Chem. 310 Adv. Analysis.....	256	1	6	1	6
Chem. 350 Introduction to Chemical Engineering.....	256	2	.....	2	.....
Physics 360 Light.....	286	1	.....	1	.....
C.E. 355 Strength of Materials.....	260	2	3*	2	3*
C.E. 357 Materials Testing.....	260	.....	3*	.....	3*
Summer Reading.....	.....	.....	.....	.....	.....

FOURTH YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
†Essay.....	.....	.....	.....	.....	.....
E.E. 451 Electrical Engineering.....	.....	2	2	2	2
Chem. 407 Physical Chemistry.....	257	2	3	2	3
Chem. 450 Chemical Engineering Theory.....	257	3	.....	3	.....
Chem. 451 Chemical Engineering Laboratory and Problems.....	257	.....	6	.....	6
Chem. 452 Thesis: research <i>or</i> designing of chemical engineering equipment.....	.....	.....	6	.....	6
Chem. 458 Electro-chemistry.....	257	2	3	2	3
Chem. 459 Adv. Organic.....	257	2	3	2	3

*Alternate weeks.

†Optional.

NOTE. For courses for graduate students, see page 257.

3. Civil Engineering

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.

THIRD YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay					
C.E. 350 Surveying Field Work.....	259	At end of 2nd Term, 2nd Year			
C.E. 351 Surveying.....	259	2		2	
C.E. 352 Mapping.....	260		3		
C.E. 353 Drawing.....	260				3
C.E. 355 Strength of Materials.....	260	2	3*	2	3*
C.E. 356 Materials Testing.....	260	1	3*		3*
C.E. 361 Hydraulics.....	260	1	3	1	3
C.E. 365 Foundations—Masonry.....	261	2	3		
C.E. 366 Earth Pressure.....	261			2	
C.E. 370 Structural Design 1.....	261	2	3	2	3
C.E. 375 Railways.....	261	2		2	
C.E. 380 Seminar.....	261	1		1	
M.E. 371 Applied Thermodynamics.....	274	2	3	2	3

FOURTH YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay					
C.E. 380 Seminar.....	261	1		1	
C.E. 450 Surveying Field Work.....	261	At end of 2nd Term, 3rd Year			
C.E. 455 Theory of Structures.....	262	2	6		
C.E. 460 Structural Design 2.....	262	2	3	2	6
C.E. 461 Reinforced Concrete Design.....	262	2	3		4
C.E. 465 Municipal Engineering.....	262	2	2	2	2
C.E. 466 Water Power Development.....	263			2	2
C.E. 470 Highway Engineering.....	263	2		2	2
C.E. 475 Engineering Economics.....	263	1	1	1	1
C.E. 476 Law—Contracts.....	264	1		1	
E.E. 451 Electrical Engineering.....	277	2	2	2	2

*Alternate weeks.

NOTE. For course for graduate students, see page 264.

4. Electrical Engineering

Electrical Engineering comprises the broad fields of electric power and electronics. In electric power emphasis is placed upon electrical machines, power generation, distribution, and utilization; while electronics is concerned mainly with communications, measurement, and control; but the fundamental principles underlying these two fields form a unified body of knowledge.

The course in Electrical Engineering is designed to enable students to obtain a knowledge of these fundamental principles and, to some extent, their applications in both the power and electronic fields. Electric power is obtained chiefly by means of steam, hydraulic turbines, or internal combustion engines, and the design of electrical apparatus involves the characteristics of materials. Courses in these allied subjects are therefore included.

THIRD YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay .....	.....	.....	.....	.....	.....
M.E. 352 Mechanical Drawing	273	At end of 2nd Term, 2nd Year			
Math. 350 Differential Equations	272	3	.....	3	.....
C.E. 355 Strength of Materials	260	2	3*	2	3*
C.E. 357 Materials Testing	260	.....	3*	.....	3*
C.E. 360 Hydraulics	260	1	2	1	2
M.E. 358 Machine Shop Practice	273	.....	3*	.....	3*
M.E. 365 Dynamics of Machines	274	2	.....	2	.....
M.E. 375 Applied Thermodynamics	274	3	3	3	3
E.E. 353 D.C. Machines	277	2	.....	1	.....
E.E. 355 A.C. Circuits	277	1	.....	2	.....
E.E. 356 Electrical Engineering Laboratory	277	.....	3	.....	3
E.E. 357 Electronics and Electron Tubes	277	2	2*	2	2*

FOURTH YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay .....	.....	.....	.....	.....	.....
M.E. 467 Mechanical Design	275	2	.....	2	.....
C.E. 475 Engineering Economics	263	1	1	1	1
E.E. 457 Principles of A.C. Machines	278	3	6	3	6
E.E. 459 Electrical Machine Design	278	1	3	1	3
E.E. 461 Illuminating Engineering	278	2	.....	.....	2
E.E. 463 Electric Power Transmission	278	2	2	2	2
E.E. 465 Electrical Communication	279	2	3	2	3
E.E. 467 Instruments and Measurements	279	2	.....	2	.....

5. Forest Engineering and Forestry

Two main avenues of approach are open to students interested in forestry as a profession: Forest Engineering, in which the main

*Alternate weeks.

NOTE. For course for graduate students, see page 279.

stress is placed upon the engineering phases of the extraction and conversion of forest products; and General Forestry, which deals with the growing, improving, and administering of forest stands. In addition both options deal with the manufacturing and marketing phases of the forest industries.

In the General Forestry (B.S.F.) course, the student has the opportunity of following one of three main branches of forestry: Technical Forestry, which includes advanced courses in silviculture, mensuration, and forest management; Forest Business Administration, in which courses in accounting, commercial law, marketing, business finance, and industrial management are superimposed upon his basic forestry training; and Chemical Wood Products, in which the student receives a thorough training in chemistry as well as forestry and will be well fitted to carry on graduate work in the chemical utilization of wood.

Forest Engineering

The curriculum for the first two years in *Forest Engineering* is shown on page 230.

THIRD YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....		.....	.....	.....	.....
C.E. 352 Mapping.....	260	.....	3	.....	.....
C.E. 355 Strength of Materials.....	260	2	3*	2	3*
C.E. 356 Materials Testing.....	260	1	3*	.....	3*
C.E. 360 Hydraulics.....	260	1	2	1	2
C.E. 370 Structural Design I.....	261	2	3	2	3
For. 251 Fire Protection.....	265	2	.....	2	.....
For. 260 Forest Surveying and Mapping.....	265	2	.....	2	.....
For. 270 Wood Technology.....	265	1	.....	1	.....
For. 350 Silviculture.....	265	2	3	2	3
For. 360 Mensuration.....	266	2	3	2	3
Bot. 301 Dendrology.....	255	1	2	1	2

FOURTH YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....		.....	.....	.....	.....
For. 361 Management.....	266	2	3	2	3
For. 370 Wood Technology.....	266	1	3	1	3
For. 380 History of Forestry.....	266	2	.....	2	.....
For. 453 Seminar.....	267	1	.....	1	.....
For. 471 General Logging.....	267	2	.....	2	.....
For. 472 Logging Engineering.....	267	2	3	2	3
For. 473 Milling and Marketing.....	267	2	3*	2	3*
For. 474 Lumber Grading.....	267	.....	.....	.....	3
For. 475 Forest Products.....	268	1	3*	1	3*
For. 481 Forest Economics.....	268	3	.....	3	.....

*Alternate weeks.

NOTE. A four weeks' field trip to the University Forest, Haney, required immediately following spring examinations at the end of the Third Year.

Forestry (B.S.F. Course)

FIRST YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Chem. 200 Qualitative and Quantitative Analysis.....	138	1	6	1	6
Econ. 200 Principles of Economics.....	152	3	.....	3	.....
Phys. 100 Elementary Physics.....	285	3	2	3	2
Math. 203 Forestry Mathematics.....	272	3	.....	3	.....
Bot. 200 General.....	255	2	2	2	2
English 150 Composition.....	264	2	.....	2	.....
For. 150 General Forestry.....	265	2	.....	2	.....
For. 160 Field Work.....	265	.....	3	.....	3

SECOND YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Bot. 301 Dendrology.....	255	1	2	1	2
Bot. 334 Plant Physiology.....	256	2	4	2	4
For. 250 Silvics.....	265	1	2	1	2
For. 251 Fire Protection.....	265	2	.....	2	.....
For. 260 Surveying and Mapping.....	265	2	.....	2	.....
For. 270 Wood Technology.....	265	1	.....	1	.....
* { Geol. 201 General.....	270	2	.....	2	.....
{ Geol. 202 Laboratory.....	270	.....	2	.....	2
*Chem. 300 Organic Chemistry.....	256	2	4	2	4
*Bot. 303 Systematic Botany.....	255	2	2	1	4
*Zool. 200 General.....	286	2	2	2	2

THIRD YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
For. 350 Silviculture.....	265	2	3	2	3
For. 353 Seminar.....	266	1	.....	1	.....
For. 360 Mensuration.....	266	2	3	2	3
For. 361 Management.....	266	2	3	2	3
For. 370 Technology.....	266	1	3	1	3
For. 380 History of Forestry.....	266	2	.....	2	.....
Bot. 317 Forest Pathology.....	256	.....	.....	2	2
Zool. 402 Forest Entomology.....	286	2	2	.....	.....
†Comm. 251 Accounting.....	264	2	2	2	2
§Chem. 304 Theoretical Chemistry.....	256	2	3	2	3

*One of the four courses marked must be taken in the Second Year. For students entering Chemical Wood Products Option, Chemistry 300 is required.

†Not required in Chemical Wood Products Option.

§Required in Chemical Wood Products only.

NOTE. A four weeks' field trip to the University Forest at Haney, required immediately following spring examinations at the end of the Second and Third Years.

FOURTH YEAR (Technical Forestry Option)

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
For. 450 Advanced Silviculture.....	266	1	3	1	3
For. 453 Seminar.....	267	1	.....	1	.....
For. 460 Advanced Mensuration.....	267	1	3	1	3
For. 461 Advanced Management.....	267	1	3	1	3
For. 471 General Logging.....	267	2	.....	2	.....
For. 473 Milling and Marketing.....	267	2	3*	2	3*
For. 474 Lumber Grading.....	267	.....	.....	.....	3
For. 475 Forest Products.....	268	1	3*	1	3*
For. 481 Forest Economics.....	268	3	.....	3	.....
Bot. 320 Forest Ecology.....	256	2	2	2	2

FOURTH YEAR (Forest Business Administration Option)

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
For. 453 Seminar.....	267	1	.....	1	.....
For. 471 General Logging.....	267	2	.....	2	.....
For. 473 Milling and Marketing.....	267	2	3*	2	3*
For. 474 Lumber Grading.....	267	.....	.....	.....	3
For. 475 Forest Products.....	268	1	3*	1	3*
For. 481 Forest Economics.....	268	3	.....	3	.....
Comm. 261 Marketing.....	264	3	.....	3	.....
Comm. 371 Business Finance.....	264	3	.....	3	.....
Comm. 381 Industrial Management.....	264	3	6	3	6
Comm. 391 Commercial Law.....	264	3	.....	3	.....

FOURTH YEAR (Chemical Wood Products Option)

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
For. 471 General Logging.....	267	2	.....	2	.....
For. 473 Milling and Marketing.....	267	2	3*	2	3*
For. 475 Forest Products.....	268	1	3*	1	3*
For. 481 Forest Economics.....	268	3	.....	3	.....
Chem. 350 Chemical Engineering.....	256	2	.....	2	.....
Chem. 407 Physical Chemistry.....	257	2	3	2	3
Chem. 459 Advanced Organic Chemistry.....	257	2	3	2	3

NOTICE FOR B.S.F. COURSE STUDENTS

The combined courses in Botany and Forestry, Commerce and Forestry, and Economics and Forestry were discontinued at the close of the 1945-46 session. However, students who have already entered these courses and who still require either one or two years' further work to complete the courses may do so by fulfilling the requirements set forth on pages 322 and 323 of the 1945-46 Calendar of the University.

*Alternate weeks.

6. Geological Engineering

This curriculum 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.

THIRD YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....					
C.E. 350 Surveying.....	259	At end of 2nd Term, 2nd Year			
Biol. 100 Introductory Biology.....	255	2	2	2	2
C.E. 352 Mapping.....	260				3
C.E. 360 Hydraulics.....	260	1	2	1	2
Min. 350 Principles of Mining.....	279	2		2	
Met. 350 Chemical Metallurgy.....	280	2	3	2	3
Met. 351 Physical Metallurgy.....	280	2		1	
M.D. 350 Principles of Mineral Dressing.....	282	2	4	2	
Geol. 302 Mineralogy.....	270	2		2	
Geol. 303 Laboratory.....	270		2		2
Geol. 304 Structural.....	270	2		2	
Geol. 305 Theoretical and Historical Geology.....	270	2		2	
Geol. 308 Fuels and Structural Materials.....	270	3			
*Geol. 410 Field Geology.....	270				2

FOURTH YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
C.E. 475 Engineering Economics.....	263	1	1	1	1
Min. 450 Principles of Mining.....	279	2		2	
Geol. 406 Palaeontology.....	270	2	2	2	2
Geol. 407 Petrography.....	270	2	4	2	4
†Geol. 408 Mineral Deposits.....	270	3		3	
Geol. 409 Mineralography.....	270		3		3
Geol. 411 Regional Geology.....	270	3		3	
Geol. 412 Geomorphology.....	270	2	2	2	2
Geol. 420 Thesis.....			4		5

*Includes 10 days' field work after lectures close in the Second Term.

†A special course on fuels and non-metals, in lieu of Geology 308, will be provided for Geological Engineers by arrangement during the session 1946-47.

NOTE. For courses for graduate students, see page 270.

7. Mechanical Engineering

The curriculum 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.

Although fundamentally general in character, the course embodies the design of prime movers, mechanical and hydraulic machinery design, and the testing of engines, fuels, and boilers. It thus gives sufficient specialized training in mechanical engineering to enable students to enter the fields of either design or research should they so desire.

Students following this course are also given a general course in the fundamentals of electrical engineering.

THIRD YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....	.....	.....	.....	.....	.....
M.E. 352 Mechanical Drawing.....	273	At end of 2nd Term, 2nd Year			
Math. 350 Differential Equations.....	272	3	.....	3	.....
C.E. 355 Strength of Materials.....	260	2	3*	2	3*
C.E. 357 Materials Testing.....	260	.....	3*	.....	3*
C.E. 360 Hydraulics.....	260	1	2	1	2
E.E. 351 Electrical Engineering.....	277	2	3	2	3
M.E. 356 Machine Shop Practice.....	273	.....	2	.....	2
M.E. 361 Kinematics of Machines.....	273	3	2	.....	.....
M.E. 363 Machine Design 1.....	273	.....	.....	3	2
M.E. 365 Dynamics of Machines.....	274	2	.....	2	.....
M.E. 373 Applied Thermodynamics.....	274	3	3	3	3

FOURTH YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....	.....	.....	.....	.....	.....
C.E. 475 Engineering Economics.....	263	1	1	1	1
E.E. 453 A.C. Machines.....	278	2	3	2	3
Met. 351 Physical Metallurgy.....	280	2	.....	1	.....
Met. 352 Metallography.....	280	.....	.....	.....	3
M.E. 456 Machine Shop Practice.....	274	.....	2	.....	2
M.E. 463 Machine Design 2.....	274	2	3	2	3
M.E. 465 Applied Mechanics.....	274	.....	2	2	2
M.E. 471 Prime Movers.....	275	3	.....	3	.....
M.E. 472 Mechanical Engineering Laboratory.....	275	.....	3	.....	3
† M.E. 475 Power Plant Design.....	276	2	3	.....	.....
† M.E. 477 Heating, Ventilating, Air Conditioning and Refrigeration.....	276	2	.....	2	3
† M.E. 481 Aeronautics.....	276	3	3	3	3

*Alternate weeks.

†Students in the Fourth Year must select as an option either M.E. 475 and M.E. 477 or M.E. 481.

NOTE. For course for graduate students, see page 276.

8. Metallurgical Engineering

The curriculum is designed to give the student a thorough knowledge of the basic principles essential in the field of metallurgical engineering. In both Third and Fourth Years stress is laid upon subjects which provide a sound general training such as mathematics, strength of materials, hydraulics, physics, thermodynamics, applied physical chemistry, and electricity.

Other courses in the specific field of metallurgy are included to prepare the student for a professional career in metal production and fabrication in either operation or research.

In the Fourth Year an opportunity is offered for some degree of specialization in one of the principal divisions of the field: ore reduction, mineral dressing, or metal fabrication. Good facilities are available for graduate study in all three fields.

THIRD YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....		.....	.....	.....	.....
M.E. 352 Mechanical Drawing.....	273	At end of 2nd Term, 2nd Year			
Math. 350 Differential Equations	272	3	.....	3	.....
Geol. 302 Mineralogy.....	270	2	.....	2	.....
Geol. 303 Laboratory.....	270	.....	2	.....	2
C.E. 355 Strength of Materials.....	260	2	3*	2	3*
C.E. 357 Materials Testing.....	260	.....	3*	.....	3*
C.E. 360 Hydraulics.....	260	1	2	1	2
M.E. 371 Applied Thermodynamics.....	274	2	.....	2	.....
Min. 350 Principles of Mining.....	279	2	.....	2	.....
M.D. 350 Principles of Mineral Dressing.....	282	2	4	2	.....
Met. 350 Chemical Metallurgy.....	280	2	3	2	3
Met. 351 Physical Metallurgy.....	280	2	.....	1	.....
Met. 352 Metallography.....	280	.....	.....	.....	3

FOURTH YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....		.....	.....	.....	.....
Math. 350 Differential Equations.....	272	3	.....	3	.....
†Geol. 409 Mineralography.....	270	.....	3	.....	3
Physics 460 Metallurgical Physics.....	286	2	.....	2	.....
C.E. 475 Engineering Economics.....	263	1	1	1	1
M.D. 450 Mineral Dressing.....	282	2	3	2	.....
Met. 450 Theoretical Metallurgy.....	281	2	3	2	3
Met. 451 Applied Chemical Metallurgy.....	281	2	.....	2	.....
Met. 452 Physical Metallurgy.....	281	2	.....	2	.....
Met. 453 Metallurgical Calculations.....	281	.....	2	.....	2
Met. 454 Laboratory and Research Methods.....	281	.....	3	.....	6
§Met. 456 Metallography.....	282	.....	3	.....	3
Met. 457 Plant Management.....	282	1	.....	1	.....

*Alternate weeks. §For students taking Physical Metallurgy option.

†For students taking Chemical Metallurgy or Mineral Dressing options.

NOTE. For course for graduate students, see page 282.

9. Mining Engineering

Although technologic and other advances within the mineral industries are continually enlarging the field of interest of the mining engineer and increasing the tendency toward specialization, few students know in which branch of the profession their future careers may lie; therefore the course in mining engineering is intended to give the student a broad knowledge of the fundamental technical, economic, and social principles involved, to serve as a foundation for advancement in any branch of the work that he may enter after graduation.

Emphasis is placed principally on metal mining, but some attention is devoted to coal mining in order to give an insight into its methods and problems and foster an interest in that important branch of the mining industry.

THIRD YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....	.....	.....	.....	.....	.....
C.E. 350 Surveying.....	259	At end of 2nd Term, 2nd Year			
Geol. 302 Mineralogy.....	270	2	.....	2	.....
Geol. 303 Laboratory.....	270	.....	2	.....	2
Geol. 304 Structural Geology.....	270	2	.....	2	.....
C.E. 352 Mapping.....	260	.....	.....	.....	3
C.E. 355 Strength of Materials.....	260	2	3*	2	3*
C.E. 357 Materials Testing.....	260	.....	3*	.....	3*
C.E. 360 Hydraulics.....	260	1	2	1	2
M.E. 371 Applied Thermodynamics.....	274	2	3	2	3
Met. 350 Chemical Metallurgy.....	280	2	3	2	3
Met. 351 Physical Metallurgy.....	280	2	.....	1	.....
M.D. 350 Principles of Mineral Dressing.....	282	2	4	2	.....
Min. 350 Principles of Mining.....	279	2	.....	2	.....

FOURTH YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Essay.....	.....	.....	.....	.....	.....
Geol. 304 Structural Geology.....	270	2	.....	2	.....
Geol. 403 Petrology.....	270	2	.....	2	.....
Geol. 408 Mineral Deposits.....	270	3	.....	3	.....
C.E. 370 Structural Design 1.....	261	2	3	2	3
C.E. 475 Engineering Economics.....	263	1	1	1	1
Met. 457 Plant Management.....	282	1	.....	1	.....
M.D. 450 Mineral Dressing.....	282	2	3	2	.....
Min. 450 Principles of Mining.....	279	2	.....	2	.....
Min. 451 Mining Methods.....	280	3	.....	3	.....
Min. 452 Mine Plant.....	280	2	.....	.....	.....
Min. 454 Problems and Reports.....	280	.....	2	.....	6
Min. 490 Mine Surveying.....	280	.....	.....	1	.....

*Alternate weeks.

10. Engineering Physics

This curriculum is designed to afford a training in mathematics and physics, which will enable an engineering graduate either to enter the new industrial field of applied physics or to proceed with graduate studies leading to an industrial or academic career in the field of research. It should be of particular value to those who desire to enter governmental or industrial research laboratories.

Recent technical developments in acoustics, optics, spectroscopy, electronics, radar, x-rays, and atomic energy offer many opportunities to engineering graduates with a thorough knowledge of applied physics.

This course of studies will be open only to students who obtain the consent of the Head of the Department of Physics and the Dean of the Faculty of Applied Science.

Fourth Year course will not be given in 1946-47.

