

PUBLICATIONS OF THE UNIVERSITY OF BRITISH COLUMBIA

The University OF British Columbia



CALENDAR

THIRTY-SIXTH SESSION
1950-1951

VANCOUVER, BRITISH COLUMBIA
1950

VOL. 36

GENERAL SERIES

No. 1

TIME TABLES

Schedules showing hours and rooms for lectures and laboratories will be available during the registration period beginning September 18th.

NEW REGULATIONS

Attention of students in Arts and Science and in Agriculture is called to new regulations governing Examinations, Supplementals, and Advancement. Students in Arts and Science should consult pages 95-96 and 125-126; those in Agriculture should consult pages 257-259.

Students proposing to enter Law should note the revised admission requirements, page 273.

NEW AREA STUDY COURSES

A number of new area study courses, made possible by a grant from the Rockefeller Foundation, New York, are offered in Slavonic Studies (pages 174-175). These courses are designed to appeal to students in various fields, such as Commerce, Economics, Education, English, French, Geography, German, History, Home Economics, International Studies, Political Science, Sociology, and Social Work. Certain courses count for credit in some of these departments.

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, 1950.

The University
OF
British Columbia



CALENDAR

THIRTY-SIXTH SESSION
1950-1951

VANCOUVER, BRITISH COLUMBIA
1950

1950-51

CONTENTS

GENERAL INFORMATION

	Page
Academic Year	5
Visitor	7
Chancellor	7
President	7
Board of Governors	7
Senate	7
Convocation	9
Officers and Staff	9
Faculty Council	10
Historical Sketch	27
Constitution of University	29
Library	29
Museums	30
Gymnasiums	31
Stadium	31
Brock Building	32
Art Centre	32
Health Service	33
Dean of Women	35
Board and Residence	35
Counselling Bureau	36
Placement Bureau	36
Self-Help Programme	36
Veterans' Bureau	36
Courses of Study	37
Academic Dress	37
Admission to University	38
Registration and Attendance	39
Fees	41
Scholastic Awards	45
Graduate Fellowships	47
Graduate Scholarships	47
Assistantships	53
Undergraduate Scholarships	53
Medals and Prizes	66
Student Assistance	71
Bursaries	72
Loan Funds	81
Outside Awards	84
Inter-University Exchange	91
Lectureships	92

FACULTY OF ARTS AND SCIENCE

Degrees Offered	95
Degree of B.A.	95
Admission	95
Registration	95
Summer Session Credits	95
Senior Matric Credits	96
Religious Knowledge Options	96
General Regulations	96
First and Second Years	96
Third and Fourth Years	99
General Course	99
Honours Courses	100

Faculty of Arts and Science—(Continued)

	Page
Single Honours Courses	101
Combined Honours Courses	107
Degree of B.Com.	110
Options in Commerce	113
Degree of B.H.E.	114
Options in Home Economics	114
Physical Education	115
Degree of B.P.E.	117
Degree of B.Ed.	119
Social Work	120
Degree of B.S.W.	121
Degree of M.S.W.	122
Teacher Training Course	123
Examinations and Advancement	125
Course Descriptions	127

FACULTY OF APPLIED SCIENCE

Foreword	189
Admission	189
Degrees Offered	190
Degree of B.A.Sc.	191
Practical Work	191
Opening of Session	191
Supplementals	192
First and Second Years	192
Third and Fourth Year Essays	193
Agricultural Engineering	194
Chemical Engineering	195
Civil Engineering	196
Electrical Engineering	197
Forest Engineering	198
Forestry-B.S.F. Course	199
Geological Engineering	202
Mechanical Engineering	203
Metallurgical Engineering	204
Mining Engineering	205
Engineering Physics	206
Nursing and Health	207
Degree Courses in Nursing	207
Nursing Certificate Courses	211
Degree of B.Arch.	212
Architecture Curriculum	213
Examinations and Advancement	214
Course Descriptions	216
University Research Forest	229
Forest Products Laboratories	229

FACULTY OF AGRICULTURE

General	241
Admission	241
Occupational Course	241
Professional Gardeners' Course	242
Short Courses	242
Degree of B.S.A.	242
Four-Year General Course	242

Faculty of Agriculture—(Continued)	
	Page
First and Second Years	242
Third and Fourth Years	243
Five-Year Honours Courses	244
Agricultural Economics	245
Agricultural Mechanics	245
Agricultural Science	246
Agronomy	247
Plant Breeding	247
Soils	248
Animal Nutrition	249
Animal Science	249
Commerce	250
Dairy Bacteriology	250
Dairy Technology	251
Entomology	251
Food Technology	252
Horticultural Science	253
Plant Nutrition	254
Plant Pathology	255
Poultry Nutrition	256
Poultry Science	256
Teacher Training	257
Examinations and Advancement	257
Course Descriptions	259

FACULTY OF LAW

General	273
Admission	273
Advanced Standing	273
Registration	273
Combined Course	273
Attendance	273
Examinations	273
Admission to Bar	274
Moot Court	274
First Year Courses	274
Second Year Courses	275
Third Year Courses	276

FACULTY OF PHARMACY

General	279
Admission	279
Registration	279
Physical Education	279

Faculty of Pharmacy—(Continued)	
	Page
Examinations and Advancement	279
Curriculum	280
Course of Instruction	281

FACULTY OF MEDICINE

	Page
General	285
Admission	285
Pre-Medical Courses	286
Registration	287
Microscopes	287
Students' Supplies	287
Examinations and Advancement	287
Courses of Instruction	288

FACULTY OF GRADUATE STUDIES

Degrees Offered	291
Master's Degree Requirements	291
Degree of M.A.	293
Degree of M.A.Sc.	296
Degree of M.F.	297
Degree of M.S.A.	297
Requirements for Ph.D.	298
Ph.D. Courses Offered	300

MISCELLANEOUS

Institute of Oceanography	303
Courses in Oceanography	304
Double Degrees	305
Summer Session	309
Correspondence Courses	310
Extra-Sessional Courses	311
University Extension	311
Extension Programme	312
University Training Corps	313
Student Organization	315
Summer Session Students	319
Alumni Association	319
Victoria College	321
Union College of B. C.	323
Anglican College of B. C.	323
Registration, 1949-50	324
Donations 1948-49	326
Alumni Development Fund	347