THIRD YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
M.E. 352 Mechanical Drawing	273	At end of 2nd Term, 2nd Year			
C.E. 355 Strength of Materials	260	2	3*	2	3*
C.E. 357 Materials Testing	260	.....	3*	.....	3*
Math. 301 Mathematical Analysis	272	2	.....	2	.....
Math. 302 Differential Equations	272	3	.....	3	.....
Math. 303 Analytical Geometry	272	3	.....	3	.....
Phys. 301 Theoretical Mechanics	286	2	.....	2	.....
Phys. 302 Mathematical Physics	286	2	.....	2	.....
Phys. 303 Physical Optics	286	2	6	2	6
and one of the following:					
Chem. 300 Organic Chemistry	256	2	3	2	3
Chem. 350 Chemical Engineering	256	2	.....	2	.....
Geol. 304 Structural Geology	270	2	.....	2	.....
M.E. 371 Applied Thermodynamics	274	2	3	2	3
{ Met. 351 Physical Metallurgy	280	2	.....	1	.....
{ Met. 352 Metallography	280	.....	.....	.....	3

FOURTH YEAR

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
E.E. 465 Electrical Communications .....	.....	2	3	2	3
Math. 401 Advanced Calculus	272	3	.....	3	.....
Phys. 401 Electricity and Magnetism	286	2	.....	2	.....
Phys. 402 Atomic Structure	286	2	.....	2	.....
Phys. 403 Kinetic Theory of Gases	286	2	.....	2	.....
Phys. 404 Thermodynamics	286	1	.....	1	.....
Phys. 409 Experimental Physics	286	.....	6	.....	6
and one of the following:					
Chem. 450 Chem. Engineering					
Theory	257	3	.....	3	.....
Chem. 459 Advanced Organic	257	2	3	2	3
Geol. 403 Petrology	270	2	.....	2	.....
M.E. 477 Heating, Ventilating	276	2	.....	2	3
M.E. 481 Aeronautics	276	3	3	3	3
{ Met. 452 Physical Metallurgy	281	2	.....	2	.....
{ Met. 456 Adv. Metallography	282	.....	3	.....	3

*Alternate weeks.

11. 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.

Included in the regular programme are the following courses:

Nursing A. A combined university and hospital course leading to the degree of B.A.Sc. (Nursing) and to a Diploma in Nursing from the Vancouver General Hospital School of Nursing, which is affiliated with the University for the purpose of providing the professional part of the course. (See below.)

Nursing AA. A double degree course one year longer than Nursing A leading to the degrees of B.A. and B.A.Sc. (Nursing) as well as to a Diploma in Nursing from the Vancouver General Hospital School of Nursing. (See page 247 and *Double Courses*, page 325.)

Nursing B. A course for graduate nurses to prepare them for staff positions in public health nursing organizations. This course consists of one year of academic study supplemented by appropriate field work, and leads to a certificate in Public Health Nursing. (See page 248.)

Nursing C. A course for graduate nurses to prepare them for teaching and supervisory positions in schools of nursing. This course consists of one year of academic study supplemented by appropriate field work, and leads to a certificate in Teaching and Supervision in Schools of Nursing. (See page 248.)

Nursing D. A course for graduate nurses who wish to qualify for the degree of B.A.Sc. (Nursing). (See pages 249-250.)

Students of all courses in Nursing are subject to the general University regulations, and to special regulations of the Faculty of Applied Science. (See page 251.)

All regulations are subject to change from year to year, and subjects may be modified during the year as the Faculty may deem advisable.

Degree Courses in Nursing Nursing A

This combined university and hospital course assures to the student the educational and cultural advantages available at the University; professional training built on a sound scientific foundation; and preparation for a specialized field of nursing. The course is given by the University in collaboration with the school of nursing of the Vancouver General Hospital, the only hospital school which

has to date signified willingness to provide the professional part of the course and has received the approval of the University Senate for that purpose.

For admission requirements see page 226. No student with defective standing will be admitted to the First Year in Nursing.

As registration is limited, application should be made on or before August 15th. Students will be notified of the acceptance or rejection of their applications.

Applicants are also required:

1. To be eighteen years of age;
2. To satisfy the Department of Nursing and Health that they are personally fitted for the branches of nursing to which the course leads;
3. To have met the entrance requirements of the Vancouver General Hospital School of Nursing.

The course consists of three parts, each of which is described briefly.

I. One year of academic work at the University, which gives the student an introduction to general cultural subjects and a foundation in the sciences underlying the practice of nursing.

FIRST YEAR NURSING

Students register in the Faculty of Applied Science, for the following courses:

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
English 200.....	264	3	.....	3	.....
Zoology 200.....	286	2	2	2	2
Physics 90 or Physics 100.....	285	3	2	3	2
Psychology 101.....	202	3	.....	3	.....
Nursing 151 History of Nursing.....	283	1	.....	1	.....
Nursing 152 Elementary Biochemistry.....	283	.....	.....	1	1
Nursing 153 Bacteriology in Relation to Health and Disease.....	283	1	4	1	4

II. Professional course of thirty-two months at the Vancouver General Hospital School of Nursing.*

Following completion of the two academic or pre-clinical years (outlined above) the student enters the Vancouver General Hospital School of Nursing for her professional course. This course is planned to afford a wide experience and training in the care of the sick, and to develop the skill, powers of observation, and judgment

*Candidates are advised to write to the Director, School of Nursing, Vancouver General Hospital, for the School Calendar.

necessary to the efficient practice of nursing. It includes a study of community health problems as well as those of the hospital.

Students enter upon this part of their course along with the regular hospital students, and during the first four months (the probationary period) undergo a rigid examination as to fitness in physique, temperament, and character. This trial period helps the student to decide whether she feels herself personally fitted or inclined to proceed with the course. It also gives the hospital school of nursing an opportunity to judge the student's suitability for the profession of nursing. The hospital school of nursing reserves the right to reject candidates who do not meet required standards.

During the professional part of the course students are under the direction of the hospital school of nursing and live in residence there, receiving:

- (1) full maintenance;
- (2) a yearly vacation;
- (3) a small monetary allowance as designated by the hospital.

In order to receive University credit for work done at this time, students must register at the University each year and pay the nominal fee required. (See footnote on page 36.)

Following is an outline of the course provided by the Vancouver General Hospital School of Nursing.

1. Instruction is given by qualified nurse teachers and by members of the medical staff in:

- Nursing Ethics
- Principles and Practice of Nursing
- Anatomy and Physiology
- Health Education
- Psychology
- Normal Nutrition and Diet Therapy
(including experience in the Diet Kitchen)
- Pharmacology and Therapeutics
- Urinalysis
- Introduction to: Anaesthesia
 - Physiotherapy
 - X-ray
- Community Health and Social Needs
(including experience with the Victorian
Order of Nurses)

2. Instruction and supervised experience are also provided in the following hospital departments:

- Medical
- Communicable Diseases (including Tuberculosis and Venereal Diseases)

Surgical, including Operating Room
Eye, Ear, Nose, and Throat
Orthopedic
Gynecological
Infants and Children
Psychiatric
Out-patient

While the preventive and social aspects of nursing are stressed throughout, they are given particular emphasis during experience in the Out-patient Department and with the Victorian Order of Nurses.

The hospital programme is subject to change at the discretion of the hospital in consultation with the Department of Nursing and Health at the University.

Upon satisfactory completion of this part of the course the student is awarded a diploma as a graduate nurse of the Vancouver General Hospital School of Nursing. She also writes the provincial Registered Nurse examinations, and if successful becomes qualified to practise as a Registered Nurse in British Columbia.

Students who, during their period in the hospital school of nursing, have lost time because of illness or for other reasons, may be required to postpone the final academic year at the University. Students who have gained some experience as graduate nurses before returning to University usually find themselves better equipped to benefit from the specialized course.

III. One year of specialization.

For the final year of her course the student elects either Nursing B (see page 248) or Nursing C (see page 248), and upon its satisfactory completion she is awarded the degree of B.A.Sc. (Nursing). The Department of Nursing and Health must be notified by each student of her choice before July 15th of the year in which the student plans to return to the University.

Nursing AA

The University also offers a double degree course leading to the degrees of B.A. and B.A.Sc. (Nursing). This course requires two years (instead of one) of academic work at the University before entering the hospital school of nursing, but is otherwise similar to Nursing A. (See page 244.) Students receive the degree of B.A. upon completion of their course at the hospital, and the degree of B.A.Sc. (Nursing) when Nursing B or Nursing C has been completed.

The double degree course is advised for

(1) students who wish to enrich their background of knowledge by an additional year of university studies, and who are anxious to obtain the B.A. degree; and

(2) students who, at the end of the first year of the combined course, would still be too young to enter the hospital school of nursing.

Nursing B and Nursing C (Degree and Certificate Courses)

Degree Courses

Students taking Nursing B or Nursing C as part of the degree course must obtain at least 65 per cent. marks on the aggregate with not less than 50 per cent. in any one subject.

NURSING B (PUBLIC HEALTH NURSING)

Subject	For details see page :	Total hours of lectures
Nursing 454 Preventive Medicine.....	283	45
Nursing 455 Mental Hygiene.....	283	18
Nursing 457 Infant and Child Hygiene.....	283	18
Nursing 459 Sanitation.....	284	9
Nursing 461 Public Health Organization.....	284	18
Nursing 462 Vital Statistics.....	284	18
Nursing 463 Principles of Public Health Nursing.....	284	36
Nursing 464 Practice of Public Health Nursing.....	284	18
Nursing 466 Methods in Health Teaching.....	284	36
Nursing 467 Current Nursing Problems.....	284	18
Nursing 471 Social Case Work.....	285	18
Nursing 477 Sociology.....	285	18
Nursing 481 Principles and Methods of Teaching.....	285	18
Nursing 485 Essay.....	.....	.....
Nursing 486 Field Work.....	.....	.....

NURSING C (TEACHING AND SUPERVISION IN SCHOOLS OF NURSING)

Subject	For details see page :	Total hours of lectures
Nursing 454 Preventive Medicine.....	283	45
Nursing 455 Mental Hygiene.....	283	18
Nursing 467 Current Nursing Problems.....	284	18
Nursing 468 Teaching in Schools of Nursing.....	284	36
Nursing 469 Principles of Supervision in Schools of Nursing.....	285	36
Nursing 477 Sociology.....	285	18
Nursing 481 Principles and Methods of Teaching.....	285	18
Electives from Nursing B, from Education, or from related Science courses, to make up three units.....	.....	.....
Nursing 485 Essay.....	285	.....
Nursing 487 Field Work.....	285	.....

Certificate Courses

Nursing B and Nursing C are available as Certificate Courses to graduate nurses who possess the required qualifications.

1. *General education.* All applicants must fulfil the educational requirement of University Entrance. An official transcript of the high school education record should be submitted along with the application.

2. *Professional education.* Graduation from a recognized school of nursing. Applicants must satisfy the department that they have received adequate instruction and experience in the nursing care of communicable diseases and of diseases of infancy and childhood.

3. *Professional experience.* Applicants who have had one or two years of satisfactory nursing experience derive greater benefit from the courses than those who come directly from the school of nursing. Applicants for admission to Nursing C are required to have had at least one year of satisfactory experience as graduate nurses.

4. *Health.* A certificate of good health signed by a practising physician and a report on an X-ray of the chest (taken within the preceding three months) are required of all applicants.

5. *Ability to drive a car.* Applicants for admission to Nursing B are advised to learn to drive a motor car and to secure their driver's licence. Ability to drive well is often a deciding factor in securing a position.

6. *Personal fitness.* Because it is very important that applicants have the necessary personal qualifications for their proposed work, and also because facilities for field work limit the number of students who can be enrolled, the Department reserves the right of selection. A personal interview is required whenever possible.

Applications for admission to the Certificate Courses should be submitted before July 1st. The requisite form may be obtained on request from

Department of Nursing and Health,
The University of British Columbia,
Vancouver, B. C.

Nursing D

This is a course for graduate nurses who are eligible for admission to the University and who desire to qualify for the degree of B.A.Sc. (Nursing).

Admission requirements:

1. The applicant's professional preparation shall be considered by the Department to be a satisfactory alternative to the professional course included in Nursing A.

2. The applicant's record, both academic and professional, shall indicate the probability of success in her chosen field.

Course requirements:

Three years of academic work at the University.

1. The applicant shall complete satisfactorily the work of the First Year of the Faculty of Arts and Science (see page 85) or Senior Matriculation.

2. Candidates will register in the Faculty of Applied Science and take the following courses as First Year students in Nursing D:

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
English 205.....	264	3	.....	3	.....
Psychology 101.....	202	3	.....	3	.....
Nursing 152 Elementary Biochemistry.....	283	.....	.....	1	1
Nursing 153 Bacteriology in Relation to Health and Disease.....	283	1	4	1	4

Six additional units to be selected, on the basis of student interest and needs, after consultation with the Department.

3. Nursing B or Nursing C as outlined on page 248.

Those candidates who already hold a certificate in Nursing B or Nursing C must, except in very unusual circumstances, meet the requirements listed under (2) above by attendance at a winter session within a period of five years following completion of the certificate course.

COURSES LEADING TO THE DEGREE OF M.A.Sc.

CHEMICAL ENGINEERING

Required courses: Chem. 530, *Research Conference*, and a group of courses selected from the following:

Chem. 511 *Physical Organic Chemistry*

Chem. 512 *Colloid Chemistry*

Chem. 517 *Chemical Thermodynamics*

Chem. 518 *Advanced Inorganic Chemistry*

Chem. 521 *Chemical Kinetics*

Chem. 522 *Surface Chemistry*

Electives: Suitable courses to be selected, as approved by the Department.

CIVIL ENGINEERING

Required course: C.E. 550, *Advanced Structural Analysis*.

ELECTRICAL ENGINEERING

Required course: E.E. 501, *Electromagnetic Theory and Electronics*.

GEOLOGICAL ENGINEERING

Economic Geology.—*Required subjects:* Geology 526, and three units from Geology 520, 524, and 525.

Mineralography.—*Required subjects:* Geology 524, and three units from the following: Geology 523, 525, 526.

Mineralogy.—*Required subjects:* Geology 523, and three units from Geology 520, 524, 525, 526.

Palaeontology.—*Required subjects:* Geology 521, and three units from Geology 520, Biology 400, Zoology 200, 300, and 301.

Petrology.—*Required subjects:* Geology 525, and three units selected from Geology 523, 524, and 526.

Stratigraphy.—*Required subjects:* Geology 520, and three units selected from Geology 521, 525, and Agronomy 415.

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, English, Modern Languages, Mathematics, and Economics.

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

MECHANICAL ENGINEERING

Required course: M.E. 563, *Applied Theory of Elasticity.*

METALLURGICAL ENGINEERING

Mineral Dressing.—*Required course:* Mineral Dressing 550, and thesis.

Electives: Suitable courses to be selected, as approved by the Department.

Metallurgy.—*Required course:* Metallurgy 551, and thesis.

Electives: Suitable courses to be selected in relation to the specific option undertaken, as approved by the Department.

REGULATIONS

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.

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. (Three typewritten copies of each thesis, together with an abstract approved by the department concerned, 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 42.

EXAMINATIONS AND ADVANCEMENT

1. Examinations are held in December and in April. December examinations will be held in all subjects of the First and Second Years, and are obligatory for all students of these. December examinations in subjects of the Third and Fourth 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, Hut No. 2, near the Auditorium Building, who may furnish the necessary certificate.

2. Candidates, in order to pass, must obtain at least 50 per cent. in each subject; in courses which comprise both lecture and laboratory work students will be required to pass in *both* the written examinations *and* laboratory work before standing in the subject will be granted. 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. 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 First 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 43), must be in the hands of the Registrar by August 15th.

*Special permission of the Faculty is granted only under exceptional circumstances, such as illness, or as outlined on page 229.

6. No student may enter the Third 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 Second 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 C.E. 350 in the spring may take C.E. 352 during the following session. A student repeating his year need not repeat the laboratory portion of certain courses providing he has obtained a standing in the laboratory work which is acceptable to the head of the department in which the course is given.

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

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

11. Any student whose academic record, as determined by the tests and examinations of the First Term, is found to be unsatisfactory, may, upon the recommendation of the Faculty, be required by the Senate to discontinue attendance at the University for the remainder of the session. Such a student will not be re-admitted to the University as long as any supplemental examinations are outstanding.

12. Term essays and examination papers may be refused a passing mark if they are noticeably deficient in English.

13. Honours will be granted in any one of the 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.

*Special permission of the Faculty is granted only under exceptional circumstances, such as illness, or as outlined on page 229.

DEPARTMENTS IN APPLIED SCIENCE

NOTE. The following subjects may be modified during the year as the Senate may deem advisable.

Agricultural Engineering

350. *Agricultural Engineering*.—A study of the more important principles involved in the application of engineering to problems in agriculture.

450. *Agricultural Engineering*.—(To be arranged for 1947-48.)

451. *Agricultural Engineering*.—(To be arranged for 1947-48.)

Agriculture

100. *General Agriculture*.—As in Agriculture. (See page 297.)

301. *Agricultural Economics*.—As in Agriculture. (See page 297.)

Agronomy

211. *Soils*.—As in Agriculture. (See page 299.)

313. *Drainage and Irrigation*.—As in Agriculture. (See page 299.)

314. *Soil Conservation*.—As in Agriculture. (See page 300.)

Department of Biology and Botany

Biology

100 [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.

300 [2]. *Principles of Genetics*.—As in Arts. (See page 131.)

310 [4]. *General Biology*.—As in Arts. (See page 131.)

400 [3]. *General Physiology*.—As in Arts. (See page 132.)

401 [5]. *Basic Physiology*.—As in Arts. (See page 132.)

Botany

200 [1(a)]. *General Botany*.—As in Arts. (See page 132.)

301 [5(b)]. *Dendrology*.—As in Arts. (See page 133.)

303 [5(a) & (c)]. *Economic Flora and Descriptive Taxonomy*.—For students in the B.S.F. course. The course comprises Botany 300 and Botany 302. For details, see page 133.

317 [6(b)]. *Forest Pathology*.—As in Arts. (See page 135.)

320 [7(a)]. *Forest Ecology and Geography*.—As in Arts. (See page 135.)

334 [3(a) & (c)]. *Plant Physiology*.—For students in the B.S.F. course. The course comprises Botany 330 and Botany 332. For details, see pages 135 and 136.

Department of Chemistry

150 [2(a)]. *Qualitative Analysis*.—During the first six weeks of the term an additional lecture may be substituted for a part of the laboratory work.

References: Reedy, *Theoretical Qualitative Analysis*, McGraw-Hill; Engelder, *Calculations of Qualitative Analysis*, Wiley.

Mr. Harris.

250 [2(b)]. *Quantitative Analysis*.—This course embraces the more important methods of gravimetric and volumetric analysis.

Text-book: Booth and Damerell, *Quantitative Analysis*, McGraw-Hill.

Mr. Harris.

300 [3]. *Organic Chemistry*.—As in Arts. (See page 139.)

304 [4(a)]. *Theoretical Chemistry*. — As in Arts. (See page 139.)

305 [4(b)]. This course is the same as Chemistry 304 with the omission of the laboratory.

310 [5]. *Advanced Qualitative and Quantitative Analysis*.—As in Arts. (See page 140.)

350 [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.

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

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

Mr. Seyer.

407 [7]. *Physical Chemistry*.—As in Arts. (See page 141.)

450 [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.

Mr. Seyer.

451 [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 350 and Chemistry 450 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.

Mr. Seyer.

452. *Thesis*.

458 [8]. *Electrochemistry*.—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. Electric furnaces and electrolytic refining and deposition of metals will be studied in detail.

Text-books: Creighton, *Theoretical Electrochemistry*, Vols. I and II, Wiley; Thompson, *Theoretical and Applied Electrochemistry*, Macmillan.

Mr. Seyer.

459 [9]. *Advanced Organic Chemistry*.—As in Arts, Chem. 409 and 410. (See page 141.)

COURSES FOR GRADUATE STUDENTS

511 [11]. *Physical Organic Chemistry*.—As in Arts. (See page 142.)

512 [12]. *Colloid Chemistry*.—As in Arts. (See page 142.)

517 [17]. *Chemical Thermodynamics*.—As in Arts. (See page 142.)

(Given in 1947-48 and alternate years.)

- 518 [18]. *Advanced Inorganic Chemistry*.—As in Arts. (See page 143.) (Given in 1946-47 and alternate years.)
- 521 [21]. *Chemical Kinetics*.—As in Arts. (See page 143.) (Given in 1947-48 and alternate years.)
- 522 [22]. *Surface Chemistry*.—As in Arts. (See page 143.) (Given in 1946-47 and alternate years.)
- 530 [30]. *Research Conference*.—This course is required of all graduate students. Students will be required to present a paper on an approved topic.

Department of Civil Engineering

150 [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.

Mr. Finlayson.

155 [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.

Mr. Peebles.

160 [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.

Mr. Finlay.

250. *Surveying and Mapping*.—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. Draughting from notes obtained in survey field work; maps of compass, stadia, and transit surveys; contour maps, topographical maps, and conventions.

Mr. Pretious, Mr. Peebles.

251 [6]. *Surveying 1*.—Chain and angular surveying; levelling; construction, use, and adjustment of surveying instruments; applications to engineering problems.

Text-book: Davis, *Elementary Plane Surveying*, 2nd edition, McGraw-Hill; or Rubey, Lommel, and Todd, *Engineering Surveys, Elementary and Applied*, Macmillan. (Recommended for students expecting to go on to C.E. 351.)

Mr. de Jong.

255 [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.

260 [31]. (a) *Mechanics*.—An extension of the subject matter of Physics 150, applying the methods of the differential and integral calculus.

(b) *Engineering Problems 2*.—A continuation of C.E. 160, involving a thorough drill in problems in the principal divisions of mathematics given in the First and Second Years of Applied Science, drawn from the field of mechanics, surveying, draughting, and engineering.

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

Mr. Finlayson, Mr. Finlay, Mr. Hrennikoff.

350 [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.

Work commences at the close of spring examinations, and consists of field work, eight hours a day for twelve days, or equivalent.

Mr. Finlay, Mr. Muir.

351 [14]. *Surveying 2*.—A continuation of Civil 251. Underground, hydrographic, and phototopographic surveying; Dominion and Provincial surveys; field astronomy.

Text-book: Rubey, Lommel, and Todd, *Engineering Surveys, Elementary and Applied*, Macmillan.

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

Mr. de Jong.

352 [13]. *Mapping 2*.—Mapping from notes obtained in Civil 350; mining, forestry, or geological maps.

Mr. Pretious.

353 [15]. *Drawing*.—Map projections, perspective drawings, photographic maps.

Mr. Bell.

355 [10(a)]. *Strength of Materials*.—A study of the fundamental relations between external forces and their accompanying stresses, strains and deflections in structural members, including simple and continuous homogeneous beams, reinforced concrete beams, shafts, columns, springs, and riveted and welded joints.

Text-book: Timoshenko & McCullough, *Elements of Strength of Materials*, 2nd edition, Van Nostrand.

Reference: Timoshenko, *Strength of Materials*, Vols. I and II, Van Nostrand.

Mr. Finlay.

356 [10(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.

Mr. Hrennikoff, Mr. Alexander.

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

357 [10(c)]. *Materials Testing*.—Testing of steel and other metals for their mechanical properties. For students in courses other than Civil or Forest Engineering.

Mr. Hrennikoff, Mr. Alexander.

360 [12]. *Hydraulic Engineering 1*.—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. Laboratory period includes experimental work on gauges, pipes, weirs, orifices, and hydraulic machines.

Text-book: Russell, *Hydraulics*, 5th edition, Holt.

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

Mr. Pretious, Mr. Heslop.

361 [12]. *Hydraulic Engineering*.—A course similar to C.E. 360 except that an additional period of one hour a week is allotted to the solution of problems. For Civil Engineering students only.

Mr. Pretious.

365 [8]. *Foundations and Masonry*.—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. 355 must either precede or be taken concurrently.

Mr. Hrennikoff.

366. *Earth Pressure*.—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*; Cain, *Earth Pressure, Walls and Bins*.

Mr. Hrennikoff.

370 [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.

Mr. Muir.

375 [11]. *Railways*.—The development of railway transportation; co-ordination of transportation systems; railway location, drainage, grades, curvature, and distance, and their effects upon operating costs; 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.

Mr. Peebles.

380 [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; preparation of written outlines for all oral reports; training in technical writing and public speaking.

Required of all Third and Fourth Year students in Civil Engineering.

Reference: Rickard, *Technical Writing*, McGraw-Hill.

450 [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 leveling.

Mr. de Jong.

455 [25]. *Theory of Structures*.—An analysis of the principal types of structures, including simple trusses, 3-hinged arches, continuous girders, and rigid frames, under the action of fixed and moving loads, together with a study of the deflections to which such structures are subject.

Text-book: Timoshenko & Young, *Theory of Structures*, 1st edition, McGraw-Hill.

Reference: Johnson, Bryan & Turneure, *Modern Framed Structures*, Vols. I to III, Wiley.

Mr. Finlay.

460 [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: *Steel Construction*, American Institute of Steel Construction; *Specifications for Steel Railway Bridges*, American Railway Engineering Association; *Standard Specification for Steel Highway Bridges*, Canadian Engineering Standards Association.

Reference: Kirkham, *Structural Engineering*, McGraw-Hill.

Mr. Hrennikoff.

461 [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: Urquhart and O'Rourke, *Reinforced Concrete Design*, 4th edition, McGraw-Hill; *Reinforced Concrete Design Handbook*, American Concrete Institute.

Mr. de Jong.

465 [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.

Mr. Muir.

466 [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, hydroelectric installations, waterhammer, and surge tanks.

Laboratory work consists of testing pumps and turbines, plotting curves, and solving problems.

Text-book: Barrow, *Water Power Engineering*, McGraw-Hill.

References: Meyer, *Elements of Hydrology*, 2nd edition, Wiley; Creager and Justin, *Hydro-electric Engineering*, 1st edition, Wiley; Daugherty, *Hydraulic Turbines*, 3rd edition, McGraw-Hill.

Mr. Muir.

470 [23]. *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.

References: Hewes, *American Highway Practice*, Vols. I and II, Wiley; Hogentogler, *Engineering Properties of Soil*, McGraw-Hill.

Mr. Peebles.

475 [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.

Mr. Kania.

476 [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: Laidlaw and Young, *Engineering Law*, University of Toronto; H. D. and W. H. Anger, *Digest of Canadian Mercantile Law*, Anger.

Mr. Pretious.

COURSE FOR GRADUATE STUDENTS

550 [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 Commerce

251 [1]. *Fundamentals of Accounting*.—As in Arts. (See page 149.)

261 [6]. *Marketing*.—As in Arts. (See page 150.)

371 [9]. *Business Finance*.—As in Arts. (See page 150.)

381 [11]. *Industrial Management*.—As in Arts. (See page 151.)

391 [4]. *Commercial Law*.—As in Arts. (See page 151.)

Department of English

150 [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.

Mr. Morrison.

200 [2]. *Literature*.—For students in Nursing. As in Arts. (See page 164.)

205 [3 & 4]. *Literature and Composition*.—For students in Nursing. As in Arts. (See page 165.)

250 [4]. *Technical Writing*.—This course 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.

Mr. Morrison.

Department of Forestry

150 [1c]. *General Forestry*.—A general introduction to the entire field of forestry together with a study of the forest distribution throughout the world by broad types and the importance of forest activities in different regions of the world.

Reference readings are assigned.

Mr. Knapp.

160. *Forest Surveying*.—The care, adjustment, and use of simple surveying instruments. Practice in running base lines and traverses, and in topographic mapping and cruising.

The Staff.

250. *Silvics*.—An introduction to the study of climatic, soil, physiographic, and biotic factors affecting the establishment and growth of trees and forests.

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

Reference readings are assigned.

Mr. Griffith.

251 [3]. *Forest Fire Protection*.—Fire control planning. Prevention, detection, and suppression of forest fires, analysis of fire hazard, and methods of rating and predicting fire weather.

Text-book: Folweiler and Brown, *Fire in the Forests of the United States*, Swift.

Mr. Allen.

252 [1b]. *Forest Botany*.—A general introductory course in botany, with special reference to forest conditions. Engineering students only are required to take this course.

Text-book: Transeau, Sampson, and Tiffany, *Text-book of Botany*, Harpers.

Mr. Allen.

260. *Forest Surveying, Mapping, and Cruising*.—A lecture course following Forestry 160, devoted to instruction in the collection, presentation, and analysis of field data.

Mr. Liersch.

270 [5]. *Wood Technology*.—A study of wood structure and identification based on characteristics determined by the naked eye and the hand lens.

Reference: Koehler, *The Properties & Uses of Wood*, McGraw-Hill.

Mr. Knapp.

350 [8]. *Silviculture*.—Silvicultural systems; intermediate and final cuttings; natural and artificial regeneration.

Text-books: Hawley, *Practice of Silviculture*, 4th edition, Wiley; Toumey & Korstian, *Seeding & Planting in the Practice of Forestry*, 3rd edition, Wiley.

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

Mr. Allen.

353 [14]. *Seminar*.—Oral presentation and discussion of current forestry topics; reviews of important papers in forestry periodicals; training in technical writing and public speaking.

The Staff.

360 [2]. *Forest Mensuration*.—Log scaling and measurement of felled timber products; preparation of volume and yield tables; measurement of growth and yield of forests; statistical analysis.

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

Reference: Chapman and Demeritt, *Elements of Forest Mensuration*, Lyon.

Mr. Wellwood.

361 [6]. *Forest Management*.—Principles of forest organization and regulations of the cut; sustained yield management of forests; forest working plans; forest finance.

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

Mr. Griffith.

370. *Wood Technology*.—The microscopic characteristics and identifications of wood and timbers, morphology, economic uses of commercial species.

Text-book: Brown & Panshin, *Commercial Timbers of the United States*, McGraw-Hill.

References: Record, *The Identification of Timber of Temperate North America*, Wiley; Koehler, *The Properties and Uses of Wood*, McGraw-Hill; Koehler & Thelen, *Kiln Drying of Lumber*, McGraw-Hill.

Mr. Knapp.

380 [7]. *History of Forestry*.—The history and development of forestry in the different timber producing countries of the world.

Reference readings are assigned.

Mr. Wright.

450. *Advanced Silviculture*.—The practical applications to specific woods problems of silvicultural knowledge. Research methods.

Reference readings are assigned.

Mr. Allen.

453. *Seminar*.—Oral presentation and discussion of current forestry topics, reviews of important papers in forestry periodicals, training in technical writing and public speaking.

The Staff.

460. *Advanced Mensuration*.—Recent developments in mensuration research methods.

Reference readings are assigned.

Mr. Wellwood.

461. *Advanced Forest Management*.—Application of knowledge gained in Forestry 361 and other courses to specific management problems as encountered under woods conditions. Actual examples and problems with reference to specific properties are analysed and solved.

Mr. Griffith.

471 [10]. *General Logging*.—A study of the general logging methods in the different forest regions of the continent.

Text-books: Brown, *Logging Transportation*, Wiley; Brandstrom, *Analysis of Logging Costs and Operating Methods in the Douglas Fir Region*, Charles Lathrop Park Forestry Foundation, Washington, D. C.

Reference readings are assigned from trade journals and periodicals.

Mr. Knapp.

472. *Logging Engineering*.—Cost analysis of different logging methods. Principles of engineering as applied to woods conditions. Studies of operating methods on actual operations.

Text-book: Mathews, *Cost Control in the Logging Industry*, McGraw-Hill.

References: Brown, *Logging Principles and Practices*, Wiley; Kirkland and Brandstrom, *Selective Timber Management in the Douglas Fir Region*, U. S. Forest Service, Washington, D. C.

Mr. Liersch.

473 [11, part]. *Milling and Marketing*.—Manufacturing problems and methods of marketing in the lumber industry.

Text-book: Bryant, *Lumber*, Wiley.

Reference: Brown, *American Lumber Industry*, Wiley.

Mr. Knapp.

474 [13]. *Lumber Grading*.—An intensive study of the grading, tallying, and shipping of Pacific Coast lumber products.

Text-book: Beaulieu and Lauritzen, *Lumber Grading Practice*, British Columbia Lumber and Shingle Manufacturers' Association.

Mr. Dixon.

475 [11, part]. *Forest Products*.—A study of the pulp and paper industry, veneers, plastics, chemical and physical treatment of woods.

References: *The Manufacture of Pulp & Paper*, Volumes III to V, McGraw-Hill; Knight and Wulpi, *Veneers and Plywood*, Ronald.

Mr. Knapp.

481 [16]. *Forest Economics*.—Principles of forest economics; economic and social value of forests; forestry and land use; forest taxation, forestry credit, and forest fire insurance; forestry as a private business enterprise.

Text-book: Buttrick, *Forest Economics and Finance*, Wiley.

References: Marquis, *Economics of Private Forestry*, McGraw-Hill; Hiley, *The Economics of Forestry*, Oxford; Korstian, *Forestry on Private Lands in the United States*, Duke University.

Mr. Wright.

The University Forest Reserve

On March 1st, 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 2½ 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.

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 Engineer, Grade 1: W. J. Smith, B.A.Sc. (Brit. Col.).

Forest Products Assistant, Grade 2: J. T. Lee.

Forest Products Assistant, Grade 2: W. W. Davidson.

Forest Products Assistant, Grade 1: J. Varley.

Forest Products Assistant, Grade 1: J. T. Yelf.

Laboratory Assistant: Mrs. P. D. Birrell.

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).

Forest Products Assistant, Grade 1: 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

201 [1(a) & (c)]. *General Geology*.—As in Arts. (See page 172.)

202 [1(b) & (d)]. *General Geology*.—As in Arts. (See page 173.)

302 [2a]. *General Mineralogy*.—As in Arts. (See page 173.)

303 [2b]. *Descriptive and Determinative Mineralogy*.—As in Arts. (See page 174.)

304 [4]. *Structural Geology*.—As in Arts. (See page 174.)

305 [5]. *Theoretical and Historical Geology*.—As in Arts. (See page 174.)

308. *Fuels and Structural Materials*.—As in Arts. (See page 175.)

403 [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.
Mr. Watson.

406 [6]. *Palaeontology*.—As in Arts. (See page 175.)

407 [7]. *Petrography*.—As in Arts. (See page 175.)

408 [8]. *Mineral Deposits*.—As in Arts. (See page 176.)

409 [9]. *Mineralography*.—As in Arts. (See page 176.)

410 [10]. *Field Geology*.—As in Arts. (See page 176.)

411 [11]. *Regional Geology*.—As in Arts. (See page 176.)

412 [12]. *Geomorphology*.—As in Arts. (See page 177.)

420. *Thesis*.

COURSES FOR GRADUATE STUDENTS

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

520 [20]. *Sedimentation*.—As in Arts. (See page 177.)

521 [21]. *Problems in Palaeontology*.—As in Arts. (See page 177.)

523 [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.

Mr. Warren.

524 [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, photomicrography, 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.

525 [25]. *Petrogeny*.—As in Arts. (See page 178.)
(Not given in 1946-47.)

526 [26]. *Mineral Deposits*.—As in Arts. (See page 178.)

Department of Mathematics

150 [2]. *Trigonometry and Geometry*.—Graphs and periodicity of simple and compound trigonometric functions; inverse functions, trigonometric equations, and identities; De Moivre's theorem; series expansions; exponential, logarithmic, and hyperbolic functions. Selected topics in geometry.

Text-book: Rider, *Plane and Spherical Trigonometry*, Macmillan.

Mr. Murdoch.

151 [3]. *Algebra*.—Complex numbers; polynomials, rational functions, and their graphs; interpolation formulae; numerical solution of equations; determinants; infinite series.

Text-book: Knebelman and Thomas, *Principles of College Algebra*, Prentice-Hall.

Reference: Crawford, *Senior High School Algebra*, Macmillan.

Mr. Jennings.

152 [4]. *Calculus*.—An introductory study of the differential and integral calculus, and some of the simpler applications.

Text-book: Nelson, Folley, and Borgman, *Calculus*, Heath.

Reference: Currier, Watson, and Frame, *General Mathematics*, Macmillan.

Mr. Gage.

203. *Mathematics for Forestry*.—As in Arts. (See page 197.)

250 [6]. *Calculus*.—Differential and integral calculus with various applications.

Text-book: Nelson, Folley, and Borgman, *Calculus*, Heath.

Mr. Gage.

251 [7]. *Plane and Solid Geometry*.—A study of the conics, cycloids, and other plane curves; elementary statistics and curve fitting; solid analytic geometry; introduction to spherical trigonometry.

Text-book: Griffin, *Introduction to Spherical Trigonometry*, Houghton Mifflin.

References: Sohon, *Engineering Mathematics*, Van Nostrand; Young, Fort, and Morgan, *Analytical Geometry*, Houghton Mifflin.

Mr. James.

301 [11]. *Mathematical Analysis*.—As in Arts. (See page 197.)

302 [12]. *Differential Equations*.—As in Arts. (See page 197.)

303 [13]. *Analytical Geometry*.—As in Arts. (See page 197.)

350 [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.

Reference: Sohon, *Engineering Mathematics*, Van Nostrand.

Mr. Gage.

401 [16]. *Advanced Calculus*.—As in Arts. (See page 198.)

COURSE FOR GRADUATE STUDENTS

550 [10]. *Analysis*.—A course dealing with selected topics in analysis, designed for graduate students in Engineering.

Mr. Gage.

**Department of Mechanical and Electrical
Engineering
Mechanical Engineering**

152 [1]. *Mechanical Drawing*.—Free hand lettering; orthographic projection; dimensioning; thread conventions; technical sketching; detail and assembly drawings of machine parts; tracing and blueprinting.

Text-book: Svensen, *Essentials of Drafting*, Van Nostrand.
Mr. McIlroy.

352 [2]. *Mechanical Drawing*.—Continuation of M.E. 152. 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 twelve days, eight hours a day.

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

Text-book: Svensen, *Essentials of Drafting*, Van Nostrand.

Reference: Schuman, *Technical Drafting*, Harpers.

Mr. McIlroy.

356 [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.

358 [31]. *Machine Shop Practice*.—Similar to M.E. 356 but intended for students in Electrical Engineering.

361 [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; miscellaneous mechanisms.

Text-book: Guillet, *Kinematics of Machines*, 4th edition, Wiley.
Mr. Richmond.

363 [5]. *Machine Design 1*.—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.

Mr. Richmond.

365 [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.

Mr. Vernon.

371 [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.

Mr. Wolfe.

373 [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.

Mr. McIlroy.

375. *Applied Thermodynamics*.—Similar to M.E. 373, but modified to meet the needs of students in Electrical Engineering.

Mr. McIlroy.

456 [32]. *Machine Shop Practice*.—A continuation of M.E. 356. Required of students in Fourth Year Mechanical Engineering.

463 [16]. *Machine Design 2*.—A continuation of Mechanical Engineering 363, which includes the design of power transmission equipment such as belts, gears, etc. Emphasis is placed on the use of rational formulas in the design of machine parts.

In the drawing office period the student is required to design simple machines and to prepare the working drawings necessary for their construction.

Text-books: Vallance and Doughtie, *Design of Machine Members*, 2nd edition, McGraw-Hill; Marks, *Mechanical Engineers' Handbook*, 4th edition, McGraw-Hill.

Mr. Richmond.

465 [17]. *Applied Mechanics*.—This course deals with the theory of mechanical vibrations, applications being made to the problems of vibration isolation and absorption, and the torsional vibrations

of internal combustion engines. In addition, methods of experimental stress analysis are considered, such as photoelasticity and strain measurement by electric gauges. Some mathematical stress analysis is also included.

Text-book: Freberg and Kemler, *Elements of Mechanical Vibration*, Wiley.

References: Den Hartog, *Mechanical Vibrations*, McGraw-Hill; Timoshenko, *Strength of Materials*, Parts 1 and 2, Van Nostrand. Mr. Richmond.

467 [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 Fourth Year Electrical Engineering students. Mr. Thomson.

471 [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, Zoelly, Rateau; velocity compounding; pressure compounding; reaction turbines; Parsons; velocity diagrams; reheating 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.

Text-book: Polson, *Internal Combustion Engines*, Wiley.

References: Goudie, *Steam Turbines*, Longmans; Stodola, *Steam and Gas Turbines*, McGraw-Hill; Moyer, *Steam Turbines*, Wiley; Lea, *Hydraulics*, Longmans; Gibson, *Hydro-electric Engineering*, Vol. I, Blackie.

Mr. Vernon.

472 [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.

Mr. Vernon.

475 [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.

Text-book: Skratzki and Vopot, *Applied Energy Conversion*, McGraw-Hill.

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

Mr. Mellroy.

477 [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.

Mr. Thomson.

481 [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.

Mr. Vernon.

COURSE FOR GRADUATE STUDENTS

563 [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.

Electrical Engineering

351. *D. C. Machines and A. C. Circuits*.—The theory and characteristics of direct current generators and motors. Single-phase and polyphase alternating current circuits; power measurements.

Text-books: Hehre and Harness, *Electrical Circuits and Machinery*, Vols. I and II, Wiley; *Junior Laboratory Manual*.

Mr. Kersey.

353 [2]. *Principles of D. C. Machines*.—Electromagnetic theory. The theory, operating characteristics, efficiency, and applications of direct current generators and motors.

Text-book: Hehre and Harness, *Electrical Circuits and Machinery*, Vol. I, Wiley.

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

Mr. Morgan.

355 [3]. *Principles of Alternating Currents*.—A thorough treatment of alternating current theory and calculations, with an introduction to the principles of the chief alternating current machines.

Text-book: Kerchner & Corcoran, *Alternating Current Circuits*, Wiley.

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

Mr. Morgan.

356 [2 and 3 *Laboratory*].—Experimental work and problems on D. C. machines and A. C. circuits, illustrating the theory covered in E.E. 353 and E.E. 355.

Text-book: *Junior Laboratory Manual*.

Mr. Morgan.

357. *Electronics and Electron Tubes*.—Physical concepts; electron emission, electron dynamics; electron tubes and their characteristics; resonant and coupled circuits.

Text-books: Eastman, *Fundamentals of Vacuum Tubes*, McGraw-Hill; Wright, *Electronics Laboratory Manual*, McGraw-Hill.

Mr. MacLeod.

451 [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.

Mr. Noakes.

453 [14]. *Alternating Current Machines*.—The theory and characteristics of alternating current machines. For Fourth Year students in Mechanical Engineering.

Text-books: Hehre and Harness, *Electrical Circuits and Machinery*, Vol. II, *Alternating Currents*, Wiley; *Senior Laboratory Manual*.

Mr. Morgan.

457 [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: Puchstein and Lloyd, *Alternating Current Machines*, Wiley.

Mr. Coulthard.

459 [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.

Mr. MacLeod.

461 [8]. *Electrical Illumination*.—Radiation; luminous flux; light sources; photometric units and measurements; vision; lighting design.

Text-book: Kraehenbuehl, *Electrical Illumination*, Wiley.

Reference: Boast, *Illumination Engineering*, McGraw-Hill.

Mr. Morgan.

463 [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: Tarboux, *Introduction to Electric Power Systems*, International Textbook Company; Sanderson, *Electric System Handbook*, McGraw-Hill; Lovell, *Generating Stations*, McGraw-Hill.

Mr. Noakes.

465 [11]. *Electrical Communication*.—Properties of coils and condensers; the theory and application of vacuum tubes as amplifiers, oscillators, modulators, and detectors; radio circuits; gas-filled tubes and control circuits; the electrical characteristics of telephone lines and cables; filters; impedance transformation; radiation and antennae.

Text-books: Eastman, *Fundamentals of Vacuum Tubes*, McGraw-Hill; Ware and Reed, *Communication Circuits*, Wiley.

References: Everitt, *Communication Engineering*, McGraw-Hill; *Electronics Laboratory Manual*.

Mr. MacLeod.

467 [13]. *Electrical Theory, Instruments, and Measurements*.—A review of electrical units and dimensions; electrical instruments and measurements; bridges; electrical theory, including transient phenomena.

Text-books: Golding, *Electrical Measurements and Measuring Instruments*, Pitman; Coulthard, *Transients in Electric Circuits*, Pitman.

Mr. Coulthard.

COURSE FOR GRADUATE STUDENTS

551 [101]. *Electromagnetic Theory and Electronics*.—A study of electromagnetic fields and waves with reference to radio and electronics engineering. The main subjects are Maxwell's equations, potentials, circuit concepts, propagation and reflection of electromagnetic waves, radiation; transmission lines, wave guides, radio circuits and apparatus, with special reference to high frequencies.

References: Skilling, *Fundamentals of Electric Waves*, Wiley; Ramo and Whinnery, *Fields and Waves in Modern Radio*, Wiley; Guillemin, *Communication Networks*, Vols. I and II, Wiley; *Ultra High Frequency Techniques*, Van Nostrand; current journals.

Department of Mining and Metallurgy

Mining

350 [1]. *Principles of Mining*.—An examination of principles underlying operations common to all types of mining: economics, prospecting, exploration, development methods, breaking ground, ground support.

Mr. Crouch.

450 [3]. *Principles of Mining*.—A continuation of Mining 350: transportation, drainage, ventilation, sampling and valuation, safety and welfare, management, mining law.

Mr. Crouch.

451 [2 & 7]. *Mining Methods*.—A consideration of methods used in exploitation of mineral deposits; placer, coal, and metal mining methods.

Mr. Crouch.

452 [4]. *Mine Plant*.—Factors influencing the design and selection of some types of mining equipment.

Mr. Crouch.

454 [8]. *Problems and Reports*.—Problems and reports on selected topics from the fields of mining and metallurgy.

Mr. Crouch.

490 [5]. *Mine Surveying*.—Methods of surveying underground openings, shaft plumbing, mine models.

Mr. Crouch.

Metallurgy

350 [1(b)]. *Chemical Metallurgy*.—Introduction to metallurgy; fuels; refractories; pyrometry; elementary physico-chemical principles of metallurgical operations. These principles are illustrated in the laboratory by application to hydro-, pyro-, and electro-metallurgical reactions, including some aspects of fire- and wet-assaying.