ACADEMIC YEAR

1950

August		
1st Tuesday		Last day for submission of applications for supplemental examinations.
11th Friday	}	Supplemental examinations—First Year Nursing.
12th Saturday		
15th Tuesday		
15th Tuesday		Last day for submission of applications for admission to First Year Nursing.
15th Tuesday		Last day for submission of applications for bursaries.
24th Thursday	}	Supplemental examinations.
September		
1st Friday		
1st Friday		ACADEMIC YEAR begins.
4th Monday		Labour Day. University closed September 2nd to 4th, inclusive.
5th Tuesday	}	Registration, Faculty of Medicine.
6th Wednesday		
7th Thursday		
8th Friday		Lectures begin, Faculty of Medicine.
18th Monday to	}	Counselling tests, see page 36.
23rd Saturday		
		Registration in person for Winter Session as follows:
		Arts and Science, Agriculture, Pharmacy and Graduate Studies.
		First and Second Years, 18th to 23rd, inclusive.
		Other years, 19th to 23rd, inclusive.
		Applied Science and Law:
		All years, 20th to 23rd, inclusive.
		Hours: Monday to Friday, 9 a.m. to 4 p.m.
		Saturday, 9 a.m. to 12 noon.
23rd Saturday		Last day for registration and payment of First Term fees of all students, both undergraduate and graduate, except those in Extra-Sessional Classes and Correspondence Courses.
25th Monday		Lectures begin at 8:30 a.m.
October		
2nd Monday		Last day for handing in graduation essays and theses (Autumn Congregation.)
6th Friday		Last day for change in students' courses.
6th Friday		Meetings of the Faculty Council. (Subsequent meetings to be held at the call of the President).
		Thanksgiving Day. University closed.
11th Wednesday		Meeting of the Faculty of Arts and Science.
13th Friday		Meeting of the Faculty of Agriculture.
14th Saturday		Last day for handing in applications for course leading to Master's degree.
17th Tuesday		Meeting of the Faculty of Law.
18th Wednesday		Meeting of the Senate.
25th Wednesday		Congregation.
December		
6th Wednesday		Meeting of the Faculty of Arts and Science.
8th Friday		Meeting of the Faculty of Agriculture.
11th Monday		Meeting of the Faculty of Law.
13th Wednesday		Meeting of the Senate.
19th Tuesday		First Term ends.
25th Monday		Christmas Day. University closed December 23rd to 26th, inclusive.

January

1st Monday	New Year's Day. University closed January 1st and 2nd.
3rd Wednesday	Second Term begins.
10th Wednesday	Last day for payment of Second Term fees. Payment of second instalment of scholarship money.
31st Wednesday	Meeting of the Faculty of Arts and Science.

February

2nd Friday	Meeting of the Faculty of Agriculture.
5th Monday	Meeting of the Faculty of Law.
14th Wednesday	Meeting of the Senate.

March

15th Thursday	Last day for handing in applications for graduate scholarships.
23rd Friday	Good Friday. University closed March 23rd to 26th, inclusive.

April

18th Wednesday	Last day of lectures.
18th Wednesday	Last day for handing in graduation essays and theses.
20th Friday	Sessional examinations begin.

May

4th Friday	Sessional examinations end.
4th Friday	Last day for handing in applications for undergraduate scholarships.
7th Monday	Field work in Applied Science begins immediately at the close of the examinations.
12th Saturday	Meeting of the Faculty of Agriculture.
14th Monday	Meeting of the Faculty of Arts and Science.
14th Monday	Meeting of the Faculty of Law.
15th Tuesday	Meeting of the Senate.
17th Thursday	Congregation.
18th Friday	Congregation.
18th Friday	Meeting of Convocation.
24th Thursday	Victoria Day. University closed.

June

9th Saturday	King's Birthday. University closed. Counselling tests, see page 36.
--------------	--

July

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

August

1st Wednesday	Last day for submission of applications for supplemental examinations.
17th Friday	Summer Session ends.
24th Friday	Meeting of the Faculty of Arts and Science.
24th Friday	Meeting of the Senate.
31st Friday	ACADEMIC YEAR ends.

The University of British Columbia

VISITOR

THE HON. C. A. BANKS, C.M.G., 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, K.C., B.A., LL.B., LL.M.,
LL.D., D.C.L., F.R.S.C.

BOARD OF GOVERNORS

(a) Ex-Officio:

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.

Term expires 1953.

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

Term expires 1950.

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

Term expires 1952.

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

WILLIAM GEORGE MURRIN, Vancouver. Term expires 1955.

D'ARCY J. BALDWIN, M.B.E. Term expires 1955.

THE HON. MR. JUSTICE JAMES M. COADY, K.C., B.A., Vancouver.

Term expires 1951.

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

Term expires 1951.

R. H. NEELANDS, Vancouver. Term expires 1953.

GEORGE T. CUNNINGHAM, Vancouver. Term expires 1953.

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, BLYTHE EAGLES, B.A., Ph.D..

Dean of the Faculty of Applied Science, JOHN NORISON FINLAYSON, M.Sc.,
LL.D., D.Sc., M.E.I.C., M.Am.Soc. (Retiring June 30th, 1950).

Dean of the Faculty of Arts and Science, S. N. F. CHANT, O.B.E., M.A.

Dean of the Faculty of Law, GEORGE FREDERICK CURTIS, LL.B., B.A., B.C.L.

Dean of the Faculty of Graduate Studies, HENRY F. ANGUS, B.A., B.C.L.,
M.A., LL.D., F.R.S.C.

Dean of the Faculty of Pharmacy, ESLE LONGWORTH WOODS, B.S.P., M.Sc.
 Dean of the Faculty of Medicine, MYRON McDONALD WEAVER, A.B., M.S.,
 Ph.D., M.D.

Dean of Administrative and Inter-Faculty Affairs, WALTER H. GAGE, M.A.
 Dean of Women, MISS M. DOROTHY MAWDSLEY, B.A., M.A., Ph.D.

Representatives of the Faculty of Agriculture:

VERNON C. BRINK, M.S.A., Ph.D.; JACOB BIELY, M.S.A., M.S. Terms
 expire 1951.

Representatives of the Faculty of Applied Science:

C. E. DOLMAN, M.R.C.S., L.R.C.P., M.B., B.S., M.R.C.P., D.Ph.,
 Ph.D., F.A.P.H.A., F.R.S.C.; J. FRED MUIR, B.Sc. Terms expire
 1951.

Representatives of the Faculty of Arts and Science:

ROY DANIELS, B.A., Ph.D.; T. M. C. TAYLOR, B.A., Ph.D. Terms ex-
 pire 1951.

Representatives of the Faculty of Law:

FREDERICK READ, LL.B.; GILBERT D. KENNEDY, M.A., LL.B. Terms
 expire 1951.

Representatives of the Faculty of Pharmacy:

LAWRENCE E. RANTA, M.D., D.P.H.; FINLAY A. MORRISON, M.B.E.,
 B.S.P. Terms expire 1951.

Representatives of the Faculty of Graduate Studies:

H. J. MACLEOD, O.B.E., B.Sc., M.Sc., A.M., Ph.D., M.E.I.C., Mem.
 I.R.E., Fellow A.I.E.E.; GEORGE M. VOLKOFF, M.B.E., M.A., Ph.D.,
 D.Sc., F.R.S.C.

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

H. N. MACCORKINDALE, B.A., Vancouver. Term expires 1952.

FRANCIS J. BURD, C.B.E., Vancouver. Term expires 1952.

H. C. HOLMES, M.A., Victoria. Term expires 1952.

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

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

(e) Representative of the High School Principals and Assistants, W. R.
 McDOUGALL, B.A., North Vancouver. Term expires 1953.

(f) Representatives of Affiliated Colleges:

Victoria College, Victoria, JOHN M. EWING, B.A., D.Faed. Term ex-
 pires 1951.