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

References: Shepard and Dietrich, *Fire Assaying*, McGraw-Hill; Liddell, *Handbook of Non-ferrous Metallurgy*, 2nd edition, McGraw-Hill; *Basic Open Hearth Steelmaking*, Part 2, A.I.M.E.

Mr. Forward.

351 [1(a)]. *Physical Metallurgy*.—Structure and physical properties of metals; alloy equilibrium diagrams; principles of heat treatment of steel and non-ferrous alloys; properties of alloys; specifications.

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

Mr. Forward.

352 [1(c)]. *Metallography*.—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.

Reference: Teichert, *Ferrous Metallurgy — Metallography and Heat Treatment of Steel*, Volume III, McGraw-Hill.

Mr. Forward.

450. *Theoretical Metallurgy*.—The development of the free energy concepts of the phase rule, heats of reaction and equilibria as they relate to metallurgical processes and alloys. The laboratory course serves to illustrate the application of these principles in oxidation and reduction, electro-metallurgy, melts, gas reactions, and certain phases of alloying operations.

Mr. Samis.

451 [2]. *Applied Chemical Metallurgy*.—The application of chemical principles in roasting, leaching, smelting, and refining, illustrated by the operations encountered in the metallurgy of iron and steel, the common base metals, light metals, precious metals, and ferro-alloys.

References: Stoughton, *Metallurgy of Iron and Steel*, 4th edition, McGraw-Hill; *Basic Open Hearth Steelmaking*, A.I.M.E.; Liddell, *Handbook of Non-ferrous Metallurgy*, 2nd edition, McGraw-Hill.

Mr. Forward.

452 [3(a)]. *Physical Metallurgy*.—The structure and deformation of metals and alloys; phase changes in the solid state; effect of alloy additions to steel; principles of heat treatment; quenching media; special alloys; cast-iron; atmosphere control.

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.

Mr. Forward.

453 [3(b)]. *Metallurgical Calculations*.—A laboratory course dealing with problems related to the fields of combustion, roasting, smelting, leaching, and refining, with particular emphasis on the thermodynamic and other physico-chemical principles involved.

Text-book: Butts, *Metallurgical Problems*, 2nd edition, McGraw-Hill.

Mr. Samis.

454 [4]. *Laboratory and Research Methods*.—In the First Term, laboratory analysis of metallurgical products. In the Second Term, study of selected problems in (a) Mineral Dressing, or (b) Chemical Metallurgy, or (c) Physical Metallurgy. Emphasis is laid on the methods of laboratory procedure and preparation of engineering reports.

Mr. Samis.

456 [9]. *Metallography*.—A continuation of the work in Metallurgy 352: polishing soft metals, identification of micro-constituents, macro-etching, contact prints, and photography. For students taking the physical metallurgy option.

Text-book: Dowdell, Jerabek, Forsyth, and Green, *Metallography*, Wiley.

457 [7]. *Plant Management*.—Metal production statistics and markets; industrial hygiene; metallurgical accounting; ore-buying contracts; labour relations; professional ethics. Students are required to prepare a report on the current production methods and economic aspects of one of the metals.

Mr. Forward.

COURSE FOR GRADUATE STUDENTS

551 [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.

Mineral Dressing

350 [1]. *Mineral Dressing (Introductory)*.—A study of the fundamental principles and the commercial aspects of mineral dressing methods; testing procedure; mill sampling; crushing; screening; grinding; classification; concentration; cyanidation; dewatering; electrostatic and magnetic separation; sink and float process; plant layout and costs in relation to smelter contracts or disposal of products; mill plant controls; material handling devices; coal washing; beneficiation of non-metallics; flowsheet economics.

Text-book (optional): Taggart, *Handbook of Mineral Dressing*, Wiley.

References: Richards & Locke, *Text-book of Ore Dressing*, Wiley; Wark, *Principles of Flotation*, Australasian Institute of Mining & Metallurgy; Dorr, *Cyanidation & Concentration of Gold and Silver Ores*, McGraw-Hill; Gaudin, *Principles of Mineral Dressing*, McGraw-Hill; Hamilton, *Manual of Cyanidation*, McGraw-Hill.

450 [3]. *Mineral Dressing*.—An advanced course in mineral dressing methods and principles — a continuation of Mineral Dressing 350 with special reference to: flowsheets; plant layout and design; metallurgical calculations; advanced study of the mineral dressing processes; a laboratory investigation of selected ores.

Text-book: Taggart, *Handbook of Mineral Dressing*, Wiley.

COURSE FOR GRADUATE STUDENTS

550 [101]. *Mineral Dressing*.—An advanced course in mineral dressing for graduate students, including theory and laboratory work of a research character.

Department of Nursing and Health Nursing

151 [1]. *History of Nursing*.—A study of the origin and history of nursing.

One hour a week. First Year. Miss Mallory.

Lectures: 1.30-2.30, Tuesday.

152 [2]. *Elementary Biochemistry, as Applied to Physiology*.

Two hours a week. First Year, Second Term. Mr. Allardyce.

Lectures: 10.30-11.30, Tuesday and Friday.

153 [3]. *Bacteriology in Relation to Health and Disease*.—A special course for Degree 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. Mr. 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 153. (See page 127.)

454 [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. Mr. Dolman, Mr. Ranta.

455 [5]. *Mental Hygiene*.—An introduction to the study of mental illness, with emphasis upon its prevention; child guidance clinics and the psychiatric social history.

457 [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. Mr. Spohn and special lecturers.

459 [9]. *Sanitation*.—A study of community sanitation and of relevant legislative measures; field visits.

One hour a week. One term. Mr. Ranta.

461 [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.

462 [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.

463 [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.

464 [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.

466 [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.

Text-book: Kirkpatrick and Huettner, *Fundamentals of Health*, revised edition, Ginn.

Two hours a week.

467 [17]. *Current Nursing Problems*.—Consideration of recent developments in the nursing field.

One hour a week. Miss Mallory.

468 [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.

469 [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.

471 [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 Reebel.

477 [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.

481 [31]. *Principles and Methods of Teaching*.

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

485 [35]. *Essay*.—Written presentation and discussion of a report upon assigned problems or topics within the scope of nursing education or public health.

486 [36]. *Field Work in Nursing B**. — Field work 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 and after the academic year.

487 [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

The instruction includes lectures on the general principles of physics, accompanied by courses of practical work in the laboratory.

90 [A]. *Introduction to Physics*.—As in Arts. (See page 205.)

100 [1]. *Elementary Physics*.—As in Arts. (See page 205.)

150 [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 First Year of Applied Science.

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

*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.

151 [4(b)]. *Heat*.—This course is begun when Physics 150 is finished. It is assumed that the student is already familiar with the elementary principles of heat.

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

References: Allen and Maxwell, *A Text-book of Heat*, Macmillan; Cork, *Heat*, Wiley.

250 [5]. *Electricity and Magnetism*.—A quantitative study of fundamental principles of electricity and magnetism, with special reference to the fact that the student is to be an engineer. The course includes a short treatment of the elements of alternating currents and an introduction to vacuum tube circuits.

Text-book: Loeb, *Fundamentals of Electricity and Magnetism*, 2nd edition, Wiley.

301. *Theoretical Mechanics*.—As in Arts. (See page 207.)

302. *Mathematical Physics*.—As in Arts. (See page 207.)

303. *Physical Optics*.—As in Arts. (See page 207.)

360 [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.

401 [5]. *Electricity and Magnetism*.—As in Arts. (See page 208.)

402 [12]. *Introduction to Atomic Structure*.—As in Arts. (See page 209.)

403. *Kinetic Theory of Gases*.—As in Arts. (See page 209.)

404. *Thermodynamics*.—As in Arts. (See page 209.)

409. *Experimental Physics*.—As in Arts. (See page 209.)

460. *Metallurgical Physics*.—Elements of the structure and properties of matter; X-ray methods; spectroscopy; surface phenomena.

Department of Zoology

NOTE. Biology 100 is prerequisite to all courses in Zoology.

200. *General Zoology*.—As in Arts. (See page 216.)

402. *Forest Entomology*.—As in Arts. (See page 219.)

THE
FACULTY
OF
AGRICULTURE

1946-47

1946-1947

1946-47

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 100). 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, Farm Mechanics, 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.

*The curriculum described in the following pages may be changed from time to time as deemed advisable by the Senate.

For those interested in continuing their university training beyond the work of the four years leading to the bachelor's degree, excellent opportunity is afforded in many of the fields mentioned above for further work leading to the master's degree.

A judicious selection of courses permits of the completion of the required work for both the B.S.A. and the B.A. degrees in five years.

(For further information regarding the various courses, see statements which follow the *Outline of Courses*; also description of courses as listed under the separate departments.)

Admission, Registration, Etc.

For statement as to general requirements for admission to the University, registration, etc., see pages 34-43.

Degrees

The degrees offered in this Faculty are:

Bachelor of Science in Agriculture (B.S.A.).

Master of Science in Agriculture (M.S.A.).

Courses of Study

Six distinct lines of study are offered, as follows:

- (1) Four-year courses leading to the degree of Bachelor of Science in Agriculture (B.S.A.).
- (2) A double course for the degrees of B.A. and B.S.A. (See *Double Courses*.)
- (3) A one-year occupational course leading to a diploma in Agriculture.
- (4) A winter course at the University, consisting of a Short Course in one or more of the agricultural subjects: Poultry, Horticulture, etc.
- (5) Extension courses at different points in the Province.
- (6) Graduate work in agriculture leading to the degree of Master of Science in Agriculture (M.S.A.).

Courses Leading to the Degree of B.S.A.

These courses are planned for students who wish to obtain practical and scientific knowledge of agriculture, or closely allied subjects, either as a basis for demonstration, teaching, or research, or as an aid to successful farming.

Students are required to have University Entrance or its equivalent before entering upon these courses. (See *University Entrance Requirements*.)

The Occupational Course

The Occupational Course is planned for those students whose academic qualifications may not be high, but whose practical qualifications are satisfactory. The course permits of work in Agricultural Economics, Agronomy, Animal Husbandry, Dairying, Farm Mechanics, Horticulture, and Poultry Husbandry 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 293-295.

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) a 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 100, 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 fewer than three of the seven departments: Agricultural Economics, Agronomy, Animal Husbandry, Dairying, Farm Mechanics, 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 202, Horticulture 213, Horticulture 441, and Horticulture 442.

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 AND SECOND YEARS

The requirements for 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.

Each student must take:

- (a) Agriculture 100
- (b) Biology 100
- (c) Chemistry 100
- (d) English 100 and 101, and either English 200 or English 205
- (e) Mathematics 100
- (f) Three units from electives A
- (g) 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 202	Bacteriology 201	German 90
Agronomy 211	Biology 300 and 301	Spanish 90
Animal Husbandry 215	Botany 200	Commerce 251
Dairying 201 and 202, or 303	Chemistry 200	Economics 200
Farm Mechanics 101	Geology 201 and 202	History 101
Horticulture 213	Mathematics 200 or 201	University Entrance Language
Poultry Husbandry 200 and 201	Physics 100	3 or 6 units
	Zoology 200	Psychology 101
		Home Economics

Students who enter with standing higher than that of University Entrance may on approval of the Committee on Courses be excused from Agriculture 100, but if so excused, are required to take 6 units from electives A for credit in First and Second Years.

Students who contemplate proceeding to the Normal School after taking one year of the course in Agriculture may take the First

Year course in the language taken for University Entrance in First Year and defer either Chemistry 100 or Biology 100 until Second Year.

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.

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. Three typewritten copies of each thesis, together with an abstract approved by the department concerned, 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 units of credit in Agriculture in addition to Agriculture 100, and at least nine units of credits in any one of the following subjects: Chemistry, Physics, Mathematics, or Biology (including Botany and Zoology), in addition to Chemistry 100, Physics 100, and Biology 100.

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 100 and 101 and either 200 or 205, 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 101 as a prerequisite to Educational Psychology.

For further particulars, see *Teacher Training Course* under Faculty of Arts and Science.

Examinations and Advancement

1. Examinations in all subjects, obligatory for all students, are held in April. In the case of subjects which are final at Christmas and in the case of courses of the First and Second Years, examinations will be held in December as well. Applications for special consideration on account of illness or domestic affliction must be submitted to the Dean not later than two days after the close of the examination period. In cases where illness is the plea for absence from examinations, a medical certificate must be presented on the appropriate form, which may be obtained from the Dean's office.

2. Undergraduate students in all years as well as those taking work in the Summer Session will not be considered as having passed unless they obtain 50 per cent. or more in each subject.

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

4. If a student's general standing in the final examinations of any year is sufficiently high, the Faculty may grant him supplemental examinations in the subject or subjects in which he has failed. Notice will be sent to all students to whom such examinations have been granted.

5. Supplemental examinations will be held in September. Special examinations will not be granted, except by special permission of the Faculty, and on payment of a fee of \$7.50 for each paper. Application for special examinations must be made at least two weeks prior to the scheduled meetings of the Faculty in October and February.

6. Applications for supplemental examinations, accompanied by the necessary fees (see *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 the Faculty. Such permission will be granted only when the 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

100 [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

300 [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 British Columbia farms and a general study of the farm business in Europe, the United States, and Canada.

References and assigned readings from Warren, Adams, and others.

Two lectures and one laboratory a week. The staff. 3 units.

301 [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. Mr. Clement.

3 units.

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

400 [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. Mr. Clement. 3 units.

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

500 [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 301.

501 [51]. *Agricultural Economics*.—The general principles of marketing, price fixing, marketing by commission, the influence of the market on production, co-operation; special topics and assigned reading. (Open to graduates only.) 3 to 5 units.

Prerequisite: Agricultural Economics 400.

Commerce

Senior Matriculation standing or First Year University or their equivalent is required for entrance to this option.

This grouping of courses takes the place of the former grouping of courses leading to the B. Com. and B.S.A. degrees.

FIRST AND SECOND YEARS

Agriculture 100, English 100 and 101 and English 200 or 205, Chemistry 100, Mathematics 100 and 201, Biology 100, Commerce 251, an elective from Group A, an elective from Group B.

THIRD YEAR

Commerce 191, Commerce 261, Agricultural Economics 301, a pure science, two electives from courses in Agriculture.

FOURTH YEAR

Economics 300, Economics 335, Commerce 356, and three electives from Agriculture.

FIFTH YEAR

Commerce 371, Commerce 381, Commerce 391, two electives from Agriculture, undergraduate essay (to satisfy the Departments of Agricultural Economics and Commerce).

Department of Agronomy

General Agronomy.—(Included in Agriculture 100 in the First Year.)

202 [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.

211 [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.

303 [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.

304 [4]. *Range and Pasture Management.*—A study of range lands and arable pastures. Ecological relations of range and pasture vegetation. Experimental methods and maintenance problems.

Two lectures and one laboratory a week. 3 units.

312 [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 312.)

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

Prerequisite: Bacteriology 201.

Five hours a week. 3 units.

313 [13]. *Drainage and Irrigation.*—Principles underlying drainage and irrigation practices. Field work and drainage problems.

Prerequisite: Agronomy 211.

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

314 [14]. *Soil Conservation*.—Land use, erosion, and inter-relations of forest, range, and arable lands.

Prerequisite: Agronomy 211.

Two lectures and one laboratory a week. Second Term.

1½ units.

405 [5a]. *Field Crops (Advanced)*.—Studies of the climatic, ecological, and biological factors which influence the distribution and world production of field crops.

Two lectures and one laboratory a week. First term. 1½ units.

406 [5b]. *Field Crop Technology*.—A study of the chemical constituents of field crops as influenced by climate, soil, and variety, with applications to the processing of farm crops.

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

407 [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 310.

Two lectures and one laboratory a week.

3 units.

415 [15]. *Soils (Advanced)*.—Interaction of physical, chemical, and biological forces of the soil; soil morphology, classification, and mapping.

Prerequisite: Agronomy 211.

Three lectures a week.

3 units.

421 [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.

422 [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.

423 [23]. *Seminar*.—Discussion of literature relative to student problems.

1 unit.

425 [25]. *Undergraduate Essay*.—The preparation of a report on an applied problem.

3 units.

430 [30]. *Directed Studies*.—Systematic work on an approved problem.

3 units.

500 [50]. *Applied Plant Genetics*.—The genetics of crop plants. Lectures, seminar periods, and research.

3 to 5 units.

510 [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.

520 [52]. *Soil Analysis*.—Soil analysis based on the work given in Agronomy 415, including a detailed study of a representative soil.

Prerequisites: Agronomy 211 and 415.

One lecture and two laboratories a week. 3 units.

Department of Animal Husbandry

General Animal Husbandry.—(Included in Agriculture 100 in the First Year.)

215 [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.

317 [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.

320 [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.

323 [23]. *Animal Breeding*.—A study of variation and inheritance in animals; selection and mating systems for the improvement of livestock; herd, flock, and pedigree studies; hereditary defects and lethals; methods of analyzing animal breeding data.

Three lectures a week. 3 units.

324. *Advanced Livestock Judging*.—Open only to Third Year students in Animal Husbandry. An intensive laboratory course in judging dairy cattle. Students will be required to make judging trips to near-by farms.

Prerequisite: Animal Husbandry 215.

One laboratory, 3-5 hours a week. Second Term. 1½ units.

418 [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.

419 [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.

421 [21]. *Animal Diseases, Hygiene, and Sanitation*.—A microscopic study of organs and tissues, including histology, embryology, and pathology. Applied studies in the recognition 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 201.

Two lectures and one laboratory a week. 3 units.

422 [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.

425 [25]. *Undergraduate Essay*. 3 units.

430 [30]. *Directed Studies*. 3 units.

500 [50]. Research in production, management, and marketing of animals and animal products. 3 to 5 units.

501 [51]. Research in problems associated with physiological disturbances in animals. 3 to 5 units.

502. *Research in Animal Nutrition*.—Directed research in nutritional problems related to animal production. 3 to 5 units.

503. *Research in Animal Breeding*.—Directed research in problems associated with improving the hereditary worth of farm animals. 3 to 5 units.

504. *Graduate Seminar*.—A seminar period for all graduate students in Animal Husbandry.

One hour a week. 1 unit.

Department of Dairying

General Dairying.—(Included in Agriculture 100 in the First Year.)

201 [1]. *Butter-Making*.—An elementary course.
Two lectures and one laboratory a week. First Term. 1½ units.

202 [2]. *Cheese-Making*.—An elementary course.
Two lectures and one laboratory a week. Second Term. 1½ units.

303 [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 1946-47 and alternate years.)

304 [4a]. *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 201.
Four hours a week. First term. 1½ units.

305 [4b]. *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 201.
Four hours a week. Second term. 1½ units.

406 [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.

407 [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 201 and Dairying 304.

One lecture and two laboratories a week.

3 units.

413 [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 304.

One lecture and two laboratories a week. Second Term.

1½ units.

425 [25]. *Undergraduate Essay*.—A written report on a prescribed laboratory study.

Fourth Year.

3 units.

430 [30]. *Directed Studies*.—Systematic work on an approved problem.

3 units.

500 [50]. Directed systematic studies of defined phases of the work introduced in Dairying 304 or 407.

3 to 5 units.

(Open to graduates only.)

Food Technology

Senior Matriculation or First Year University or an equivalent is required for entrance to this grouping of courses, which is designed to equip the student with a broad knowledge of the sciences underlying the preservation and manufacture of foodstuffs and to provide instruction in the general techniques of the food laboratory.

FIRST AND SECOND YEARS

English 100 and 101 and English 200 or 205

Chemistry 100 and 200

Mathematics 100

Language of Matriculation 100 or 101

Physics 100

Biology 100

Bacteriology 201

Agriculture 100

THIRD YEAR

Agronomy 211	3 units.
Chemistry 300	3 units.
Engineering or Mechanics	3 units.
Dairying 304 and 305	3 units.
Agronomy and Horticulture (Identification and Standards)	3 units.
Elective	3 units.

The FOURTH AND FIFTH YEARS will include as a minimum:

Chemistry	6 additional units.
Engineering or Mechanics	3 additional units.
Applied Microbiology	6 additional units.
Animal Husbandry and Poultry Husbandry	3 units.
Dairying and Statistics	3 units.
Nutrition	3 units.
Essay	3 units.

Electives up to a total of 36 units for the two years.

The undergraduate essay may be written in any one of the departments.

Department of Farm Mechanics

101. *Farm Mechanics*.—Course to be outlined.

(For Agricultural Engineering see Applied Science.)

Department of Horticulture

General Horticulture.—(Included in Agriculture 100 in the First Year.)

213 [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.

314 [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.

315 [15a]. *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.

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

Note. Course 315 takes the same hours as Course 314 in the time table, to give a combined 3 units of work in the marketing and processing of horticultural crops.

316 [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.

$1\frac{1}{2}$ units.

317 [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.

$1\frac{1}{2}$ units.

418 [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.

$1\frac{1}{2}$ units.

419 [15b]. *Special Horticultural Crops*.—A study of the growing and marketing of special horticultural crops—fruits, vegetables, nuts—such as citrus fruits, bananas, pineapples, figs, dates, avocados, sweet potatoes, mushrooms, peanuts, walnuts, filberts, almonds, pecans, etc.

Three lectures a week. Second Term.

$1\frac{1}{2}$ units.

420 [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.

Three lectures a week.

3 units.

425 [25]. *Undergraduate Essay*.—A satisfactory report on some approved subject upon which the student has done special investigational work.

3 units.

430 [30]. *Research in Horticulture*.—Directed study on some special problem in the applied phases of horticulture.

3 units.

500 [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.

510 [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. 1½ units.

Plant Nutrition

340. *Food Values of Horticultural Crops*.—A study of the food values of horticultural crops. This course comprises a consideration of factors which affect these values, such as variety, locality, climate, photoperiod, soil type, fertilizer, and cultural practice. Comparisons are made of local B. C. grown fruits and vegetables with similar imported competing produce; also crops ordinarily grown under glass as contrasted with field grown. Various methods of food assay, chemical and biological, vitamin determinations, etc. are studied in this course.

Two lectures, one laboratory. First Term. 1½ units.

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

(Second Term work not offered in 1946-47.)

441 [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 331.)

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.

442 [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 332.)

Reference: Miller, *Plant Physiology*, latest edition, McGraw-Hill.

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

443 [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.

545 [51]. *Research in Plant Nutrition*.—Directed study on some special problem in plant nutrition or applied plant physiology.

3 to 5 units.

547 [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

General Poultry Husbandry.—(Included in Agriculture 100 in the First Year.)

200 [12a]. *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. $1\frac{1}{2}$ units.

201 [12b]. *Fundamentals of Poultry Husbandry*.—Breeds, breeding, judging, selection, culling, incubation, brooding, egg grading, marketing, general management.

References: *American Standard of Perfection*, 1942-1944; Lippincott and Card, *Poultry Production*, sixth edition, 1939, Lea and Febiger; Jull, *Poultry Husbandry*, McGraw-Hill.

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

300 [13a]. *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, cooperative marketing, prices.

Reference: Benjamin and Pierce, *Marketing Poultry Products*, Wiley.

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

301 [13b]. *Advanced Marketing*.—Organization in marketing, including the history and development of cooperative marketing of eggs and poultry; domestic and export trade.

Two lectures and one laboratory a week. Second Term.

$1\frac{1}{2}$ units.

310 [14a]. *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. $1\frac{1}{2}$ units.

311 [14b]. *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.

$1\frac{1}{2}$ units.

400 [16a]. *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, *Successful Poultry Management*, McGraw-Hill; Charles and Stuart, *Commercial Poultry Farming*, Interstate Printing Co.; Knandel, *Profitable Poultry Keeping*, Orange Judd.

Two lectures and one laboratory a week. First Term, Fourth Year.

$1\frac{1}{2}$ units.

401 [16b]. *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: Hartman and Vickers, *Hatchery Management*; 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.

$1\frac{1}{2}$ units.

405 [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. $1\frac{1}{2}$ units.

410 [19a]. *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. $1\frac{1}{2}$ units.

411 [19b]. *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. $1\frac{1}{2}$ units.

415 [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 and Febiger; Biester and Devries, *Diseases of Poultry*, Iowa State College.

Two lectures and one laboratory a week. Second Term, Fourth Year. $1\frac{1}{2}$ units.

420 [17]. *Physiology of Sex Reproduction, and Endocrinology*.—An advanced course dealing with the fundamentals of egg production and reproduction in the domestic fowl. Recent advances in the knowledge of endocrinology as affecting poultry. Study of recent literature.

References to be assigned.

One lecture and two laboratory periods a week. Second Term, Fourth Year. Credit for graduate work is given for this course.

- 425 [25]. *Undergraduate Essay*. 3 units.
- 430 [30]. *Research* (Directed). 3 units.
- 500 [19c]. *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.)
- 540 [50]. *Research* (Directed). 3 to 5 units.
(Open to graduates only.)

Department of English

SECOND YEAR

205 [3 and 4]. *Composition*.—A course 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

300 [1a]. *Principles of Genetics*.—This course is the same as Biology 300. (See page 131.)

Prerequisite: Biology 100.

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

1½ units.

301 [1b]. *Principles of Genetics*.—This course is the same as Biology 301. (See page 131.)

Prerequisite: Genetics 300.

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

1½ units.

302 [1c]. *Problems in Genetics*.—This course is the same as Biology 302. (See page 131.)

Prerequisites: Genetics 300 and 301.

Three hours a week.

3 units.

303 [1d]. *Seminar in Genetics*.—This course is the same as Biology 303. (See page 131.)

Prerequisites: Genetics 300 and 301.

Three hours a week.

3 units.

**Department of Bacteriology and
Preventive Medicine**

(For details of courses see pages 127-130.)

Department of Biology and Botany

(For details of courses see pages 130-137.)

Department of Chemistry

(For details of courses see pages 137-143.)

Department of Civil Engineering

(For details of courses see pages 258-264.)

Department of Classics

(For details of courses see pages 144-149.)

Department of Commerce

(For details of courses see pages 149-152.)

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

(For details of courses see pages 152-159.)

Department of English

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

Department of French

(For details of courses see pages 169-172.)

**Department of Geology and
Geography**

(For details of courses see pages 172-181.)

Department of German

(For details of courses see pages 181-183.)

Department of History

(For details of courses see pages 183-190.)

Department of Mathematics

(For details of courses see pages 195-199.)

Department of Philosophy and Psychology

(For details of courses see pages 199-205.)

Department of Physics

(For details of courses see pages 205-211.)

Department of Spanish

(For details of courses see pages 214-216.)

Department of Zoology

(For details of courses see pages 216-221.)

1946-47

1946-47

THE
FACULTY
OF
LAW

1946-47

1946-1947

1946-47

FACULTY OF LAW

General

The course in the Faculty of Law covers a period of three years and prepares students for admission to the practice of law and for business and government service. The curriculum is based on the standard curriculum adopted by the Canadian Bar Association for instruction in the common law system. The degree granted is that of Bachelor of Laws (LL.B.)

Admission

The general requirements for admission to the University are given on pages 34-36 of the University Calendar.

Candidates must present evidence of having successfully completed not less than two years of work in the Faculty of Arts and Science at the University of British Columbia, or its equivalent at an approved university.

Undergraduates in other faculties or schools of law may, upon application, be granted such standing as the Faculty may determine.

General University Regulations

General University regulations concerning discipline, health, and other matters as detailed on pages 28-34 of the University Calendar are applicable to students in the Faculty of Law.

Registration

Application for entrance to the Faculty of Law must be made to the Registrar of the University not later than September 20th.

It is recommended that those planning to enter the Faculty interview the Dean as early as possible in their University course.

Combined Course

Students who have completed their matriculation requirements may take a combined course in the Faculties of Arts and Science and of Law consisting of three years in the Faculty of Arts and Science at the University followed by three years in the Faculty of Law. The degree of Bachelor of Arts will be granted to such candidates on completion of the Second Year in the Faculty of Law, and the degree of Bachelor of Laws will be granted on completion of the Third Year in the Faculty of Law.

Attendance and Examinations

A student who fails to comply with the regulation in respect of attendance at lectures, except for reasons deemed satisfactory by the Faculty, may, upon the recommendation of the Faculty, be

required by the Senate either to repeat the work of the year or to withdraw from the Faculty.

Examinations will be held in April at the close of each session except in respect of those subjects which are given in the First Term only, when examinations will be held immediately prior to the Christmas vacation.

A student, in order to pass, must obtain at least 50 per cent. in each subject. 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.

A student must pass in all subjects of his year before being admitted to the succeeding year.

A student who has made an average of at least 50 per cent. on the work of the year, but who has failed at the regular examinations in not more than two subjects, may be granted supplemental examinations in the subject or subjects in which he has failed. Notice will be sent to students to whom such supplemental examinations have been granted.

Supplemental examinations will be held in September. Applications for supplemental examinations must be in the hands of the Registrar on or before August 15th, and must be accompanied by the required fee.

A student who does not meet the above requirements in any year may, on the recommendation of the Faculty, be required by the Senate either to repeat the work of the year or to withdraw from the Faculty.

Admission as Barristers and Solicitors

Admission to the Bar of the Province of British Columbia is governed by the provisions of the Legal Professions Act and the regulations of the Law Society of British Columbia. Information concerning the requirements may be obtained on application to the Secretary of the Law Society, Court House, Victoria, B. C.

The examinations held in the Faculty are co-examined by examiners appointed by the Law Society, and applicants for admission to the Bar who hold the degree of LL.B. from the University are granted exemption by the Law Society from the professional examinations prescribed by the regulations of the Society.

Prizes, Bursaries, Scholarships

A number of University prizes, bursaries, and scholarships, are open to students in the Faculty of Law. See pages 44-85 of the University Calendar.

Moot Court

Students in the Faculty will be required to argue at least one case before the Moot Court in their First Year and one in their Second Year.

COURSES OF INSTRUCTION FIRST YEAR

Contracts

Text-books: Wright, *Cases on the Law of Contracts*; Cheshire and Fifoot, *Law of Contracts*; Anson, *Law of Contract*; Williston, *Contracts*; Pollock, *Principles of Contracts*; Salmond and Williams, *Contracts*.

Three hours a week. Mr. Curtis.

Criminal Law

Text-books: Criminal Code; Tremear; Crankshaw; Kenny, *Outlines of Criminal Law*.

Two hours a week. Mr. Remnant.

History of English Law

Text-books: Holdsworth, *History of English Law*; Pollock and Maitland, *History of English Law*; Maitland and Montague, *Sketch of English Legal History*; Potter, *Historical Introduction to English Law*; MacRae, *History of English Law*.

Two hours a week. Mr. Read.

Procedure I

Text-books: Odgers, *Pleading and Practice*; Carter, *A History of the English Courts*; Supreme Court Rules and County Court Rules; Radcliffe and Cross, *The English Legal System*.

Two hours a week, Second Term. Mr. Brazier.

Property I

Text-books: Read and Macdonald, *Cases on Personal Chattels*; Williams, *Real Property*; Cheshire, *Modern Real Property*; Williams, *Personal Property*; Goodeve, *Personal Property*.

Three hours a week. Mr. Read.

Torts

Text-books: Wright, *Cases on the Law of Torts*; Salmond, *The Law of Torts*; Prosser, *Torts*; Pollock, *The Law of Torts*; Winfield, *Text-book on the Law of Tort*; Charlesworth, *The Law of Negligence*.

Three hours a week. Mr. Curtis.

SECOND YEAR

Agency and Partnership

Text-books: MacRae and Wright, *Cases on Agency*; Bowstead, *Agency*; Pollock, *Law of Partnership*.

Two hours a week. Mr. Read.

Bills and Notes

Text-books: Falconbridge, *Banking and Bills of Exchange*; Mac-laren, *Bills, Notes, and Cheques*.

Two hours a week, First Term. Mr. Read.

Sales

Text-books: Falconbridge, *Cases on the Sale of Goods*; Benjamin, *Sale*; Williston, *Sales*.

Two hours a week.

Equity

Text-books: Smith and Read, *Selection of Cases on Equity*; Ashburner, *Equity*; Hanbury, *Modern Equity*; Maitland, *Equity*.

Two hours a week. Mr. Sheppard.

Insurance

Text-book: Insurance Act of British Columbia.

Two hours a week, Second Term. Mr. Curtis.

Procedure II

Text-books: Odgers, *Pleading and Practice*; Supreme Court Rules.

Two hours a week. Mr. Justice Wilson.

Property II

(a) LANDLORD AND TENANT.

Text-books: Williams, *Canadian Law of Landlord and Tenant*; Foa, *Outline of the Law of Landlord and Tenant*; Rental Regulations (Dom.).

Mr. Maguire.

(b) WILLS.

Text-books: Bailey, *Law of Wills*; Hawkins, *Wills*; Jarman, *Wills*; Theobald, *Wills*; The Wills Act.

Mr. Bray.

(c) EXECUTORS AND ADMINISTRATORS.

Text-books: Williams, *Executors and Administrators*; Widdifield, *Law and Practice Relating to the Passing of Executors' Accounts*; Trustee Act.

Three hours a week. Mr. Braidwood.

Public International Law

Text-books: Oppenheim, *International Law*; Brierly, *The Law of Nations*; MacKenzie and Lang, *Canada and the Law of Nations*.
Three hours a week. Mr. MacKenzie.

THIRD YEAR

Conflict of Laws

Text-books: Falconbridge, *Cases on the Conflict of Laws*; Cheshire, *Private International Law*; Dicey, *Conflict of Laws*.
Two hours a week. Mr. Fisher.

Constitutional Law

Text-books: MacRae, *Cases on Constitutional Law*; Clement, *Canadian Constitution*; Lefroy, *Short Treatise on Canadian Constitutional Law*.

Two hours a week. Senator Farris.

Domestic Relations

Text-book: Eversley, *Domestic Relations*.

Two hours a week, Second Term. Mr. Read.

Evidence

Text-books: Phipson, *Law of Evidence*; Cockle, *Leading Cases on Evidence*; Wigmore, *Evidence*.

Two hours a week. Mr. Justice Coady.

Legislation

Text-books: Maxwell, *The Interpretation of Statutes*; Craies, *Statutory Law*.

Three hours a week, Second Term.

Mortgages and Suretyship

Text-books: Falconbridge, *Mortgages*; Hanbury and Waldoek, *Law of Mortgages*; Turner, *Equity of Redemption*.

Three hours a week, First Term. Mr. Curtis.

Procedure III

Text-books: Court of Appeal Act and Rules; Supreme Court Act (Dom.) and Rules.

Two hours a week. Mr. Justice Bird.

Company Law

Text-books: Palmer, *Company Law*; Stiebel, *Company Law and Precedents*; MacRae, *Material on Company Law*; The Companies Act of British Columbia.

Two hours a week. Mr. Curtis.

Shipping

Text-books: Mayers, *Admiralty Law and Practice*; Canada Shipping Act.

One hour a week: Mr. Justice Smith.

Taxation

Text-books: Stikeman, *Lectures on Taxation*; Konstam, *Income Tax*; Ratcliffe and MacGrath, *Income Tax Law*; Plaxton, *Canadian Income Tax Law*.

Two hours a week, First Term.

1946-47

DOUBLE COURSES

1946-47

1946-47

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 100 and 101, Mathematics 100, a language course numbered 100-199, Chemistry 100, in the First Year; English 200, a language course numbered 200-299, Bacteriology 201, in the Second Year; Biology 100, Physics 90 or 100, Zoology 200, Psychology 100 or 101, in the First, Second, or Third Years; Bacteriology 301, Nursing 151, Nursing 152, 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 91-93) except as follows:

1. Physics 100 and Chemistry 100 must be taken. The passing grade for each of these subjects and for Mathematics 100 is 60 per cent. (See also *Admission to Applied Science*, page 226.) Students are recommended to take Mathematics 202.
2. Chemistry 200 (except for Forestry), Geology 201 and 202, Mathematics 202, Physics 200, Physics 300, or Physics 301 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 First, Second, Third, and Fourth Years of Applied Science. The degree of B.A. is conferred on completing the Fifth Year of this course.

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

Except as noted below students may obtain the degrees of B.A. and B.Com. concurrently in six years on completion of 15 units of work above the requirements of the B.Com. degree and so chosen 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. Students intending to qualify for the two degrees are advised to obtain the necessary forms from the Registrar's office and to have their course approved by the Head of the Department of Commerce and the Dean.

DOUBLE COURSES FOR THE DEGREES OF B.Com. and B.S.F.

Students who in the session 1946-47 are eligible to enter the Third Year of the combined course leading to the degrees of Bachelor of Commerce and Bachelor of Science in Forestry will be permitted to proceed to the completion of the degrees as prescribed on pages 323 and 324 of the Calendar announcement of 1945-46. No students, however, will be accepted in the Second Year of the combined course.

After the conclusion of the session 1948-49 the degree of B.S.F. will no longer be granted in combination with the degree of B.Com.

Students eligible to enter Second Year Commerce in the session 1946-47 will be able to select a Forestry option to obtain the degree of B.Com. in four years.

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.F.

After the conclusion of the session 1949-50 the degree of B.S.A. will no longer be granted in combination with the degree of B.Com.

ENDOWMENTS AND DONATIONS

April 1st, 1945, to May 15th, 1946

Fellowships and Scholarships

- Canadian Pulp and Paper Association, Western Branch, a fellowship of \$1,000 for graduate studies in Forestry.
- Shell Oil Company Limited, \$1,000, to provide a fellowship for research in Chemistry, Chemical Engineering, Mechanical Engineering, Geology, Physics, or Geophysics, \$750 to be paid to the winner of the fellowship and the balance to the University for equipment and supplies in connection with the research work.
- Standard Oil Company of British Columbia Fellowship (replacing the original Scholarship), \$1,100.
- The International Brotherhood Pulp, Sulphite, and Paper Mill Workers, Ocean Falls, Local No. 312, a scholarship of \$200 awarded by the Brotherhood and available for a student resident in Ocean Falls, Port Alice, Port Mellon, Powell River, or Woodfibre, for attendance in the First Year of the University.
- Pacific Mills Limited, a scholarship of \$250 to children of employees in Pacific Mills and Canada Boxes Limited who are resident in British Columbia.
- Mr. R. J. Pop, a scholarship of \$150 in Zoology.
- Dorothy and William Dorbils Scholarship, \$2,000, for graduate studies in humanities or pure sciences (to be awarded in 1950).
- U.B.C. Alumni at Summerland, B. C., a scholarship of \$250 awarded by a citizens' committee to a graduate of Summerland High School for attendance at the University of British Columbia.
- Wartime Convalescent Homes, War Charity Fund, Inc., Vancouver Division, \$10,000, the interest of which is to be used for a scholarship available for the sons or daughters of R.C.A.F. veterans.

Prizes

- B. C. Packers Limited, four prizes for essays on Fisheries, two of the value of \$100 each, and two of \$50 each.
- Canadian Institute of Mining and Metallurgy, a prize of \$100 for a Master's thesis on Mining, Geology or Metallurgy.
- Carswell Company Limited, Publishers, Toronto, Ontario, three book prizes to the value of \$20 each for the leading student in each year of the course in the Faculty of Law.
- J. W. Dafoe Foundation, two prizes of \$100 each for essays in the Department of History and the Department of Economics, Political Science, and Government on subjects dealing with international co-operation.
- Mr. J. R. J. Llewellyn Jones, a prize of \$50 for outstanding research ability in the field of entomology.
- Mrs. D. A. McKee, a prize of \$30 for highest standing in Third Year Agriculture.
- Mr. T. Ingledow, two prizes of \$50 each in Electrical Engineering.
- H. R. MacMillan Export Company Limited, \$750 a year for three years for prizes in Forestry.
- Anonymous, \$1,000, the interest of which is to provide \$30 as an annual essay prize in International Relations.

Bursaries

- Mr. and Mrs. J. Stanley McLean, \$1,000; four bursaries of \$250 each (session 1946-47), for scholastic ability and financial need, with preference to students whose homes are in remote parts of British Columbia.
- Pacific Meat Company, a bursary of \$200 for research related to problems of the meat industry.
- Provincial Council of British Columbia, Canadian Daughters' League, an additional bursary of \$100 for a woman student entering the Teacher Training Course.
- The Kiwassa Club of Vancouver Bursaries, four bursaries of \$150 each, available to assist women students proceeding to the course in Public Health Nursing or Social Work.
- The Jack Cohen Bursary, \$1,500, donated by Mr. S. J. Cohen to provide an annual bursary of \$150 for ten years for a student entering the Fourth Year of Commerce.
- Mrs. Angela Bell, \$1,500, to provide for ten years an annual bursary of \$150, to be known as "The Nat Bell Bursary."

Increase in Scholarships, Prizes, and Bursaries

\$1,000 Anonymous Bursary increased to \$1,500, to assist the student to whom the bursary had been awarded to continue with his course in Medicine. The Mary C. Lipsett Bursary, from \$250 to \$300.

Loan Funds

Mr. H. R. MacMillan, \$500 for Forestry Loan Fund.
 Mrs. Douglas Stewart, \$200 for the President's Fund.
 Alumnae, University of Toronto, \$50 for the Dean of Women's Fund.
 Dr. Laval Leeson, \$10 for the President's Fund.
 Anonymous donation of \$750 for the President's Fund, to be used for bursaries and scholarships.

Donations for Research

Mrs. W. L. Armstrong, Endowment Fund for Medical Research.
 Anonymous donation, \$25,000, to be allocated as an endowment to the research funds of the University to be used towards research in Preventive Medicine with the proviso that from time to time it may be used for any research purpose other than Preventive Medicine.
 B. C. Industrial and Scientific Research Council, \$2,000 for establishing a series of permanent study plots on the University Forest Reserve at Pitt Lake, B. C., this project to be known as "Silvicultural Survey of the University Forest Reserve."
 Canadian Fishing Company Limited, \$800 for research on herring meal.
 Dr. W. Chalmers, Western Canadian Chemical Industries Limited, \$400 and \$265 for research in fish oils, or for an addition to the poultry buildings.
 Ocean Industries Laboratory, \$400 for research on the use of stickwater in poultry feeding.
 Safeway Stores Limited, \$2,000 to complete the Poultry Farm Survey and to expand the studies on poultry meats.
 Surrey Co-operative Association, \$1,000 for research work in poultry nutrition.
 Dean G. G. Cosens, Faculty of Forestry, University of Toronto, Ontario, \$100 for research in Forestry.

Endowment of Chair of Instruction

Mr. Robert Fiddes, \$5,000 a year for a period of ten years to establish a Chair of Music.

Awards Made Available Through the Vancouver Men's Canadian Club

Lauder, Mercer, and Company Limited, \$250 a year for an indefinite period, to provide a bursary for a male student registered in the final year of the Commerce Course.
 Teamsters' Joint Council No. 36 (Mr. Birt Showler, Secretary), a bursary of \$250 a year for five years, available for a son or daughter of a member of the International Brotherhood of Teamsters in British Columbia for attendance at the University.
 Mr. George W. Norgan, \$10,000 to provide a scholarship of \$1,000 a year for ten years in the Faculty of Law.
 Mr. J. W. Pattison, \$1,000 to provide a scholarship of \$200 a year for five years in Social Service.
 Alaska Pine Company Limited (Mr. L. J. Koerner, President), \$6,000 to provide scholarships for ten years as follows:
 \$150 in Forestry
 \$150 in Wood Chemistry
 \$150 in Commerce
 \$150 in Economics.
 The Vancouver Daily Province, \$1,250 to provide a scholarship of \$250 a year for five years in Government or Political Science.
 Mr. George T. Cunningham, \$750 to provide a scholarship of \$150 a year for five years in Pharmacy.
 Mr. P. W. Burbidge, \$250 a year for an indefinite period for scholarships.
 Brigadier Noel D. Lambert, President and Managing Director of Northern Construction, \$1,000 to provide scholarships in Engineering in the amount of \$200 a year for five years.

- General Construction, Campbell River, B.C. (Mr. John Boyd, President and Managing Director), \$2,500 to provide scholarships of \$500 a year for five years.
- Mr. H. R. MacMillan, \$2,500 for annual scholarships to the value of \$500 a year for five years.
- Major-General D. M. Hogarth, Toronto, \$250 a year for ten years, to be allocated by the Committee on Prizes, Scholarships, and Bursaries.
- Jno. Inglis and Company, Toronto (Mr. A. L. Ainsworth, Vice-president and Managing Director), \$250 a year for ten years, to be allocated by the Committee on Prizes, Scholarships, and Bursaries.
- Canadian Forest Products Limited, an annual scholarship of \$500 for five years in Forestry.
- Northern Electric Company Limited (Mr. T. C. Clarke, District Manager), \$500 to provide an annual scholarship of \$100 for five years in Electrical Engineering.

Donations for Buildings

- Bequest from Mr. Jonathan Rogers, \$75,000 for the erection of a building to house the Department of Home Economics, with a provision that the residue of the estate be paid to the University to be invested by it and the income derived therefrom to be used for bursaries.
- The B. C. Industrial and Scientific Research Council, \$5,147.16 for a Poultry Mortality Building, the money to be handled by the Research Council and this building to be constructed near the poultry plant at U.B.C.