Union College of British Columbia, Vancouver (Theological), REV. W.
 S. TAYLOR, M.A., B.D., Ph.D. Term expires 1951.

The Anglican Theological College of British Columbia, Vancouver,
 REV. K. E. TAYLOR, O.B.E., M.A., B.D., D.D. Term expires 1951.

(g) Elected by Convocation:

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

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

R. E. FOERSTER, M.A., Ph.D., F.R.S.C., Nanaimo.

E. DAVIE FULTON, B.A., M.P.

A. E. D. GRAUER, B.A., Ph.D., Vancouver.
 SHERWOOD LETT, C.B.E., D.S.O., M.C., E.D., B.A., LL.D., Vancouver.
 A. E. LORD, B.A., Vancouver.
 R. C. PALMER, M.S.A., D.Sc., Summerland.
 WALTER N. SAGE, M.A., Ph.D., F.R.Hist.S., F.R.S.C., Vancouver.
 AUSTIN B. SCHINBEIN, O.B.E., M.B., F.A.C.S., Vancouver.
 FRANK A. TURNBULL, B.A., M.D., Vancouver.
 ROBERT T. D. WALLACE, M.A., Victoria.
 H. V. WARREN, B.A., B.A.Sc., B.Sc., D.Phil., Assoc.Inst.M.M.,
 F.G.S.A., F.R.S.C., Vancouver.
 C. A. H. WRIGHT, M.Sc., Ph.D., Trail.
 DARRELL T. B. BRAIDWOOD, M.A., Vancouver.
 Terms expire 1951.

- (h) Representative of the British Columbia Teachers' Federation:
 MISS FLORENCE S. MULLOY, M.A., Vancouver. Term expires 1952.

CONVOCATION

THE HON. ERIC W. HAMBER, C.M.G., B.A., LL.D., Chancellor of the University
 of British Columbia, Chairman.
 F. D. BOLTON, B.A., B.A.Sc., Secretary.

OFFICERS AND STAFF

NORMAN A. M. MACKENZIE, C.M.G., M.M. and Bar, K.C., B.A., LL.B. (Dal-
 housie), LL.M. (Harvard), LL.D. (Mount Allison, New Brunswick, Tor-
 onto, Ottawa, Bristol), D.C.L. (Whitman), F.R.S.C., President.
 S. N. F. CHANT, O.B.E., M.A., Dean of the Faculty of Arts and Science.
 JOHN NORISON FINLAYSON, M.Sc. (McGill), LL.D. (Manitoba), D.Sc. (Laval),
 M.E.I.C., M.Am.Soc.C.E., Dean of the Faculty of Applied Science. (Retir-
 ing June 30th, 1950).
 BLYTHE EAGLES, B.A. (Brit. Col.), Ph.D. (Toronto), Dean of the Faculty of
 Agriculture.
 GEORGE FREDERICK CURTIS, LL.B. (Sask.), B.A., B.C.L. (Oxon.), Dean of the
 Faculty of Law.
 HENRY F. ANGUS, B.A. (McGill), B.C.L., M.A. (Oxon.), LL.D. (McGill),
 F.R.S.C., Dean of the Faculty of Graduate Studies.
 ESLI LONGWORTH WOODS, B.S.P. (Sask.), M.Sc. (Wisconsin), Dean of the
 Faculty of Pharmacy.
 MYRON McDONALD WEAVER, A.B. (Wheaton College), M.S., Ph.D., M.D.
 (Chicago), Dean of the Faculty of Medicine.
 WALTER H. GAGE, M.A. (Brit. Col.), Dean of Administrative and Inter-Faculty
 Affairs.
 MISS M. DOROTHY MAWDSLEY, B.A. (McGill), M.A. (Brit. Col.), Ph.D. (Chi-
 cago), Dean of Women.
 GEOFFREY C. ANDREW, B.A. (Dalhousie), M.A. (Oxon.), Assistant to the
 President.
 J. RANTON MCINTOSH, B.A., M.Ed. (Sask), Ph.D. (Columbia), Director of the
 Summer Session.
 CHARLES B. WOOD, B.A. (Toronto), A.M. (Columbia), Registrar.
 MISS MYRTLE L. KIEVELL, B.A. (Brit. Col.), Assistant Registrar.

R. M. BAGSHAW, C.A., Bursar.

LESLIE W. DUNLAP, B.A. (Oregon), A.M., B.S., Ph.D. (Columbia), Librarian.

MRS. HELEN HARMER, B.A. (Brit. Col.), Secretary to the President.

JOHN D. LEE, Superintendent of Buildings and Grounds.

FACULTY COUNCIL

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.

Dean of the Faculty of Arts and Science, S. N. F. CHANT, O.B.E., M.A.

Dean of the Faculty of Applied Science, JOHN NORISON FINLAYSON, M.Sc., LL.D., D.Sc., M.E.I.C., M.Am.Soc.C.E. (Retiring June 30th, 1950).

Dean of the Faculty of Agriculture, BLYTHE EAGLES, B.A., Ph.D.

Dean of the Faculty of Law, GEORGE FREDERICK CURTIS, LL.B., B.A., B.C.L.

Dean of the Faculty of Pharmacy, ESLE LONGWORTH WOODS, B.S.P., M.Sc.

Dean of the Faculty of Medicine, MYRON McDONALD WEAVER, A.B., M.S., Ph.D., M.D.

Dean of the Faculty of Graduate Studies, HENRY F. ANGUS, B.A., B.C.L., M.A., LL.D., F.R.S.C.

Dean of Administrative and Inter-Faculty Affairs, WALTER H. GAGE, M.A.

Dean of Women, MISS M. DOROTHY MAWDSLEY, B.A., M.A., Ph.D.

Representatives of the Faculties: JOSEPH A. CRUMB, B.B.A., M.S., Ph.D.; B. N. MOYLS, M.A., Ph.D.; WILLIAM ROBBINS, M.A., Ph.D.; L. G. CROUCH, B.Sc., M.Sc.; T. L. COULTHARD, B.E.; GILBERT D. KENNEDY, M.A., LL.B.; E. V. WHITE, B.A.Sc., M.Sc., Ph.D.; G. M. SHRUM, O.B.E., M.M., E.D., M.A., Ph.D., F.R.S.C.; C. E. DOLMAN, M.R.C.S., L.R.C.P., M.B., B.S., M.R.C.P., D.P.H., Ph.D., F.A.P.H.A., F.R.S.C.

President Emeritus

L. S. KLINCK, B.S.A. (Toronto), M.S.A., D.Sc. (Iowa State College and Brit. Col.), LL.D. (Western Ontario), Officier de l'Instruction Publique, F.R.S.C.

Deans Emeriti

DANIEL BUCHANAN, M.A. (McMaster), Ph.D. (Chicago), LL.D. (McMaster), D.Sc. (Brit. Col.), F.R.S.C., Dean Emeritus of Arts and Science.

F. M. CLEMENT, B.S.A. (Toronto), M.A. (Wisconsin), D.Sc. (Brit. Col.), Dean Emeritus of Agriculture.

Professors Emeriti

JAMES HENDERSON, M.A. (Glasgow), Professor Emeritus of Philosophy.

LEMUEL ROBERTSON, M.A. (McGill), LL.D. (Brit. Col.), Professor Emeritus of Classics.

H. T. J. COLEMAN, B.A. (Toronto), Ph.D. (Columbia), Professor Emeritus of Philosophy and Psychology.

J. M. TURNBULL, B.A.Sc. (McGill), M.C.I.M., Professor Emeritus of Mining.

GEORGE A. GILLIES, M.Sc. (McGill), M.C.I.M., M.A.I.M.E., Professor Emeritus of Mineral Dressing.

ROBERT H. CLARK, M.A. (Toronto), Ph.D. (Leipzig), F.R.S.C., Professor Emeritus of Chemistry.

JOHN DAVIDSON, F.L.S., F.B.S.E., Professor Emeritus of Botany.

A. E. HENNINGS, M.A. (Lake Forest), Ph.D. (Chicago), Professor Emeritus of Physics.

- W. L. MACDONALD, B.A. (Toronto), M.A. (Wisconsin), Ph.D. (Harvard), Professor Emeritus of English.
- MISS ISABEL MACINNES, M.A. (Queen's), Ph.D. (California), Professor Emeritus of German.
- F. A. WILKIN, B.A.Sc. (McGill), Professor Emeritus of Civil Engineering.
- A. F. B. CLARK, B.A. (Toronto), Ph.D. (Harvard), Professor Emeritus of French.
- O. J. TODD, A.B., Ph.D. (Harvard), F.R.S.C., Professor Emeritus of Classics.
- FRANK E. BUCK, B.S.A. (McGill), Professor Emeritus of Horticulture.
- M. Y. WILLIAMS, B.Sc. (Queen's), Ph.D. (Yale), F.G.S.A., F.R.S.C., Professor Emeritus of Geology.

Department of Agricultural Economics

- WALTON J. ANDERSON, B.S.A., M.Sc. (Sask.), Associate Professor and Acting Head of the Department.

Department of Agricultural Engineering

- J. R. W. YOUNG, B.S.A., M.Sc. (Sask.), Associate Professor and Head of the Department.
- F. C. LEROUX, B.E. (Sask.), Associate Professor.
- T. L. COULTHARD, B.E. (Sask.), Assistant Professor.

Department of Agricultural Mechanics

- J. R. W. YOUNG, B.S.A., M.Sc. (Sask.), Associate Professor and Head of the Department.
- F. C. LEROUX, B.E. (Sask.), Associate Professor.
- T. L. COULTHARD, B.E. (Sask.), Assistant Professor.

Department of Agronomy

- G. G. MOE, B.S.A., M.Sc., (McGill), Ph.D. (Cornell), Professor and Head of the Department.
- D. G. LAIRD, B.S.A. (Toronto), M.S., Ph.D. (Wisconsin), Professor of Soils.
- VERNON C. BRINK, M.S.A. (Brit. Col.), Ph.D. (Wisconsin), Associate Professor.
- C. A. ROWLES, M.Sc. (Sask.), Ph.D. (Minnesota), Associate Professor of Soils.
- ARTHUR RENNEY, B.S.A. (Brit. Col.), M.S. (California), Assistant Professor.
- JOHN T. GILLINGHAM, B.S.A. (Brit. Col.), M.Sc. (McGill), Lecturer.

Department of Animal Husbandry

- H. M. KING, B.S.A. (Toronto), M.S. (Oregon State College), Professor and Head of the Department.
- STANLEY N. WOOD, B.S.A. (Sask.), D.V.M. (Iowa State College), Professor.
- J. C. BERRY, M.S.A. (Brit. Col.), Ph.D. (Iowa State College), Associate Professor.
- A. J. WOOD, M.S.A. (Brit. Col.), Ph.D. (Cornell), Associate Professor.

Department of Architecture

- FREDERIC LASSEIRE, B.Arch. (Toronto), M.R.A.I.C., Professor and Head of the Department.
- JOHN C. H. PORTER, B.Arch. (McGill), M.R.A.I.C., Assistant Professor.

- B. PAUL WISNICKI, Dip.Eng. (Lwow, Poland), M.E.I.C., M.I.Ae.S., Assistant Professor of Structural and Industrial Design.
- KEITH B. DAVISON, B.Arch. (Manitoba), M.R.A.I.C., Assistant Professor.
- LEONARD C. MARSH, B.Sc. (Econ.) (London), M.A., Ph.D. (McGill), Special Lecturer.
- B. C. BINNING, Assistant Professor of Art and Design.
- JAMES H. KLEEGER, B.F.A. (Syracuse), Assistant Professor of Art and Design.
- H. PETER OBERLANDER, B.Arch. (McGill), M.C.P. (Harvard), A.R.I.B.A., A.M.T.P.I., M.A.A., Assistant Professor of Planning and Design.
- A. E. SIMPSON, Part Time Lecturer.

Department of Bacteriology and Preventive Medicine

- 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., F.R.S.C., Professor and Head of the Department.
- D. C. B. DUFF, M.A., Ph.D. (Toronto), Professor.
- LAWRENCE E. RANTA, M.D., D.P.H. (Toronto), Associate Professor.
- MISS HELEN CHANG, M.A. (Brit. Col.), Instructor.

Department of Biology and Botany

- ANDREW H. HUTCHINSON, M.A. (McMaster), Ph.D. (Chicago), F.R.S.C., Professor and Head of the Department.
- FRANK DICKSON, B.A. (Queen's), Ph.D. (Cornell), Professor.
- JOHN ALLARDYCE, M.A. (Brit. Col.), Ph.D. (McGill), Professor.
- T. M. C. TAYLOR, B.A. (Brit. Col.), Ph.D. (Toronto), Professor and Curator of the Herbarium and Botanical Gardens.
- D. J. WORT, M.Sc. (Sask.), Ph.D. (Chicago), Professor.
- EDGAR BLACK, M.B.E., B.A. (McMaster), M.A. (Brit. Col.), Ph.D. (Pennsylvania), Associate Professor.
- DONALD C. BUCKLAND, B.A., B.S.F. (Brit. Col.), M.F., Ph.D. (Yale), Associate Professor of Forest Pathology.
- R. W. PILLSBURY, M.A. (Brit. Col.), Assistant Professor.
- MRS. RUTH FIELDS BRINK, B.A. (Brit. Col.), A.M. (California), Lecturer.
- VLADIMIR KRAJINA, D.Sc. (Natural-Science) (Charles', Prague), Special Lecturer.
- MISS MAUDE ALLEN, B.S.A., B.A. (Brit. Col.), Lecturer.

Department of Chemistry

- J. GILBERT HOOLEY, M.A. (Brit. Col.), Ph.D. (Mass. Inst. of Technology), Professor and Chairman of the Department.
- J. ALLEN HARRIS, M.A. (Brit. Col.), Ph.D., (Illinois), Professor.
- E. V. WHITE, B.A.Sc., (Toronto), M.Sc., Ph.D. (McGill), Professor.
- L. W. SHEMAIT, B.A.Sc. (Toronto), M.Sc. (Manitoba), Ph.D. (Toronto), Associate Professor.
- S. H. ZBARSKY, B.A. (Sask.), M.A., Ph.D. (Toronto), Associate Professor in Biochemistry.
- HARRY M. DAGGETT JR., B.Sc. (Queen's), Ph.D. (Brown), Assistant Professor.
- MILTON KIRSCH, B.Sc., Ph.D. (McGill), Assistant Professor.