Miscellaneous

- Bequest from Mr. Thomas Holmes Johnson providing \$25,000 as an endowment fund to be known as "The Thomas Holmes Johnson Bursary" to provide bursaries to be awarded to students from Prince Rupert.
- Mr. H. R. MacMillan, \$3,000 for organizing and establishing a Forest Library.
- Advertising and Sales Bureau of Vancouver Board of Trade, \$1,000 for a course in Advertising.
- British Columbia Packers Limited, \$7,500 for a course in Fisheries.
- Mr. J. W. McConnell, President, The McConnell Foundation, \$25,000.
- Mr. R. J. Pop, complete museum collection of Canadian fur-bearing animals, as soon as suitable accommodation can be provided for this exhibit.
- I.O.D.E., Vancouver Municipal Chapter, \$400 for the purchase of reference books for the University Library.
- Lions' Ladies' Club of Vancouver, \$1,000 for a library for the use of service men and service women attending the University.
- Mrs. Eva Bene, oil painting.
- Mrs. R. L. Reid, the honorary degree gown, cap, and hood belonging to the late Dr. R. L. Reid.
- Spring Session Association, \$237.66 for the University Library.
- Mrs. A. J. Taylor and Major E. D. Taylor, Zeiss telescope.
- Valedictory Gift of Class of 1945, two pairs of ornamental wrought iron gates for the entrance to the Stadium.
- Mrs. J. H. Senkler, gift of books to the Law Faculty.
- The Powell River Company, Limited, gift of a film entitled "A River of Paper."

Gifts of Books and Periodicals to the Library

From Dr. H. W. Riggs, Dr. W. A. Whitelaw, Dr. P. A. McLennan, estate of the late Mr. A. G. Smith, Dr. Olive Sadler, Mr. Walter Hardwick, Mrs. J. K. Henry, Mr. Cecil Killam, Dr. Sylvia Thrupp, Miss C. J. de V. Van Steenwyck, Miss Lucille Malkin, Dr. G. M. Ehlers, Dr. L. M. Greene, Dr. Annie H. A. Henderson, Mr. J. S. Garrett, Dr. Basil Matthews, Mrs. L. W. Peel, Mr. T. Dowbor, Mrs. H. L. Bailey, Sir Thomas White, the British Columbia Underwriters' Association, the Henry George Club, the Carnegie Institution, Washington, D. C., the Eastman Kodak Company, Rochester, N. Y., the Vancouver General Hospital, the Vancouver Medical Association Library, the Missionary Research Library, New York, the Victoria Committee of France-Canada, the Provincial Library, Victoria, B. C., the Red Cross Superfluity Shop, Vancouver, B. C.

Gifts of Books to the Law Library, Faculty of Law

The Attorney-General of British Columbia, B. C. Statutes.
 The Attorney-General of Saskatchewan, Saskatchewan Statutes.
 The Attorney-General of Nova Scotia, Nova Scotia Statutes.
 Mrs. K. M. Beckett, Case Books.
 Mr. D. Braidwood, Case Books.
 Mrs. Horace Buck, Halsbury Laws of England.
 Messrs. Campbell, Meredith, and Beckett, Revised Reports.
 Dean G. F. Curtis, textbooks.
 Messrs. Davis, Hossie, and Company, Nominate Reports.
 Mr. John Farris, Halsbury Laws of England.
 Mr. M. Gourlay, miscellaneous texts.
 Mr. Garfield King, Harvard Law Review, textbooks.
 Mr. T. E. Ladner, Case Books.
 Mr. A. R. MacDougall, Canada Law Reports (unbound).
 Mr. Justice Macfarlane, Reports.
 Mr. Edwin Meredith, Ontario Law Review 1-31.
 Messrs. McPhillips & McPhillips, miscellaneous textbooks.
 Professor Frederick Read, miscellaneous textbooks.
 Mr. H. Richmond, Western Weekly Reports (unbound).
 Mr. R. H. Tupper, Harvard Law Review.
 The Vancouver Law Students' Society, textbooks.
 Magistrate H. S. Wood, miscellaneous.
 Mrs. J. H. Senkler, rare old Nominate Reports, etc.

Department of Biology and Botany

Mr. J. W. Eastham, Provincial Plant Pathologist, Vancouver, B. C.: A valuable collection of Myxcomycetes and a number of books and publications dealing with this group.
 Mrs. Irene Mounce Stewart, West Vancouver, B. C.: A valuable set of books and pamphlets on Mycology and Forest Pathology.

(For Herbarium and Botanical Gardens)

Seeds and Herbarium Specimens

ENGLAND	Royal Botanic Gardens, Kew
IRELAND	Botanic Gardens, Glasnevin
NEW ZEALAND	Botanic Gardens, Christchurch
SWITZERLAND	Jardin Botanique, Champex
MACKENZIE RIVER, B. C.	Dr. C. H. Crickmay
SPIDER ISLAND, B. C.	Sergt. H. F. Harp

Department of Forestry

Dr. I. McT. Cowan: Samples of wood of *Pinus flexilis* and *Larix Lyallii*, collected in the B. C. Rockies.
 Mr. H. R. MacMillan: Copies of recent publications for distribution to senior students.
 H. R. MacMillan Export Co.: \$5,000 for development work on the University Research Forest.
 Mr. A. E. Collins, B. C. Forest Service: Sections of trees from Northern British Columbia.
 The Timberman, B. C. Lumberman, Timber of Canada: Back issues to complete files.
 B. C. Lumber and Shingle Manufacturers' Association: A complete transcript of the recent hearings of the Royal Commission on Forestry.

Department of Geology and Geography

Mr. George F. Sternberg, Hays Museum, Kansas: Oredont skull.
 Professor George A. Gillies, Vancouver: Specimen of asbestos and stichtite from South Africa and samples of oil from Pitt Meadows.
 Mr. H. E. Odum, Vancouver: Eighteen publications on Geology and Mining.
 Mr. Charles Ney, Pioneer Gold Mines: Rocks and ores from Vananda Mines, Texada Island, B. C.
 Dr. S. J. Schofield: Picture of the first staff of the University.

Department of Horticulture

- Dominion Experimental Station, Summerland, B. C.: Shipments of fruit specimens of pears, apples, and grapes for systematic study.
- Dominion Experimental Station, Saanichton, B. C.: Fruit specimens for systematic study.
- Mr. W. H. Robertson, Provincial Horticulturist, Victoria, B. C., and district horticulturist and field men: Twelve boxes of fruit variety specimens for systematic study.
- The Dominion Department of Agriculture, the Provincial Department of Agriculture, the B. C. Co-operative Seed Association, Brackman-Ker Milling Co., Buckersfield's Ltd.: Contributions toward the cost of the Vegetable Seed Trial Project.
- Mr. Rexford S. Marshall: \$100 for additional work in the Department.
- The Dominion Department of Agriculture, Plant Products Laboratory, Vancouver: Seed Testing Demonstration materials.

Department of Zoology (For the Museum of Zoology)

Insects:

- Dr. I. McT. Cowan, Vancouver: Ectoparasites of birds and mammals.
- Mr. H. B. Leech, Vernon: Parasitic wasps.
- Mr. E. W. Pfeiffer, Vancouver: Ectoparasites of birds and mammals.
- Mr. K. Racey, Vancouver: Ectoparasites of birds.
- Mr. H. V. Wearne, Quick: Ectoparasites of mammals.
- Mr. J. D. Yarwood, Vancouver: Ectoparasites of birds and mammals.

Other Invertebrates:

- Mr. H. Leach, Vernon: Several collections of freshwater Crustacea.
- Mr. R. W. Pillsbury, Vancouver: Several collections of marine invertebrates.
- Mr. Guy Thompson, Vancouver: One tarantula.
- Dr. M. Y. Williams, Vancouver: A collection of marine Mollusca.

Amphibia and Reptilia:

- Mr. and Mrs. C. D. Fowle, Toronto: 21 specimens of Ontario amphibians.
- Mr. and Mrs. L. I. Korner, Vancouver: One alligator skin.
- Mr. R. W. Pillsbury, Vancouver: Two amphibians from Burnaby Lake.
- Mr. F. C. Withler, Boston Bar: Three specimens of amphibia from Babine Lake and Boston Bar.
- Major Allan Brooks, Okanagan Landing: 11 specimens from British Columbia.
- Dr. I. McT. Cowan: 59 specimens from British Columbia and Alberta.
- Mr. C. J. Guiget, Vancouver: One black pidgeon hawk from Lulu Island, B. C.
- Mr. J. Hatter, Lake Cowichan: Ten specimens from British Columbia.
- Mr. J. H. Holman, Vancouver: Burrowing owl and herring gull from Lulu Island, B. C.
- Mr. K. Racey, Vancouver: Three specimens from Manitoba, Arizona, and New York.
- Professor G. J. Spencer, Vancouver: One ruddy duck.
- Mr. F. C. Withler, Boston Bar: One Hoelboell grebe.

Mammals:

- British Columbia Game Commission, through Mr. H. Tyler, Invermere: One white-tailed deer.
- Mr. N. Cameron, Golden: Skulls of two moose.
- Mr. H. D. Fisher, Kamloops: 45 specimens from British Columbia.
- Mr. and Mrs. C. D. Fowle, Toronto: Six specimens from Ontario.
- Mr. H. U. Green, Banff: Two water shrews from Banff, Alberta.
- Mr. J. Hatter, Lake Cowichan: 90 mammal specimens from Alberta and British Columbia.
- Mr. R. S. Hayes, Game Warden, Courtenay: Two beaver skeletons.
- Mr. R. D. Hughes, Vancouver: Whale "bone."
- Mr. L. Jobin, Game Warden, Williams Lake: One hump-nosed bat.
- Miss I. Musfelt, Vancouver: Three muskrats from Burnaby Lake, B. C.
- Messrs. Walter Peyto and Robert Peyto, Banff: 241 specimens from the Banff area.
- Mr. H. V. Wearne, Quick: One coyote, one moose.
- Mr. F. C. Withler, Boston Bar: Four specimens from Babine Lake, B. C.

(General Acknowledgments)

- Mr. E. R. Buckell, Dominion Entomological Laboratory, Kamloops: Identifications of social Hymenoptera.
- Professor G. A. Gillies, Vancouver: One book.
- Dr. M. Hatch, University of Washington, Seattle: Identifications of B. C. terrestrial Isopoda.
- Mr. G. Hopping, Dominion Entomological Laboratory, Vernon: Identification of B. C. Coleoptera.
- Mr. H. B. Leech, Dominion Entomological Laboratory, Vernon: A further contribution of entomological literature; identification of B. C. Coleoptera.
- Mrs. O. Sadler, West Vancouver: Numerous scientific reprints.
- Miss E. H. Smith, Empire Fumigating Co., Vancouver: A textbook of Entomology.

1946-47

THE UNIVERSITY OF BRITISH COLUMBIA

Registration for 1945 - 46

REGULAR SESSION

FACULTY OF ARTS AND SCIENCE	Men	Women	Total
First Year	1255	314	1569
First Year Home Economics		46	46
			1615
Second Year	566	274	840
Second Year Commerce	231	18	249
Second Year Home Economics		54	54
			1143
Third Year	212	188	400
Third Year Commerce	114	12	126
Third Year Home Economics		33	33
			559
Fourth Year	130	136	266
Fourth Year Commerce	55	13	68
Fourth Year Home Economics		15	15
			349
Graduates	146	43	189
			189
Social Work: Degree Course	8	30	38
Diploma Course	6	23	29
			67
Teacher Training Course	27	19	46
			46
Directed Reading Courses	56	44	100
Less Double Registrations (D.R.C.)	-10	- 2	-12
			88
	2812	1244	4056

FACULTY OF APPLIED SCIENCE

Second Year	529	1	530
Third Year	186	2	188
Fourth Year	138		138
Fifth Year	136		136
Graduates	30		30
			1022

NURSING

Second Year		23	23
Third Year		13	13
Fourth Year		12	12
Fifth Year		14	14
Sixth Year		21	21
Certificate Course		45	45
			128

FACULTY OF AGRICULTURE

First Year	80	18	98
Second Year	76	18	94
Third Year	36	7	43
Fourth Year	31	7	38
Graduates	26	4	30
Occupational Course	22	4	26
Rehabilitation Course	1	.....	1
			— 330

FACULTY OF LAW

Degree students	67	3	70
Non-degree students	12	3	15
Graduate	1	.....	1
			— 86
TOTALS	4167	1455	5622 5622

SPECIAL WINTER SESSION, 1946

FACULTY OF ARTS AND SCIENCE	Men	Women	Total
First Year	581	40	621
Second Year	272	21	293
Upper Years	44	1	45
			— 959
Teacher Training	1	.....	1
			— 1
FACULTY OF APPLIED SCIENCE			
All Years	61	.....	61
			— 61
FACULTY OF AGRICULTURE			
All Years—Degree course	46	2	48
Occupational	28	.....	28
			— 76
FACULTY OF LAW			
Non-degree student	1	.....	1
			— 1
TOTALS	1034	64	1098

SPECIAL SPRING SESSION, 1945

Ex-Service Personnel

FACULTY OF ARTS AND SCIENCE	Men	Women	Total
All Years	273	5	278
			— 278

SUMMER SESSION, 1945

All Years	596	265	861
			— 861
Botany Evening Class, 1945-1946.....	33	30	63
			— 63

DEGREES CONFERRED

MAY, 1945

THE HONORARY DEGREE OF DOCTOR OF LAWS

His Excellency the Right Honourable the Earl of Athlone, K.G.
Governor-General of Canada

Faculty of Arts and Science

THE DEGREE OF MASTER OF ARTS

- Barclay, George Chapman, B.A. Major: Latin
Minor: Education
Thesis: "The Aeneas Legend to the End of the Augustan Age"
- Cooper, Walter Charles, B.A. Major: Chemistry
Minor: Physics
Thesis: C.E. 150 (Chemical Warfare)
- Dauphinee, Thomas McCaul, B.A. Major: Physics
Minor: Mathematics
Thesis: "The Heat Conductivity of Rubber at Low Temperatures"
- Height, Joseph Stuart, B.A. Major: Philosophy
Minor: German
Thesis: "The Intellectual Origins of National Socialism"
- Metcalf, Stanley Walter, B.A. Major: Chemistry
Minor: German
Thesis: War Problem
- Mundell, Percy Meldrum, B.A. Major: Chemistry
Minor: Physics
Thesis: War Problem C.E. 153
- MacLeod, Robert Angus, B.A. Major: Chemistry
Minor: Biology
Thesis: War Problem XR34; XR 54; C.E. 166; and XR 19
- McLeod, Ruther Raymond, B.A. Major: Physics
Minor: Mathematics
Thesis: "The Magneto-Optic Rotation of Cis Decahydronaphthalene"
- O'Neill, Albert Norman, B.A. Major: Chemistry
Minor: Physics
Thesis: War Problems XR 19 and Polyvinyl nitrate
- Robinson, Marian, B.A. Major: Chemistry
Minor: Physics
Thesis: "The Second-order Phase Transition of Cis Decahydronaphthalene"

THE DEGREE OF BACHELOR OF ARTS

With Honours

Affleck, Edward Lloyd.....	2nd Class Honours in Chemistry
Airey, Frances Margaret.....	2nd Class Honours in Bacteriology and Preventive Medicine
Armstrong, Kenneth Samuel.....	2nd Class Honours in Mathematics and Physics
Ashton, Harry Edward.....	1st Class Honours in Chemistry
Attree, Richard Willoughby Alec.....	1st Class Honours in Chemistry
Bertram, Gordon William.....	2nd Class Honours in Economics
Boyd, Alan William.....	1st Class Honours in Chemistry
Calam, Alice Margaret.....	2nd Class Honours in Bacteriology and Preventive Medicine
Christie, Hugh Graham.....	2nd Class Honours in Sociology
Church, John Spencer.....	1st Class Honours in History
Colclough, John Reed.....	2nd Class Honours in Chemistry
Constabaris, George.....	1st Class Honours in Chemistry
Coote, Arthur Renton.....	2nd Class Honours in Chemistry
Croll, Margaret Frances.....	1st Class Honours in Mathematics
Embree, William Howard.....	2nd Class Honours in Chemistry
English, Harry Edward.....	2nd Class Honours in Economics
Hatter, James.....	1st Class Honours in Zoology
Holroyd, Louis Vincent.....	1st Class Honours in Physics
Ketchen, Keith Stuart.....	2nd Class Honours in Zoology
Kurth, Burton Oliver.....	1st Class Honours in English and History
Leith, Anna Ruth.....	2nd Class Honours in Bacteriology and Preventive Medicine
Lowther, Roy Armstrong.....	2nd Class Honours in Philosophy and Psychology
Magee, William Henry.....	1st Class Honours in History and English
Maunsell, Charles Dudley.....	1st Class Honours in Physics and Mathematics
Mayo, Eleanor Grace.....	2nd Class Honours in Mathematics and Physics
Metro, John.....	2nd Class Honours in Psychology and Sociology
Mitchell, James Gavin.....	1st Class Honours in English Language and Literature
Musfelt, Iola Wyndemere.....	2nd Class Honours in Zoology
MacCulloch, Armelda Anne.....	1st Class Honours in Mathematics
Nalos, Erika Miriam.....	2nd Class Honours in Latin and English
Ney, Marjorie Sarah Arliss.....	1st Class Honours in Sociology
Ostle, Bernard.....	2nd Class Honours in Mathematics
Parker, Douglas George.....	2nd Class Honours in Philosophy and Psychology
Quan, Mary.....	1st Class Honours in English Language and Literature
Short, John Weir, B.Com.....	2nd Class Honours in Economics
Smellie, Elsie Laura.....	1st Class Honours in French
Stewart, Rosemary Gordon.....	1st Class Honours in Economics
Straight, Byron William.....	1st Class Honours in Mathematics
Thompson, Harry.....	2nd Class Honours in History
Thompson, William Bell.....	1st Class Honours in Physics and Mathematics
Wainwright, John William.....	2nd Class Honours in Chemistry

Wallace, William John.....	2nd Class Honours in Chemistry
White, Ruth Lillian.....	1st Class Honours in French
Whittemore, Thomas Edwin.....	2nd Class Honours in Physics and Mathematics
Wilson, Atholl Livingstone.....	1st Class Honours in Mathematics
Withler, Frederick Curtis.....	1st Class Honours in Zoology
Wood, Juanita Edna.....	2nd Class Honours in Bacteriology and Preventive Medicine
Wyatt, Gerard Robert.....	1st Class Honours in Zoology
Yard, William Edward.....	2nd Class Honours in Philosophy and Sociology

THE DEGREE OF BACHELOR OF ARTS

*General Course**Class I*

Baumbrough, Edna D.	McLaren, Ada L.
Cline, Richard E., D.F.C.	McLeish, Sheila A.
Goodlad, John I.	Macpherson, Barbara W. M.
Griffiths, David A.	Norris, Mary F.
Ireland, Aldythe M.	Walther, Garth L.
Irwin, Winnifred M.	Winch, Eric W.
Kenny, Douglas T.	

Class II

Adutt, Peter S.	Hood, Marjorie H.
Appleby, Lyon H. T.	Huckerby, Fannie M.
Barraclough, W. Edward	Huyck, Edward B.
Beale, Margaret F.	Johnsen, Hans P. E.
Behnsen, Thelma A.	Jones, Netta
Bennett, Anne L.	Julian, Terence S.
Bloch, Inez E.	Keeves, Moira E.
Bloom, Martha M.	Kendall, Marie J.
Boothby, Hortense W.	Kennedy, Irene M.
Brown, Edward G.	Liddell, Ruth B.
Carlisle, Sheila J.	Lotzkar, Eva
Carroll, Clarence S.	Lyons, Nancy-Lou
Chatwin, Mary K.	Manson, Nicol B.
Cherniavsky, John R. D.	Merry, Margaret G.
Cole, Kathleen M.	Miller, Gregory
Coulter, Shirley V.	McBay, Robert R.
Craig, Marie I.	McGhee, Margaret G.
Daly, Flora	McGregor, George A.
Doyle, Irene V.	MacLeod, Margaret H.
Edwards, Beth E.	McPherson, Hugh J.
Evans, Elizabeth	Nickerson, Ara S.
Farrell, Kathleen W.	O'Neill, John J.
Fischer, Joan G.	Ore, Elizabeth J.
Friesen, Edward P., B.Com.	Parker, H. Victor
Gordy, John	Pearce, Irene S.
Greene, Barbara H.	Pridham, Jean B.
Greig, M. Nina	Pronger, Ivy R.
Gurvitz, Marcia R.	Raphael, Leslie A.
Hamilton, J. Kelvin	Reid, Lois C.
Hodgson, Margaret A.	Richardson, S. Leeds

Rodgers, M. Joan
 Scott, John T.
 Smith, Barbara A.
 Staley, Ruth M.
 Steele, Isobel F.
 Stewart, Ann M.
 Stonhouse, Alice H.
 Stothers, John H.
 Thomas, Wallace J.
 Tierney, Letitia M.

Trumbull, M. Frances
 Tufts, Aileen M.
 Van Gorder, C. Julia
 Vincent, Vivian A.
 Watson, Carol R.
 Weeks, Donald J.
 White, Eleanor J.
 White, Loise A.
 York, Gregory B.

Passed

Ades, Audrey I.
 Anderson, Elizabeth M.
 Aubrey, June L.
 Bennett, Cyril J.
 Campbell, Gordon
 Campbell, Nora V.
 Dalrymple, Suzanne I.
 Duncan, Margaret W.
 Ferguson, Walter H.
 Gansner, Nina M.
 Goddard, P. Brenda
 Gould, Belle P.
 Hobden, Frances E.
 Hunter, J. Gerald
 Jones, Myrtle M.
 Kinnaird, Ellen A.
 Kirkpatrick, Sheila W.
 Lake, June M.
 Lees, Sylvia A.
 Livingston, Gertrude H.
 Louie, Edward K. H.
 Manson, Marion M.
 Messenger, Georgina A.
 Moran, John W.

Muttart, Mary C.
 McCabe, M. Margaret
 MacKenzie, J. Conrad
 MacLeod, P. Arnold
 MacWilliams, Helen C.
 Neilson, James S.
 Pilmer, Margaret
 Pitts, Harry
 Quebec, Mona B. G.
 Ralston, Donald J. C.
 Robinson, Robert J.
 Sloan, Barbara J.
 Smith, P. Anne
 Stamatis, D. Patricia
 Sutherland, Herbert W.
 Tessman, Fred B.
 Tucker, Norma McC.
 Van de Putte, Madeline L.
 Walker, Claude E.
 Walmsley, Thomas E.
 Walton, M. Elizabeth
 Witter, Beverly M.
 Yeasting, Alice M.

THE DEGREE OF BACHELOR OF COMMERCE

Class I

Raphael, Leslie A.
 Smith, Marjorie C. L.

Wong, Leslie G. J.