- W. A. BRYCE, M.A. (Sask.), Ph.D. (McGill), D.Phil. (Oxon.), Assistant Professor.
D. S. SCOTT, M.Sc. (Alta.), Ph.D. (Illinois), Assistant Professor.
BASIL A. DUNELL, M.A.Sc. (Brit. Col.), A.M., Ph.D. (Princeton), Assistant Professor.
C. W. LARKAM, M.S. (Idaho), S.M. (Mass. Inst. of Technology), Lecturer.
G. R. HARRIS, M.A. (Brit. Col.), Lecturer.
MRS. J. G. HOOLEY, B.A. (Brit. Col.), Lecturer.
GUY G. S. DUTTON, M.A. (Cantab.), Instructor.
J. P. TULLY, M.B.E., B.Sc., (Man.), Ph.D. (Washington), A.I.C., F.C.I.C., Honorary Lecturer in Chemical Oceanography.

Department of Civil Engineering

- JOHN NORISON FINLAYSON, M.Sc. (McGill), LL.D. (Manitoba), D.Sc. (Laval), M.E.I.C., M.Am.Soc.C.E., Professor and Head of the Department. (Retiring June 30th, 1950).
J. FRED MUIR, B.Sc. (Manitoba), Professor.
ALLAN H. FINLAY, M.C., B.A.Sc. (Brit. Col.), M.S. in C.E. (Illinois), Assoc. M.Am.Soc.C.E., Professor.
ALEXANDER HRENNIKOFF, Grad., Inst. of Communication Engineering, Moscow, Russia, M.A.Sc. (Brit. Col.), Sc.D. (Mass. Inst. of Technology), Assoc. M.Am.Soc.C.E., M.E.I.C., Professor.
EDWARD S. PRETIUS, B.A.Sc. (Brit. Col.), M.Sc. (Iowa), Assoc. M.Am.Soc.C.E., Professor.
ARCHIE PEEBLES, B.A.Sc., B.A. (Brit. Col.), M.Sc. (Iowa State College), M.E.I.C., Assoc. M.Am.Soc.C.E., Professor.
SAMUEL L. LIPSON, B.A.Sc. (Brit. Col.), M.Sc. (Cal. Inst. Tech.), Assoc. M.Am.Soc.C.E., Professor.
S. H. DEJONG, M.Sc. (Manitoba), D.L.S., B.C.L.S., M.E.I.C., Associate Professor.
W. G. HESLOP, B.A.Sc. (Toronto), M.E.I.C., Assoc. C.I.M., Associate Professor.
H. R. BELL, B.A.Sc. (Brit. Col.), Assistant Professor.
J. B. ALEXANDER, M.Sc. (New Brunswick), Part-time Lecturer.
JOSEPH E. A. KANIA, M.A.Sc. (Brit. Col.), Ph.D. (Mass. Inst. of Technology), Part-time Lecturer.
ROBERT H. McLELLAN, B.A.Sc. (Brit. Col.), Instructor.
RICHARD G. SCARISBRICK, B.A.Sc. (Brit. Col.), Instructor.
J. PATRICK BELEV, B.A.Sc. (Brit. Col.), Instructor.
LEONARD COX, B.A.Sc. (Brit. Col.), Instructor.
JOHN R. EVANS, B.Sc. (Queen's), Instructor.
FRED SHUMAS, B.A.Sc. (Brit. Col.), Instructor.
D. R. DUGUID, B.Sc. (Edinburgh), Instructor.
W. J. PHILLIPS, B.A.Sc. (Brit. Col.), Instructor.
MURRAY G. ALBERTSON, B.S. (Swarthmore), Instructor.
MATTHEW B. M. LAWSON, B.Sc. (Glasgow), Instructor.
LESTER R. STUCKEY, B.A.Sc. (Brit. Col.), Instructor.

Department of Classics

- H. T. LOGAN, M.C., B.A. (McGill), M.A. (Oxon.), Professor and Head of the Department.
- GEOFFREY B. RIDDEHOUGH, M.A. (Brit. Col.), A.M. (California), Associate Professor.
- W. LEONARD GRANT, B.A. (Brit. Col.), A.M. (Harvard), Ph.D. (Toronto), Associate Professor.
- PATRICK C. F. GUTHRIE, B.A. (Manitoba), M.A., Ph.D. (Toronto), Assistant Professor.

Department of Commerce

- ELLIS H. MORROW, B.A. (Queen's), M.B.A. (Harvard), Professor and Head of the Department. (Retiring June 30th, 1950).
- E. D. MCPHEE, M.M., M.A., B.Ed. (Edinburgh), Professor and Head of the Department. (From July 1st, 1950).
- DONALD K. BELL, B.Com. M.A. (Brit. Col.), Associate Professor.
- RICHARD A. MAHONEY, B.A. (Manitoba), M.B.A. (Harvard), Associate Professor.
- JAMES M. MOYNES, B.A., B.Acc. (Sask.), C.A., M.B.A. (Chicago), Associate Professor.
- LESLIE G. J. WONG, B.Com. (Brit. Col.), M.B.A. (California), Assistant Professor.
- C. WILLIAM VAN HOUTEN, B.Com. (Brit. Col.), Assistant Professor.
- LYLE M. MARKHART, B.B.A., (Wash.), C.P.A. (State of Wash.), Assistant Professor.
- COLIN C. GOURLAY, B.Com. (Brit. Col.), Instructor.
- A. E. CARLSEN, Cand. Phil. (Copenhagen), Special Lecturer.
- MRS. OLGA SWALLOW, B.A., B.Com. (Brit. Col.), Instructor.

Honorary Lecturer:

FREDERICK FIELD, C.A.

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.), Assistant Professor.
- MRS. OLGA VOLKOFF, M.S.A. (Brit. Col.), Special Lecturer. (Session 1949-50).
- P. C. TRUSSELL, B.S.A. (Brit. Col.), Ph.D. (Wisconsin), Special Lecturer.

Department of Economics, Political Science, and Sociology

- HENRY F. ANGUS, B.A. (McGill), B.C.L., M.A. (Oxon.), LL.D. (McGill), F.R.S.C., Professor and Head of the Department.
- JOSEPH A. CRUMB, B.B.A. (Washington), M.S., Ph.D. (California), Professor and Acting Head of the Department (Session 1949-50).
- 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.
- HARRY B. HAWTHORN, M.Sc., B.A. (New Zealand), Ph.D. (Yale), Professor of Anthropology.
- STUART JAMIESON, B.A. (Brit. Col.), M.A. (McGill), Ph.D. (California), Associate Professor.

- H. E. RONIMOIS, M.Sc. (Econ.) (Tartu), Ph.D. (London), Associate Professor.
ROBERT M. CLARK, B.A., B.Com. (Brit. Col.), A.M., Ph.D. (Harvard), Assistant 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, Ottawa, Bristol), D.C.L. (Whitman), F.R.S.C., Honorary Lecturer in Political Science.
W. H. MERRITT, M.A. (Toronto), Lecturer.
D. C. ROWAT, B.A. (Toronto), M.A. (Columbia), Lecturer.
CHARLES E. BORDEN, M.A., Ph.D. (California), Lecturer.

Department of Education

- MAXWELL A. CAMERON, M.A. (Brit. Col.), Ph.D. (Toronto), Professor and Head of the Department.
K. F. ARGUE, B.A. (Alberta), M.A. (Oxon.), D.Ed. (Columbia), Professor.
J. RANTON McINTOSH, B.A., M.Ed. (Sask.), Ph.D. (Columbia), Professor of Education and Psychology.
B. POPE, B.Sc., B.Ed. (Man.), Ph.D. (California), Assistant Professor.
D. N. MACLEAN, B.A., B.Ed., (Brit. Col.), Lecturer. (Session 1949-50).
R. C. M. RUSSELL, B.A. (Brit. Col.), Lecturer. (Session 1949-50).

Part-time Lecturers:

- Miss C. S. Black, B.Sc. (H.Ec.), A.M.; Miss S. M. Boyles, M.A.; Mrs. M. Brown, B.Sc. (Phys. Ed.); Miss J. Carmichael, B.A., B.P.H.E., A.M.; J. B. DeLong, B.A., LL.D.; W. L. Grant, B.A., A.M., Ph.D.; Miss M. Henderson, B.A., A.M.; A. B. Laithwaite, Dip. in Phys. Ed.; A. R. Lord, B.A., LL.D.; Miss M. McManus, Mus. Bac., M.A.; E. G. Ozard, B.A.; Miss D. Somerset, A.B.; S. Risk, M.A.; H. D. Whittle, B.P.H.E.

Department of English

- ROY DANIELLS, B.A. (Brit. Col.), Ph.D. (Toronto), Professor and Head of the Department.
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.
A. EARLE BIRNEY, B.A. (Brit. Col.), M.A., Ph.D. (Toronto), Professor.
EDMUND MORRISON, B.A. (Brit. Col.), A.M., Ph.D. (California), Professor.
WILLIAM ROBBINS, M.A. (Brit. Col.), Ph.D. (Toronto), Professor.
GEOFFREY C. ANDREW, B.A. (Dalhousie), M.A. (Oxon.), 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.
JOHN H. CREIGHTON, M.A. (Toronto), Associate Professor.
STANLEY E. READ, M.A. (McGill), Associate Professor.
R. E. WATERS, M.A. (Toronto), Ph.D. (Wisconsin), Associate Professor.
J. G. SPAULDING, A.B. (Pomona), Ph.D. (California), Associate Professor.
G. PHILIP V. AKRIGG, M.A. (Brit. Col.), Ph.D. (California), Associate Professor.
MISS RUTH HUMPHREY, B.A. (Mount Allison), M.A. (Oxon.), Assistant Professor.

JOHN D. GRANT, M.A. (Brit. Col.), Ph.D. (Toronto), Assistant Professor.
 R. C. CRAGG, M.A., Ph.D. (Toronto), Assistant Professor.
 M. W. STEINBERG, M.A. (Queen's), Assistant Professor.
 MISS E. L. BAXTER, B.A. (Brit. Col.), A.M. (Wash.), Assistant Professor.
 BYRON L. FERGUSON, B.A. (Brit. Col.), Assistant Professor.
 MISS D. SOMERSET, A.B. (Radcliffe), Assistant Professor.
 MRS. MARION B. SMITH, B.A. (Toronto), Ph.D. (Pennsylvania), Lecturer.
 CRAIG MILLER, M.A., B.Ed. (Sask.), Lecturer.
 A. R. HAINES, D.F.C., B.A. (Brit. Col.), Lecturer.
 J. E. CONWAY, M.A. (Toronto), Lecturer.
 MRS. J. A. HATCH, M.A. (McGill), Lecturer.
 PETER JONES, M.A. (Oxon.), Lecturer.
 MRS. H. C. LEWIS, M.A. (Brit. Col.), Lecturer.
 MISS EDITH MCKENZIE, B.A. (Sask.), Lecturer.
 MISS KATHERINE MCNIVEN, B.A. (Dalhousie), Lecturer.
 F. W. ROBINSON, B.A. (Brit. Col.), Lecturer.
 MRS. W. W. WATSON, M.A. (Brit. Col.), Lecturer.
 MARIO H. D. PRIZEK, B.A. (Brit. Col.), Lecturer.
 J. S. STONE, B.A. (Brit. Col.), Lecturer.

Special Lecturer:

W. W. WATSON, B.A. (Brit. Col.), Ph.D. (Toronto).

Department of Forestry

LOWELL BESLEY, B.S. (Cornell), M.F. (Yale), Professor and Head of the Department.
 F. MALCOLM KNAPP, B.S.F. (Syracuse), M.S.F. (Washington), Professor and Director of University Forests.
 GEORGE S. ALLEN, M.A.Sc. (Brit. Col.), Ph.D. (California), Professor.
 ABRAHAM G. GRIFFITH, M.A. (Brit. Col.), M.F. (Harvard), Ph.D. (Washington), Associate Professor.
 ROBERT W. WELLWOOD, B.A.Sc. (Brit. Col.), Ph.D. (Duke), Associate Professor.
 WILLIAM L. JOHNSON, B.Sc.F. (New Brunswick), Associate Professor.
 HARRY C. HAINES, B.Sc. (Purdue), M.F. (Duke), Assistant Professor.
 JOHN W. KER, B.A.Sc. (Brit. Col.), Assistant Professor. (On leave of absence).
 IAN H. SCHIEDEL, B.A.Sc. (Brit. Col.), Resident Forester, University Forest.
 JOHN H. G. SMITH, B.S.F. (Brit. Col.), Instructor.
 J. B. ALEXANDER, B.Sc., M.Sc. (New Brunswick), Part-time Lecturer.
 R. M. BROWN, B.Sc.F. (Toronto), Honorary Lecturer in Forest Products.
 L. B. DIXON, Part-time Lecturer.

Department of French

DAVID OWEN EVANS, M.A., D.Phil., D.Litt. (Oxon.), Docteur de l'Université de Paris, F.R.S.C., Professor and Head of the Department.
 MISS DOROTHY DALLAS, M.A. (Brit. Col.), Docteur de l'Université de Paris, Professor.
 GEOFFREY L. HALL, B.A. (Cantab.), Assistant Professor.

ROGER ROLLAND, B.A., L.Litt. (Montreal), Docteur de l'Université de Paris, Lecturer. (Session 1949-50).

MISS KATHERINE BREARLEY, M.A. (Brit. Col.), Lecturer. (Session 1949-50).

A. H. BURT, B.A. (Brit. Col.), Lecturer. (Session 1949-50).

A. F. WALSH, M.A. (Brit. Col.), Lecturer. (Session 1949-50).

MRS. SHIRLEY A. YIH, B.A. (Maine), M.A. (Middlebury), Lecturer. (Session 1949-50).