Class II

Aitken, Evelyn M.
 Allison, George W.
 Aqua, Harry
 Brookes, Miles G.
 Burke, Brian E.
 Camerman, Margaret
 Chambers, Edward J. S.
 Cunningham, Patricia M.
 Hole, Leonard W.
 Johnson, George A.
 King, J. David

Matheson, William D.
 Morgan, Helen E.
 Morgan, Margaret E.
 McDonald, L. Marion
 Paulin, M. Elizabeth
 Phelps, James W.
 Porteous, Stuart W.
 Waldron, B. Harry
 Wills, M. Eileen
 Wilson, James R.

Passed

Alexander, D. Robert
 Bell, Barbara A.
 Bennett, Cyril J.
 Black, Norman J.
 Cotter, Harry B. C.
 Coyle, Patricia
 Glensk, Alfred H.
 Guy, Beverly E.
 Hardy, Gordon P.
 Hayward, Gilbert J.

High, Robert L.
 Korsch, Stanford
 Marhull, Allen
 Morrith, Harry H.
 McCarter, William K.
 McKercher, R. John
 Nicolls, Joan G.
 Payson, Dorothy B.
 Renwiek, F. Elizabeth

THE DEGREE OF BACHELOR OF EDUCATION

Aberdeen, James Fredrick, B.A.
 Donaldson, John Stanley Ross, B.A.

Libby, Herbert Richard, B.A.
 Wales, Bertram Edwards, B.A.

Faculty of Applied Science

THE DEGREE OF BACHELOR OF APPLIED SCIENCE

Chemical Engineering*Honours*

Cochrane, James A.
 Dawson, John A.
 Dunell, Basil A.

Leith, James A.
 Robinson, Donald B.
 Younger, Andrew H.

Class II

Brandon, George F.
 Clarke, William D.
 Clifton, Everard H.
 Cooke, Norman E.
 Howie, Henry J.

Ruck, William
 Sceats, Hubert B.
 Steele, Ian McL.
 Yip, Chuck W.

Passed

Bibbs, Richard M.
 Coleopy, Norman
 Griffiths, Donald F.

Powell, John R. P.
 Sexsmith, Roderic F.

Civil Engineering*Honours*

Bunnell, Frank R.

Class II

Anderson, J. Douglas
 Binnie, Robert F.
 Dennison, James A.
 Eyre, Alan M.
 Graves, Harold B. R.

Hole, Frederick R.
 Kent, C. Joseph
 Lefeaux, Stuart S.
 Scott, William B.
 Turley, Francis E.

Passed

Calderhead, Gordon A.
 Confortin, John C.
 Fraser, D. Arthur

Grimble, Wilf G., B.A.
 Ker, Walter A.
 Wigen, Sydney O.

Electrical Engineering*Honours*

Best, George C.	Piercy, Earle W.
Ellis, Harry McP.	Roos, Albert E.
Lam, Mathias	

Class II

Creelman, Elliott A.	Lytle, Dennis D.
Haney, Daniel F.	Mohr, Frank K.
Healey, Albert J.	Newbury, Edward W.
Hetherington, John D.	Roper, Austin J.
Isherwood, Sidney D.	Tarrant, Edmund H.
LaBelle, Eugene P.	Walker, William M.
LeBus, George H.	Woodcroft, John
Louie, John	

Passed

Gardner, Melvin T.	Guichon, Lloyd J.
Gregory, Edward S.	Moore, Donald C.

Geological Engineering*Class II*

Sharp, William McM.

Passed

Parliament, J. Harvey

Mechanical Engineering*Honours*

Barry, Frank W.	Willis, C. Norman
Lawley, Gordon E.	

Class I

Finnie, J. Douglas	Orskog, Arthur G.
Maybank, Herbert A. G.	

Class II

Blumenauer, George H.	Lloyd, George A.
Bryant, James L.	McAdam, James C.
Campbell, Alastair G.	McGuinness, David I.
Cochran, Edward O.	Nelson, James T.
Doyle, James P.	Smith, Herbert S.
Francis, Frank M.	Taylor, Leonard H.
Galbraith, D. Ewen	Wannop, Leonard G.
Hatte, Ross	Woo, John S.
Kells, Owen C.	

Passed

Gronlund, Max D.
Long, Joseph D.

MacKay, Wallace I.
Williams, Thomas G.

Metallurgical Engineering*Honours*

Barer, Ralph D.

Class II

Berryman, David J.

Mining Engineering*Class II*

Carver, Robert R.
MacKinnon, Donald F.

Olson, Eric R.
Seraphim, Andrew F.

Passed

Morton, Roy E.

Nursing*Class I*

Hawkins, Mary E.

Class II

Adams, J. Kirstine
Baker, Margaret A.
Bolton, Nancy
Gulloch, Ennis E.

Hicks, Mary N.
McLean-Bell, Janet, B.A.
Sorenson, Marie

THE DEGREE OF BACHELOR OF SCIENCE IN FORESTRY*Class I*

Knowles, Robert A., B.A.

Class II

Cawley, P. Guy S., B.Com.

Flader, Samuel, B.Com.

Faculty of Agriculture**THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE**

- Gilmour, G. Campbell, B.S.A. Major: Agronomy
 Minor: Dairy Bacteriology
 Thesis: "The Influence of Nitrogen and Carbon Sources on the Metabolism
 of Actinomyces"
- Novikoff, Morris, B.S.A. Major: Poultry Husbandry
 Minor: Dairying
 Thesis: "Wheat and Supplements Required in Feeding Poultry"

THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

Class I

Axen, George C.
 Burton, Margaret O.
 Denby, Lyall G.
 King, J. David

Lourié, Helene
 Miller, Ian McK.
 Willis, Thomas G.

Class II

Cook, Fred D.
 Farrow, John V.
 Fleming, Ormond W.
 Keenlyside, Thomas R.
 Masters, L. Reay

McLeod, Melville C.
 Rush, George E.
 Terrace, James R. W.
 Wilkinson, Barclay R.
 Yip, Yen W.

Passed

Hewitt, Ruth L.

Young, Victor M.

DEGREES CONFERRED

OCTOBER, 1945

THE HONORARY DEGREE OF DOCTOR OF LAWS

Henry John Cody, M.A., D.D., LL.D., F.R.S.C.
 Chancellor of the University of Toronto

Hugh Llewellyn Keenleyside, B.A., M.A., Ph.D.
 Canadian Ambassador to Mexico

Major-General Harry Farnham Germaine Letson, C.B.E., M.C., E.D.,
 B.Sc., Ph.D.

Head of the Canadian Joint Staff, Washington, D. C.

Brigadier Sherwood Lett, D.S.O., M.C., E.D., B.A.

Brigadier William C. Murphy, C.B.E., D.S.O., E.D., B.A.

Air Commodore John Lawrence Plant, B.A.Sc.
 Department of National Defence for Air

Norman Alexander Robertson, B.A.

Under Secretary of State for External Affairs

Phyllis Gregory Ross, B.A., M.A.

Lieutenant-Commander Gordon Wilson Stead, D.S.C. and Bar, B.Com., B.A.

THE HONORARY DEGREE OF DOCTOR OF SCIENCE

Colonel Percy Munson Barr, O.B.E., B.A.Sc., M.F., Ph.D.
 Associate Professor of Forestry, University of California

George Michael Volkoff, B.A., M.A., Ph.D.

Assistant Professor of Physics, University of British Columbia
 Research Physicist, National Research Council

Faculty of Arts and Science

THE DEGREE OF MASTER OF ARTS

- Pettit, Sydney George, B.A. Major: History
Minor: Philosophy
Thesis: "Matthew Baillie Begbie, Judge of British Columbia, 1858-1866"
- Pickering, Mary Gwendolyn, B.A. Major: Philosophy
Minor: English
Thesis: "George Herbert Mead from the Standpoint of Marxism"
- Pillsbury, Richard Washburn, B.A. Major: Biology and Botany
Minor: Zoology
Thesis: "The Polygonal Graphing of Climatic Factors of Forest Areas of British Columbia"
- Rattenbury, John Alban, B.A. Major: Biology and Botany
Minor: Zoology
Thesis: "Nucleolar and Chromatin Cycles in Abies"
- Tracy, Wilmot Edward, B.A. Major: Education
Minor: Psychology
Thesis: "Vocational Training for Rehabilitation"

THE DEGREE OF BACHELOR OF ARTS

With Honours

- Clark, Douglas Patterson 1st Class Honours in History
Prowd, Lawrence William 2nd Class Honours in Economics
Waldie, Robert Arthur 2nd Class Honours in Biology
(Forestry Option)

THE DEGREE OF BACHELOR OF ARTS

*General Course**Class I*

- Smith, Eric Lawrence, B.A.Sc. Woodman, Ross Greig

Class II

- | | |
|-------------------------|------------------------------------|
| Arland, Elsie Marina | Richmond, Charles Orvan |
| Carlson, Oscar Hedman | Ross, Alexander Davidson |
| Coady, Campbell Joseph | Shopland, Stella |
| Gallie, Norman Phillip | Smyth, Joseph |
| Gourlay, John | Soderholm, Ruth Lily Gunhild |
| Hutcheson, Amy Margaret | Thomas, Aubrey Loxley |
| Kanwischer, Friedrich | Thompson, William Haywood |
| McKay, Donald Malcolm | Tweeddale, Edward Archibald Abbott |
| McKenzie, James John | Wahl, Edward |
| Ney, Phyllis Winifred | Walden, Phyllis Sarah |
| Parfitt, Percy Dan | Waldie, Adam Clayton |
| Poulton, Sidney Arthur | Williams, Walter James |

Passed

Almas, Gabriel	Pritchard, Phyllis Eileen
Campbell, Jean Angelique Kathleen	Seyer, Anthony William
Dahl, Mrs. Beatrice Evelyn	Sparkes, Clifford Stanley
Harper, Mrs. Eleanor	Wallace, William Spencer Creighton
Hibberson, Robert John	Wener, Robert Albert
Jessop, Harvey Charles	Willsón, Margaret May
Payson, Dorothy Beatrice, B.Com.	

THE DEGREE OF BACHELOR OF COMMERCE

Class II

Houston, John

Passed

Johnston, Roy Frederick	Still, John Tryan
Schofield, William James	

THE DEGREE OF BACHELOR OF EDUCATION

Class I

Broome, Enoch Bunting, M.A.

Class II

Bunce, Frederick Thomas, B.A. (Sask.)	Kippen, Gladys Marion, B.A. (Toronto)
Clarke, Sidney Vernon, B.A.	Mitchell, James Reid, B.A.
	Thomas, Ralph Carleton, B.A.

Passed

Chave, Muriel Winifred, B.A.	Smith, Clyde McKenzie, B.A.
------------------------------	-----------------------------

Faculty of Applied Science

THE DEGREE OF MASTER OF APPLIED SCIENCE

Chemical Engineering

Assaly, Tom Christopher, B.A.Sc.....	Thesis: "The Behaviour of Sulfur Dioxide, Oxygen, Sulfuric Acid, and Water in an Electrolytic Cell"
Bennett, Reginald Bristol, B.A.Sc.....	Thesis: "The Density and Coefficient of Expansion of Hexamethylethane"
Hopper, David Alan, B.A.Sc.....	Thesis: "Liquid Diffusion in Porous Media, Referring in Particular to the Athabasca Tar Sands"
Tiedje, John Louis, B.A.Sc.....	Thesis: "Rates of Penetration of Solvents into Bituminous Sand"

THE DEGREE OF BACHELOR OF APPLIED SCIENCE

Civil Engineering*Passed*

Hicks, John Buell

Stamford, Gordon William

Mechanical Engineering*Class II*

Payne, Harold Richard

Faculty of Agriculture

THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE

Woodward, Eugene Douglas, B.S.A. Major: Agricultural
Economics
Minor: Poultry Husbandry

Thesis: "Some Factors That Influence Poultry Farm Incomes"

THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

Class II

Menzies, Vernon Hayward

*Passed*Hutchinson, Joy-Marie
Olliver, Muriel AnneStewart, Wilson Baxter
Still, Constance Liddesdale Bruce**MEDALS, SCHOLARSHIPS, PRIZES, AND BURSARIES**

AWARDED MAY, 1945

MEDALS

The Governor-General's Gold Medal (head of graduating class for the B.A. Degree) Charles D. Maunsell

The Wilfrid Sadler Memorial Gold Medal (head of graduating class for the B.S.A. Degree) Lyall G. Denby

The Kiwanis Club Gold Medal (Commerce) Marjorie C. L. Smith

The United Empire Loyalists' Association Medal and Prize (History)
Netta Jones

The Lefevre Gold Medal and Scholarship (Chemistry) Richard W. A. Attree

SCHOLARSHIPS FOR GRADUATES

University Graduate Scholarship, \$200.00 Mary Quan

The Anne Wesbrook Scholarship, \$125.00 Alan W. Boyd

The Dr. F. J. Nicholson Scholarships:

1. For Chemistry, \$500.00 Basil A. Dunell

2. For Geology, \$500.00 No award

- The Native Daughters of British Columbia Scholarship, \$50.00
(Early B. C. History).....No award
- The B'nai B'rith District No. 4 Hillel Foundation Scholarships, \$125.00 each:
1. Margaret O. Burton (Agriculture)
2. James Hatter (Arts)
- The Standard Oil Company of British Columbia Limited Scholarship, \$600.00
Donald B. Robinson
- The Britannia Mining and Smelting Company Limited Scholarship, \$250.00
No award in December, 1944
- The Cariboo Gold Quartz Mining Company Limited Scholarship, \$100.00
No award in December, 1944
- The Imperial Order Daughters of the Empire Scott Memorial Scholarship,
\$100.00.....Kathleen M. Cole
- The Powell River Company Limited Scholarship, \$700.00..Richard W. A. Attree
- The British Columbia Electric Railway Company Limited Research Scholar-
ship, \$500.00.....George C. Best
- The Cominco Fellowship, \$750.00.....James A. Leith

SCHOLARSHIPS FOR UNDERGRADUATES

I. IN ALL FACULTIES

- University Great War Scholarships (First Year), \$200.00:
1. Sidney R. L. Couling.
2. William A. Sweeney.

II. IN ARTS AND SCIENCE

Third Year

- University Scholarships in Arts and Science (general proficiency), \$200.00:
Group 1—Jean K. Gray
Group 2—John H. Syrett
- The N. Leo Klein Memorial Scholarship (general proficiency, Commerce),
\$50.00.....Donald K. Adams
- The John and Annie Southcott Memorial Scholarship, \$100.00
(B. C. History).....Harold C. Daykin
- The Vancouver Women's Canadian Club Scholarship (first in Canadian His-
tory), \$100.00.....John Syrett, by reversion to Winnifred Irwin
- The Vancouver Women's Canadian Club Scholarship (general proficiency,
Home Economics), \$100.00.....Violet O. Katainen
- The Edwin Waterhouse Scholarship (Commerce), \$250.00.....No award

Second Year

- University Scholarships in Arts and Science (general proficiency), \$200.00:
1. Linda C. Rosen
 2. Donald G. Brown
- The Shaw Memorial Scholarship (first in two of English, Latin, and Greek), \$125.00..... Agnes E. Mehling
- The McGill Graduates Scholarship (first in English and French), \$125.00
Lorna Downman
- The Terminal City Club Memorial Scholarship (first in English and Economics), \$100.00
Agnes E. Mehling, Leonard G. Miller, R. Ione Wright, by reversion to Leonard G. Miller and R. Ione Wright (equal)

First Year

- Royal Institution Scholarship (general proficiency), \$200.00..... Dick Quan
- University Scholarships in Arts and Science (general proficiency), \$200.00:
1. Walter Hirtle
 2. Henry Zitko
- The Beverley Cayley Scholarship (first male student in English), \$100.00
John Baxter

III. IN APPLIED SCIENCE

- University Scholarship in Nursing and Health (general proficiency), \$175.00, awarded in December, 1944..... Nancy Joan Montgomery
- The Vancouver Women's Canadian Club Scholarship in Nursing and Health, \$100.00..... Beverley M. Witter
- 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), \$200.00..... Donald J. Evans
- Royal Institution Scholarship in Applied Science (general proficiency, proceeding to the Third Year), \$200.00..... Ralph Carter
- The G. M. Dawson Scholarship (highest in Geological Engineering, Geological subjects, proceeding to the Fifth Year), \$50.00..... John G. Fyles
- The R. Randolph Bruce Scholarship (highest in Metallurgical Engineering, proceeding to the Fifth Year), \$200.00..... Donald A. Scott
- The British Columbia Electric Railway Company Limited Scholarships, \$200.00 each:
1. Highest in Electrical Engineering and proceeding to the Fifth Year
Peter Lindenfeld
 2. Highest in Mechanical Engineering and proceeding to the Fifth Year
Geoffrey Parkinson
- The B'nai B'rith Auxiliary No. 77 Scholarship (highest in Chemical Engineering, proceeding to the Fifth Year), \$50.00..... Gordon M. Barrow

IV. IN AGRICULTURE

- University Scholarship in Agriculture (general proficiency, proceeding to the Second Year), \$200.00..... Douglas R. Knott
- The David Thom Scholarship (general proficiency, proceeding to the Third Year), \$100.00..... Sheila C. Buchanan

The British Columbia Fruit Growers' Association Golden Jubilee Scholarship (proceeding to the Horticultural Course of the Fourth Year), \$125.00

Robert A. Miller

PRIZES

I. IN ALL FACULTIES

- The University Essay Prize (books), \$25.00..... Burton O. Kurth
 The Dorothy and William Dorbils Prize, \$50.00..... I. Sheila Davey
 (Canadian Literature)
 The News-Herald Awards in Journalism, two prizes:
 First Prize, \$200.00..... Denis Blunden
 Second Prize, \$150.00..... John W. Green

II. IN ARTS AND SCIENCE

- The Frances Willard Prize, \$50.00
 Douglas T. Kenny and Patricia A. M. Mitchell (equal)
 The David Bolocan Memorial Prize, \$25.00..... Eric Walter Winch
 The Ahepa Prize, \$100.00..... John Cherniavsky
 The Dorothy and William Dorbils Prize, \$50.00..... Juanita E. Wood
 (Bacteriology and Preventive Medicine)
 The Dorothy and William Dorbils Prize, \$50.00..... James Hatter
 (Zoology)

III. IN APPLIED SCIENCE

- The Convocation Prize (general proficiency in Fifth Year), \$50.00
 George C. Best
 The Engineering Institute of Canada, Vancouver Branch, Walter Moberly
 Memorial Prize (engineering thesis in the Fifth Year) (books), \$25.00:
 James A. Leith: "The Smelting of Tin at the Sullivan Concentrator."
 The Association of Professional Engineers' Prizes (books), \$25.00 each:
 1. Donald L. Stewart, Chemical Engineering, "The Manufacture and Use
 of Calcium Bisulphite or 'Cooking Acid' in the Sulphite Process"
 2. Henry Kolbeins, Civil Engineering, "A General Report on the Manu-
 facture of Lumber in the Pacific Northwest"
 3. John D. Sansum, Electrical Engineering, "Dust-Core Losses"
 4. Julius LeBrun, Mechanical Engineering, "The Steam Generating Plant
 for a Modern Laundry"
 5. Peter G. O'Dynsky, Mining Engineering, "The Installation and Opera-
 tion of Boilers on Royal Canadian Navy Frigates at Yarrows, Esqui-
 malt, B. C."
 The Provincial Board of Health Prizes in Public Health Nursing:
 1. Mary E. Hawkins } \$50.00 each
 2. Marjorie Willis }
 The Engineering Institute of Canada Prize (Fourth Year), \$25.00
 Tom Foster Scott
 The British Columbia Lumber and Shingle Manufacturers' Association Prizes:
 1. \$100.00, Andrew F. Seraphim
 2. \$50.00, Ernest E. Gallaher
 3. \$25.00, Robert G. Harris
 The William N. Kelly Prize (highest in Mechanical Engineering 30, Machine
 Shop Practice, proceeding to the Fourth Year), \$15.00, awarded in Feb-
 ruary, 1945..... Wilfrid Kenny

The Timber Preservers Limited Prizes (Fifth Year), Civil Engineering:

1. \$65.00, Joseph C. Kent
2. \$45.00, Francis Turley
3. \$25.00, Robert F. Binnie

Honourable Mention: James Dennison, W. Bruce Scott

BURSARIES

The Captain LeRoy Memorial Bursary (preference to returned soldiers or dependents), \$150.00..... Lorna Downman

The Khaki University and Y. M. C. A. Memorial Fund Bursaries, \$100.00 each:

1. Elizabeth Jean Bigsby
2. John Grant Hannan
3. Robert S. Harwood
4. Mary Emily Lane (Victoria College)
5. Marney J. McLellan

The University Women's Club Bursary, \$100.00..... Nancy Peterson

The Geldart Riadore Bursary, \$150.00..... Robert Nilan

The Mary C. Lipsett Bursary, \$250.00..... William Edward Yard

AWARDED AFTER THE MAY CONGREGATION

University Scholarships for University Entrance:

Provincial—\$175.00.....	John Robert Hugh Dempster
District 1—\$175.00 (Victoria College).....	George Stewart Cumming
\$175.00 (Victoria College).....	Margaret Jean Wright
District 2—\$175.00.....	Cliffe Charles Midwinter
\$175.00 relinquished by.....	Brian Bentham Everest
and runner-up.....	Hope Ann Auriol Stewart
not re-awarded	
District 3—\$175.00.....	Mary Jean McLeod
\$175.00.....	Harry Bernard Wolfe
District 4—\$175.00.....	Betsy Ann Greer
\$175.00.....	Patricia Anne Gardiner
District 5—\$175.00.....	Martin Hassall Edwards
\$175.00.....	Glyn Maddock Edwards
District 6—\$175.00 relinquished by.....	Dorothy Eileen Robertson
and all runners-up	
not re-awarded	
\$175.00.....	Gordon Myles MacDonald
District 7—\$175.00 relinquished by.....	Helen Joan Allison
	James Donald Broster
	Gerald Victor Garossino

by reversion to John Kemp Poole

\$175.00 relinquished by..... Margery Kathleen Montgomery
Alfred Milton Alden

by reversion to Clifford Gordon Newton

Royal Institution Scholarships for Senior Matriculation:

Provincial—\$200.00.....	Allan George Mungall
\$200.00.....	John Thomas Sample
\$200.00.....	Leonard Eugene Parent
\$200.00.....	Ernest Geoffrey Glover
	by reversion to Ross Hume Hall
\$200.00.....	Kenneth Bruce Carter
\$200.00.....	George Eichi Yano
	Naoyuki Yosheda
	Taimi Helmi Saari

by reversion to Alison Elizabeth Day

Vancouver Sun Entrance Scholarships, \$200.00 each:

- | | |
|------------------------|---------|
| 1. Gordon M. MacDonald | } equal |
| 2. Grant MacKinnon | |
| Raymond Le Blanc | |

Rotary Memorial Bursaries, \$200.00 each:

- Maud Hazel Hurst
- Kathleen Hyde-Lay
- Doris Deborah Payne
- Ian Greenwood
- Audrey McKim

- | | |
|--|--------------------------------|
| American Woman's Club Bursary, \$100.00 | Irene T. Nelson |
| Co-operative Seed Grower's Bursary, \$100.00 | David J. Blair |
| Faculty Women's Club Bursary, \$75.00 | Iva Maria Lisicka |
| Frances Milburn Bursary (Vancouver P. E. O. Sisterhood), \$150.00 | Constance Liddell |
| Gamma Phi Beta Bursary, \$50.00 | Irene Wilson |
| Inter-Sorority Alumnae Club Bursary, \$200.00 | Marjorie Alice Tunbridge |
| Lady Laurier Club Bursary, \$100.00 | Elsie Smellie |
| Mildred Brock Memorial Bursary, \$75.00 | May S. Johnston |
| Provincial Council of B. C. Canadian Daughters' League Bursary, \$100.00 | Edna Baumbrough |
| Alliance Française Bursary, \$25.00 | Lorna M. Downman |
| University Women's Club Bursary for Social Work, \$100.00 | Julia Van Gorder |
| Vancouver Section National Council of Jewish Women Bursary, \$100.00 | Eva M. Fairfax |
| Alberta Meat Company Bursary, \$50.00, equal amounts to Jack and Leo Leavy | |
| Pacific Meat Bursary, \$200.00 | James Milroy |
| Edith Ashton Memorial Scholarship, \$250.00 | Reginald E. Hammond |
| Armstead Prize in Biology and Botany, \$50.00 | Lawrence A. deGrace |
| Terminal City Club Scholarship, \$100.00 | |
| Awarded in equal parts to Onysia Crapko, Elizabeth Hodgson, and Diana Bampton, by reversion from Leonard Miller and R. Ione Wright | |
| Phil Wilson Bursary, \$225.00 | Douglas Scott Smith |
| William MacKenzie Swan Memorial Bursary, \$250.00 | Donald R. Stevens |
| Flying Officer Reverend George Robert Pringle Memorial Bursary, \$200.00 | Robert John McKercher (B.Com.) |
| The British Columbia Teachers' Federation Scholarship (completing the Third Year with the highest standing), \$50.00 | Ida Doreen Freeman |
| The Summer Session Students' Association Scholarship (completing the Second Year with the highest standing), \$40.00 | William James A. McPhail |
| Vancouver Women's Canadian Club Scholarship, \$100.00, relinquished by Beverley Witter, awarded by reversion to Joyce M. Taylor | |
| General Proficiency Scholarship, \$200.00, relinquished by Jean K. Gray, awarded by reversion to Ross Stewart | |
| University Scholarship in Nursing and Health, \$200.00 | Waverlie Ann Watson |
| Britannia Mining and Smelting Company Scholarship, \$250.00 | Charles Howatson |
| The Cariboo Gold Quartz Mining Company Limited Scholarship | No award |

THE UNIVERSITY OF BRITISH COLUMBIA

UNIVERSITY SUMMER SESSION, 1947 Seven Weeks—July 7th to August 22nd

The Announcement of the courses to be offered in a Summer Session will be issued in January if possible.