MRS. J. T. RUSH, B.A. (Brit. Col.), Part-time Lecturer. (Session 1949-50).

Department of Geology and Geography

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 and Head of the Department.

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., Professor.

KENNETH DEP. WATSON, B.A.Sc. (Brit. Col.), Ph.D. (Princeton), F.G.S.A., F.M.S.A., Professor.

J. LEWIS ROBINSON, B.A. (Western Ont.), M.A. (Syracuse), Ph.D. (Clark), Mem. A.A.G., Associate Professor.

WM. HARRISON WHITE, M.A.Sc. (Brit. Col.), Ph.D. (Toronto), Associate Professor.

R. M. THOMPSON, M.A.Sc. (Brit. Col.), Ph.D. (Toronto), Assistant Professor.

J. D. CHAPMAN, B.A. (Oxon.), Assistant Professor.

F. K. NORTH, M.A. (Oxon.), Assistant Professor.

J. ROSS MACKAY, B.A. (Clark), M.A. (Boston), Ph.D. (Montreal), Assistant Professor.

MRS. L. DOLAR-MANTUANI, Dipl.Ph., Ph.D. (Ljubljana), Research Fellow. (Session 1949-50).

R. E. DELAVault, D.U.P. (Paris), Research Fellow. (Session 1949-50).

Department of German

MISS JOYCE HALLAMORE, M.A. (Brit. Col.), Ph.D. (Munich), Professor and Chairman of the Department.

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

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

MRS. M. LOURIE, Dr. Juris (Vienna), A.M. (Stanford), Dip. in Soc. Wk. (Brit. Col.), Assistant Professor.

MRS. MARIAN L. COWIE, A.B. (U.C.L.A.), Ph.D. (Chicago), Lecturer.

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

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

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

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.), F.R.S.C., Professor and Director of International Studies.

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

GILBERT E. TUCKER, B.A. (Western Ont.), Ph.D. (Cantab.), Professor of Canadian History.

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

GEOFFREY DAVIES, M.A. (Cantab.), Assistant Professor.

PING-TI HO, B.A. (National Tsing Hua Univ., Peiping, China), Lecturer.

Department of Home Economics

MISS CHARLOTTE S. BLACK, B.Sc. (H.Ec.) (Manitoba), A.M. (Columbia), Professor and Head of the Department.

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

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

MISS CARLENE ROSE, B.Sc. (Minnesota), M.Sc. (Oregon State College), Associate Professor.

MISS ELIZABETH D. LITTLE, B.H.Sc. (Toronto), M.S. (Cornell), Assistant Professor.

MISS LARISSA I. DEMCHUK, B.Sc. (H.Ec.) (Manitoba), M.Sc. (Montreal), Assistant Professor.

MISS ORENE J. ROSS, B.Sc. (H.Ec.) (Alberta), Instructor.

MISS FRANCES KENNEDY, B.A., M.A. (Toronto), Lecturer.

MISS WINNIFRED J. MCEWEN, B.Sc. (H.Ec.) (Alta.), M.A. (Michigan State), Instructor.

MISS MARY FORBES, B.H.E. (Brit. Col.), Dietitian in charge Brock Hall.

MRS. VERA HEATHFIELD, B.Sc. (H.E.) (Manitoba), Dietitian in charge Fort Camp.

MISS YVONNE PEARSON, B.Sc. (H.Ec.) (Alta.), Dietitian in charge Acadia Camp.

Part-time Lecturers:

Stewart Murray, M.D., D.P.H.; R. E. Willits, M.D.

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.

JOHN W. NEILL, M.C., B.S.A. (Ont. Agric. Coll.), Assistant Professor.

Department of Mathematics

R. D. JAMES, M.A. (Brit. Col.), Ph.D. (Chicago), F.R.S.C., Professor and Head of the Department.

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

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

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

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

F. M. C. GOODSPEED, B.Sc. (Manitoba), M.A. (Toronto), Ph.D. (Cantab.), Associate Professor.

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

W. H. SIMONS, M.A. (Brit. Col.), Ph.D. (California), Assistant Professor.

- BENJAMIN N. MOYLS, M.A. (Brit. Col.), Ph.D. (Harvard), Assistant Professor.
E. LEIMANIS, Mag. Math. (Riga), Dr. Rer. Nat. (Hamburg), Assistant Professor.
STANLEY W. NASH, B.A. (Coll. of Puget Sound), M.A. (California), Assistant Professor.
T. E. HULL, M.A., Ph.D. (Toronto), Instructor.
ARTHUR BEAUMONT, B.A. (McMaster), Lecturer.
D. G. WERTHEIM, B.A. (McMaster), M.A., Ph.D. (Toronto), Lecturer.
KINGSLEY DOUTHWAITE, B.Sc. (Witwatersrand), Lecturer.
CHIA-SHIIN YIH, M.S., Ph.D. (Iowa), Lecturer.
G. W. SPARLING, B.A. (Brit. Col.), Lecturer.

Department of Mechanical and Electrical Engineering

- H. J. MACLEOD, O.B.E., B.Sc. (McGill), M.Sc. (Alberta), A.M., Ph.D. (Harvard), M.E.I.C., Mem.I.R.E., Fellow A.I.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. O. RICHMOND, B.A.Sc. (Brit. Col.), M.S. (Pittsburg), Mem.A.S.M.E., Professor of Mechanical Engineering.
H. M. MCILROY, M.Sc. (Queen's), Professor of Mechanical Engineering.
FRANK NOAKES, B.Sc. (Alberta), M.Sc., Ph.D. (Iowa State College), 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.
D. W. THOMSON, B.A.Sc. (Brit. Col.), M.S. (Illinois), Associate Professor of Mechanical Engineering.
WILLIAM WOLFE, B.A., B.A.Sc. (Brit. Col.), M.Sc. (Case School of Ap.Sc.), Associate Professor Mechanical Engineering.
LORNE R. KERSEY, B.A.Sc. (Brit. Col.), Assistant Professor of Electrical Engineering.
W. W. PULLINGER, B.A.Sc. (Brit. Col.), Assistant Professor of Electrical Engineering.
BRUCE D. CLEMENT, B.A.Sc. (Brit. Col.), Instructor.
WILLIAM J. JOHNSON, B.A.Sc. (Brit. Col.), Instructor.
EDWARD S. BARTON, B.A.Sc. (Brit. Col.), Instructor.
NORMAN C. BRUCE, B.A.Sc. (Brit. Col.), Instructor.
MRS. MARY SAVERY, B.A.Sc. (Brit. Col.), Instructor.
WM. E. J. STEEL, B.A.Sc. (Brit. Col.), Instructor.
GORDON ROPER, B.A.Sc. (Brit. Col.), Instructor.
H. W. D. ARMSTRONG, B.A.Sc. (Brit. Col.), Instructor.
JAMES P. DOYLE, B.A.Sc. (Brit. Col.), Instructor.
JOSEPH SANDEIN, B.A.Sc. (Brit. Col.), Instructor.