No course may be offered for which there are fewer than eight registrations. Students, therefore, desiring any courses, particularly Third and Fourth Year courses, are requested to advise the Director of the Summer Session as early as possible and not later than May 15 as to the courses desired. If the demand for these courses seems adequate, an effort will be made to offer them.

The regulations, etc., governing the Summer Session, the Directed Reading courses, and the Extra-sessional classes follow.

COURSES LEADING TO THE DEGREE OF B.A.

1. The degree of B.A. will be granted on completion of courses amounting to 60 units chosen in conformity with Calendar regulations. (See pages 89-105.)
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 95), 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-session course, nor with a course of private reading as outlined on page 95, except by special permission of Faculty.

(f) Not more than one Directed Reading course may be taken during the academic year.

6. Extra-session classes to be held at the University may be arranged, and, if so, may be taken for credit by students proceeding to the B.A. degree, who are at least 18 years of age, who are qualified for registration as Second Year students (full undergraduate or conditioned), or who hold normal school diplomas, and who have the 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-session 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.

FEES

For statement of fees, see page 43.

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-session classes in the subject or subjects in which they have failed, but a student obtaining less than 30 per cent. in a subject will not be granted a supplemental in that subject. Supplemental examinations on Summer Session courses are held in the first week 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. The Department of University Extension, in conjunction with the Department of Labour, 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.

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 evening classes on various subjects are held in the city of Vancouver.

(c) *Discussion Groups.*

Discussion group courses are offered each year. These include:

- (i) Canadian Affairs.
- (ii) You and Your Home—a course in Interior Decorating.
- (iii) Child Psychology for Parents.
- (iv) Community Clinic.
- (v) Marriage and Family Life.
- (vi) Modern Literature.
- (vii) Art Appreciation.
- (viii) Music Appreciation.
- (ix) Acting for Drama Groups.
- (x) Public Speaking.
- (xi) Introduction to the Cooperative Movement.
- (xii) Credit Unions.
- (xiii) Introduction to Navigation.

(d) *Visual Instruction.*

- (i) Lantern Slide and Film Strip Service. Approximately 950 sets of lantern slides and film strips, 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 600 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, suspended in 1942 because of the war, was re-opened in July, 1945. A large lending library of plays and books on the theatre has been established.

(f) *Agriculture.*

Through its agricultural division, the Department is helping to make available to groups and individuals throughout the Province the facilities of the Faculty of Agriculture of the University. Various short courses are arranged in cooperation with agricultural organizations, and an advisory service is maintained.

(g) *Workshop in International Relations.*

Each summer the Department offers a five-week course in International Relations. Established at the suggestion of the Canada-United States Committee on Education, this course is open to teachers and students from Canada and the United States.

(h) *Short Courses.*

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

(i) *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.

(j) *Radio.*

For the past five years the Department has cooperated with the National Farm Radio Forum in organizing listening groups throughout the Province of British Columbia. During the past three years it has also cooperated with the Canadian Broadcasting Corporation and the Canadian Association for Adult Education in organizing groups for the programme "Citizens' Forum." 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. A similar course is planned for the summer of 1946.

(k) *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.

(l) *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.

(m) *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

Students who can meet the physical requirements may take training in either the University Contingent of the Canadian Officers' Training Corps or the University Naval Training Division. All service training on the campus is under the jurisdiction of a Joint Services University Training Committee composed of the President of the University, the Commanding officers of the C.O.T.C. and U.N.T.D., the Deans of the Faculties of Arts and Science, Agriculture, and Applied Science, and representatives from the Navy and the Army.

(a) *Canadian Officers' Training Corps.*

The U. B. C. contingent of the C.O.T.C. was re-established in 1928 and has operated continuously since that time. At the outbreak of World War II it was the only military unit in British Columbia organized for the specific purpose of training and qualifying officers. Until Active Service Officer Training Centres were established, University graduates were permitted to join the C.O.T.C. and take the examinations for officer candidates. Many took advantage of this opportunity and as a result in the early years of the war the supply of reinforcement officers for British Columbia units came largely from the C.O.T.C.

The strength of the unit reached its greatest height in November, 1942, when there were 1,595 all ranks on strength.

During World War II one thousand, four hundred, and fifty-two men left the C.O.T.C. to go on active service with the Navy, Army, and Air Force. There are many former members of the unit who joined the Services after leaving the University and, unfortunately, there is not, as yet, a complete record of these men.

From 1928 to 1945 all ranks of the C.O.T.C. waived their local headquarters training pay. The total amount so waived exceeded \$125,000.00. Approximately \$100,000.00 of this was used to construct and furnish the University Armoury, the first unit of which was opened on November 22nd, 1941. The second unit was completed on September 22nd, 1943. The remainder of the funds has been placed in trust for the unit and for the promotion of military training at the University. Commencing in September, 1945, the practice of waiving pay was discontinued.

With the return of peace, military training has been placed on a voluntary basis. The C.O.T.C. provides opportunities for selected students to qualify for commissions in the various Corps of the Army. Cadets are required to devote a minimum of three hours a week to training. Officers, N.C.O.'s, and specialists are required to give additional time to the work. All enquiries for information should be addressed to the Officer Commanding.

(b) *University Naval Training Division.*

On March 29th, 1943, the Board of Governors approved the establishment of a University Naval Training Division on the campus. Lieut. H. M. McIlroy of the C.O.T.C. was appointed by the Naval Service as Commanding Officer of the U.N.T.D. with the rank of Lieut. Commander (Special Branch). During the war the U.N.T.D. served as a preliminary training establishment for University students who intended to serve with the Navy. Since the close of the war the U.N.T.D. is functioning as a permanent peace-time Naval Training Unit for students who are interested in the Navy. Members of the U.N.T.D. are attested as ratings in the R.C.N. (Reserve) on Divisional Strength at H.M.C.S. "Discovery." A four year syllabus of training has been put into effect and ratings who complete the course are eligible to appear before an Officer Selection Board for a commission in the R.C.N. (Reserve). Training is given at the University and at H.M.C.S. "Discovery", where complete training gear is

available. The two weeks spring training immediately after the University examinations in April is usually given at H.M.C.S. "Naden", Esquimalt, B. C., but it is expected that ships will be available to give the ratings sea time as well.

UNIVERSITY OF B. C. VETERANS' BUREAU

The University provides an advisory and counselling service for student veterans. Full-time counsellors appointed to the University staff are available to confer with students regarding their admission, courses, and progress. Incoming students are advised to report to the bureau on arrival. Students requiring assistance with their courses are invited to consult the counsellors. Cheques for the payment of rehabilitation benefits are distributed at the bureau and a close liaison is maintained with the Department of Veterans' Affairs on all matters affecting the rehabilitation of veterans.

SUMMARY OF TRAINING PROVISIONS OF THE POST-DISCHARGE RE-ESTABLISHMENT ORDER, P.C. 5210

Department of Veterans' Affairs

University Training

1. *Undergraduate Students (Paragraph 8, P.C. 5210).*

The Minister has authority to approve training, including maintenance grant and fees—together with appropriate allowances for dependents,—for 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. 5210).

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. 5210.)

This makes provision for

- (1) resumption of education leading to high school graduation or University Entrance;
- (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 service. For most types of training the maximum will be twelve months. In instances where the required training exceeds twelve months grants may be continued for a period not exceeding the length of service. In no case shall grants be paid beyond the period of service except in the case of a disability pensioner.

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: E. T. "Ted" Kirkpatrick.

Secretary: Joyce A. P. Donegani.

Treasurer: Donald A. McRae.

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 eleven members of Students' Council are elected 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 information. 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 *Ubysey*, the student newspaper published thrice a week; of the *Totem*, the Society's yearbook; of the *Thunderbird*, the Society's quarterly magazine; of the *Student Directory*, which lists addresses and telephone numbers of all members of the Society; and of the *Tillicum*, the student handbook issued to all freshmen.

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, for downtown and campus broadcasting. Membership is granted to persons able and interested in script writing, announcing, producing, or technical work.

The University Amateur Radio Operator's Association is constructing equipment for the reception and transmission of short-wave broadcasts.

The public speaking and debating clubs are the Parliamentary Forum, open to all students, which is a member of the Western Universities 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, the American Institute of Chemical Engineers, and the Engineering Institute of Canada.

The Thunderbird Gliding and Soaring Club constructs gliders and instructs its members in flying operations.

The Film Society trains its members in projection technique and presents films to the student body throughout the year.

Clubs open to students in the upper years are the Economics Society, El Circulo Latino Americano, Letters Club, the Historical Society, the International Relations Club, the Biological Discussion Club, the Mathematics Club, the Physics Society, the Physics Exchange, the Psychology Club, and Le Cercle Français.

Membership in the Social Problems Club and the Chess Club, the Jazz Society, and the University Symphonic Club is open to all students.

The social club is the Chinese Students' Club; the religious clubs are the Student Christian Movement, the Varsity Christian Fellowship, the Menorah Society, and the Newman Club.

Instrumentalists may play in the Varsity Band, the Varsity Dance Band, the Musical Society Orchestra, or the University Concert Orchestra Society.

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.

The Jokers participate in pepmeets and stunts in order to promote and to publicize student activities.

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 Undergraduate Society

The Women's Undergraduate Society unites all the women of the University under a representative executive body. W.U.S., at present, directs much of its effort to War Work—raising Red Cross funds and carrying out the Compulsory War Work Plan: War Work A, consisting of a physical fitness program; War Work B, including all Red Cross work and other wartime courses; the members of the University detachment of the Red Cross Corps are exempted from other war work.

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 the 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, and plays challenge games, the Women's collegiate team playing women's rules, and the Grass Hockey Club, which enters three teams in the Lower Mainland League and also plays challenge games.

Women may also join the Badminton, Fencing, Archery, Swimming, Tennis, Golf, and Outdoor Clubs, which are under the Men's Athletic Association, and the Women's Rifle Club.

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. 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 faculty members, the four senior managers of the four major sports, namely, basketball, American football, English rugby, and soccer, a representative from minor sports, an Alumni Association representative, a treasurer, a secretary, and an ex-officio member of the Publications Board.

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 Senaté 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: W. Tom Brown, B.A., M.A. (Oxon).

Secretary-Manager (Permanent): Frank J. E. Turner, B.A., B.Com.

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 \$3.00 or the life membership fee. 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.

The governing body of the Association is composed of a general executive elected at the annual meeting and the president of each organized branch. This body conducts the affairs of the Association and maintains contact with the branches, U.B.C. graduates, and persons interested in education generally, through the Secretary-Manager. The latter is employed by the Association on a full-time basis.

The Association magazine, called *The Graduate Chronicle*, is issued quarterly throughout the college term to paid up members.

Further information concerning the Association may be obtained through the Alumni Office, University.

Notices of change of address and reports in regard to the activities of members should be sent to the Alumni Office.

SUMMER SESSION STUDENTS' ASSOCIATION

1945-1946 EXECUTIVE

President: Don Smith.
Secretary: Gladys Owen.
Treasurer: John Goodlad.

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.

JEFFREY A. CUNNINGHAM, B.A. (Queen's), Vice-Principal, Associate Professor of Biology, Botany, and Zoology.

E. STANLEY FARR, B.A., LL.B. (Toronto), Assistant Professor of Economics. (Session 1945-46.)

GEORGE P. BLACK, M.A. (Man.), Associate Professor of Classics.

ROBERT T. D. WALLACE, B.A. (Brit. Col.), Assistant Professor of Mathematics.

SYDNEY G. PETTIT, M.A. (Brit. Col.), Assistant Professor of History and Sociology.

W. HARRY HICKMAN, M.A. (Brit. Col.), Associate Professor of Modern Languages.

WILLIAM H. HUGHES, B.A. (Queen's), B.Sc. (Sask.), Assistant Professor of Physics.

ROGER J. BISHOP, B.A. (Brit. Col.), M.A. (Toronto), Assistant Professor of English.

EDWARD J. SAVANNAH, A.B., S.B. (Calif.), Assistant Professor of Chemistry.

LEWIS J. CLARK, B.A. (Brit. Col.), M.Sc. (Washington), Assistant Professor of Chemistry.

W. GORDON FIELDS, B.A. (Brit. Col.), Instructor in Biology.

MISS PHYLLIS BAXENDALE, B.A. (Brit. Col.), Instructor in German.

MISS JOSEPHINE A. PEARCE, A.B. (Washington), A.M. (Stanford), Instructor in English.

MISS DOROTHY M. CRUICKSHANK, B.A. (Brit. Col.), Registrar.

MISS MARJORIE GRIFFIN, B.A. (Brit. Col.), Librarian.

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, 2, 3, or 4, or Psychology A or 1, or Economics 1 or 2, or Philosophy 1, or Sociology 1	3
(e) Biology 1, or Chemistry A or 1, or Physics A or 1	3
(f) Three courses, not already chosen, selected from the following:	
Biology 1, Botany 1(a), Chemistry A, Chemistry 1, Chemistry 2, Economics 1, Economics 2, Economics 10 (Commerce 5), French 1, French 2, Beginners' German, German 1(a), Greek A, Greek 2, History 1, History 2, History 3, History 4, 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 90.)

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

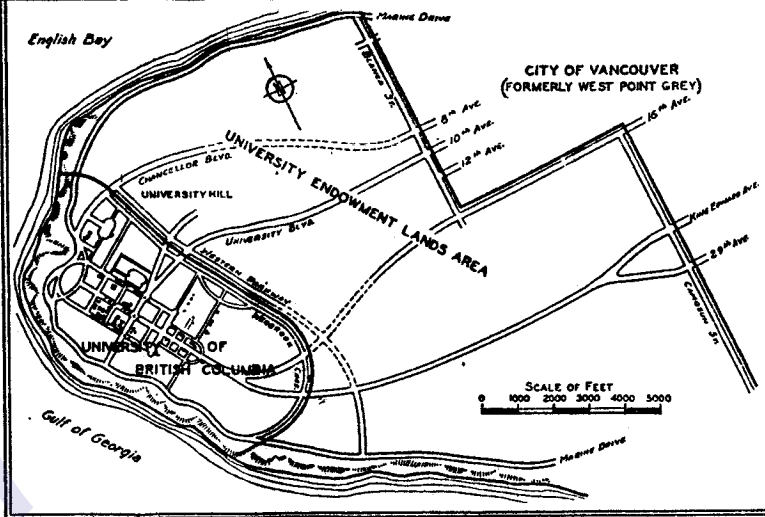
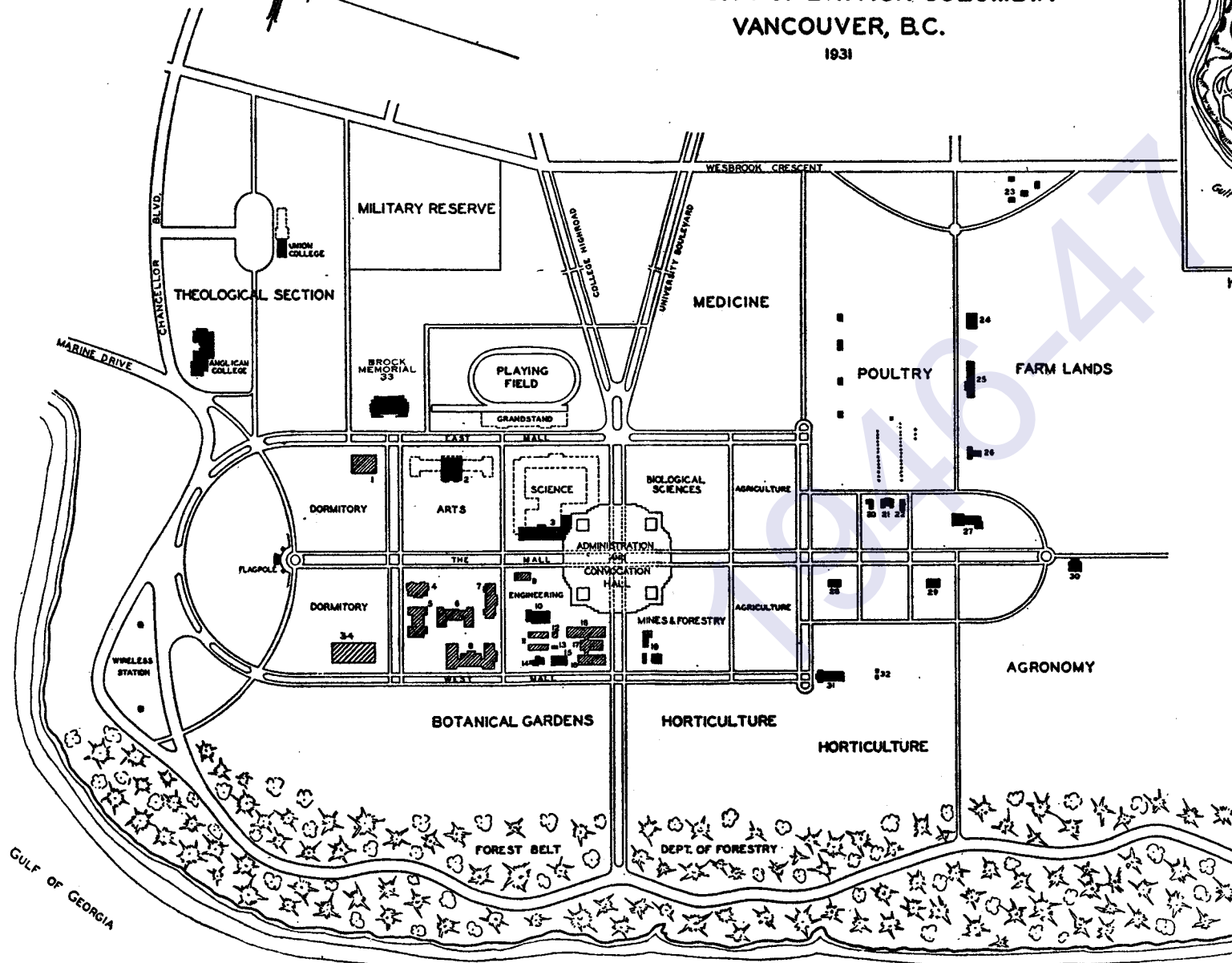
REV. D. P. WATNEY, M.A., B.D.

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 90.)

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
- 23 FARM COTTAGES
- 24 SHEEP BARN
- 25 BEEF BARN
- 26 PIGGERY
- 27 DAIRY BARN
- 28 HORTICULTURAL BARN
- 29 AGRONOMY
- 30 HORSE BARN
- 31 GREENHOUSE
- 32 FORESTRY FIELD HOUSES
- 33 BROCK MEMORIAL
- 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 23
- FARM DAIRY 20
- FEDERAL FOREST PRODUCTS LABS. 19
- FIREHALL 14
- FORESTRY FIELD HOUSES 32
- GARAGES 11
- GREENHOUSE 31
- GYMNASIUM 1
- HORSE BARN 30
- HORTICULTURAL BARN 28
- HYDRAULICS LABORATORY 18
- LIBRARY 2
- MECHANICAL LABORATORIES 18
- MINING & METALLURGY 16
- PIGGERY 26
- POWER HOUSE 10
- RECEIVING HOUSE 13
- SCIENCE 3
- SHEEP BARN 24
- VOCATIONAL BUILDINGS (AGRICULTURAL) 21, 22
- WORKSHOPS 15
- BROCK MEMORIAL 33
- ARMOURY 34

■ PERMANENT BUILDINGS
▨ SEMI-PERMANENT BUILDINGS

SCALE OF FEET
0 500 1000 1500