ARTHUR D. MOORE, B.Sc. (Queen's), Instructor.
 A. W. HENSCHER, B.A.Sc. (Brit. Col.), Instructor.
 J. K. REVILL, B.E. (Sask.), Instructor.
 PETER VAJDA, Grad. Polytechnic (Zurich), Instructor.
 J. C. TEBBY, B.Sc. (Alberta), Part-time Instructor.
 JOHN S. GRAY, B.A.Sc. (Brit. Col.), Part-time Instructor.
 NICHOLAS HUDAK, B.A.Sc. (Brit. Col.), Part-time Instructor.

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), M.C.I.M., Professor of Mining Engineering.
 HENRY M. HOWARD, B.A.Sc. (Toronto), M.C.I.M., Professor of Mineral Dressing.
 WILLIAM M. ARMSTRONG, B.A.Sc. (Toronto), M.C.I.M., Associate Professor of Metallurgy.
 C. S. SAMIS, M.Sc. (Manitoba), Ph.D. (London), M.C.I.M., Associate Professor of Metallurgy.
 F. A. HAMES, B.S. (Montana), M.Sc. (Queen's), Ph.D. (Missouri), Assistant Professor.

Department of Music

HARRY ADASKIN, Professor of Music.
 MRS. JEAN COULTHARD ADAMS, L.R.S.M., A.T.C.M., Lecturer.
 MISS BARBARA PENTLAND, Instructor.

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., F.R.S.C., Professor and Head of the Department.
 MISS H. EVELYN MALLORY, B.Sc. (Columbia), R.N., Associate Professor.
 LAWRENCE E. RANTA, M.D., D.P.H. (Toronto), Associate Professor.
 MISS RUTH MORRISON, B.S. (Minnesota), R.N., Assistant Professor.
 MISS PAULINE CAPELLE, B.A., B.A.Sc. (Brit. Col.), R.N., Assistant Professor.
 MISS LORNA M. HORWOOD, B.A. (Queen's), R.N., Assistant Professor.
 MISS ELIZABETH K. McCANN, B.A., B.A.Sc. (Brit. Col.), R.N., Instructor.
 MISS MARGARET W. DUNCAN, B.A., B.A.Sc. (Brit. Col.), M.S. (Chicago), R.N., Instructor.

Part-time Lecturers:

C. H. Gundry, M.D., Miss Josephine Kilburn, R.N., Gordon H. Hutton, M.D., D.P.H., D.Psych., Miss Donna Kerr, M.A., Donald H. Williams, B.Sc., M.Sc., M.D., J. R. McIntosh, B.A., M.Ed., Ph.D., F. C. Boyes, M.A., S. H. Zbarsky, M.A., Ph.D.

Department of Philosophy and Psychology

S. N. F. CHANT, O.B.E., M.A. (Toronto), Professor and Head of the Department.
 BARNETT SAVERY, A.B. (Washington), A.M., Ph.D. (Harvard), Professor and Chairman of the Department.

- J. RANTON McINTOSH, B.A., M.Ed. (Sask.), Ph.D. (Columbia), Professor of Education and Psychology.
- ALEXANDER P. MASLOW, A.B., A.M. (Michigan), Ph.D. (California), Associate Professor.
- E. S. W. BELYEA, M.A. (Toronto), Associate Professor.
- D. C. G. MACKAY, M.A. (Queen's), Ph.D. (Stanford), Associate Professor.
- EDRO SIGNORI, B.A. (Alta.), M.A., Ph.D. (Toronto), Associate Professor.
- B. POPE, B.Sc., B.Ed. (Man.), Ph.D. (California), Assistant Professor of Education and Psychology.
- EDMUND MACDONALD, B.A. (Queen's), Lecturer.
- W. G. BLACK, B.A. (Brit. Col.), M.A., Ph.D. (Chicago), Lecturer.
- J. W. A. FLEURY, M.A. (Brit. Col.), Lecturer.
- W. C. GIBSON, B.A. (Brit. Col.), M.Sc. (McGill), Ph.D. (Oxon.), M.D., C.M. (McGill), Lecturer.
- G. H. HUTTON, M.D., D.P.H. (Toronto), Lecturer.
- P. REMNANT, M.A. (Brit. Col.), Lecturer. (Session 1949-50).
- MISS F. M. SAGE, B.A. (Brit. Col.), Lecturer.

Department of Physical Education

- ROBERT F. OSBORNE, B.A., B.Ed. (Brit. Col.), Associate Professor and Director of Physical Education, Men.
- MISS MARIAN HENDERSON, B.A. (Toronto), A.M. (Texas State College for Women), Associate Professor and Director of Physical Education, Women.
- H. DOUGLAS WHITTLE, B.P.H.E. (Toronto), Assistant Professor.
- MISS MARJORIE LEEMING, B.A. (Brit. Col.), Assistant Professor.
- JACK POMFRET, B.A. (Health and P.E.) (Washington), Assistant Professor.
- A. B. LAITHWAITE, Dip. in Phys. Ed. (Carnegie Phys. Tr. Coll.), Assistant Professor.
- MISS JEAN CARMICHAEL, B.A. (Queen's), B.P.H.E. (Toronto), A.M. (Columbia), Instructor.
- MRS. ISABEL HOBSON, B.Sc. (Phys. Ed.) (McGill), Instructor.
- MRS. MAY BROWN, B.Sc. (Phys. Ed.) (McGill), Instructor.
- HJALMAR ANDERSEN, B.A. (Health and P.E.) (Washington), Instructor.
- RICHARD PENN, B.P.E. (Brit. Col.), Instructor.

Department of Physics

- GORDON MERRITT SHRUM, O.B.E., M.M., E.D., M.A., Ph.D. (Toronto), F.R.S.C., Professor and Head of the Department.
- A. M. CROOKER, B.A. (McMaster), M.A., Ph.D. (Toronto), Professor.
- KENNETH C. MANN, O.B.E., B.A. (Sask.), M.A., Ph.D. (Toronto), Professor.
- GEORGE MICHAEL VOLKOFF, M.B.E., M.A. (Brit. Col.), Ph.D. (California), D.Sc. (Brit. Col.), F.R.S.C., Professor.
- KENNETH R. MORE, M.A. (Brit. Col.), Ph.D. (California), Professor.
- J. B. WARREN, B.Sc., D.I.C., Ph.D. (London), F.Inst.P., Associate Professor.
- GEORGE L. PICKARD, M.B.E., M.A., D.Phil. (Oxon.), Associate Professor.
- W. OPECHOWSKI, Magister Filozoffi (Warsaw), Associate Professor.
- ARTHUR ROY CLARK, M.Sc. (Sask.), Ph.D. (Toronto), Associate Professor.
- A. J. DEKKER, M.A., Ph.D. (Amsterdam), Associate Professor.
- HEINZ KOPPE, Dipl. Ing. (Danzig), Dr. Rer. Nat. (Berlin), Assistant Professor.

- OTTO Blüh, Dr. Rer. Nat., D.Phys. (Prague), F.Inst.P., Assistant Professor.
 G. G. EICHHOLZ, B.Sc., Ph.D. (Leeds), Assistant Professor.
 FRIEDRICH A. KAEMPFER, Dipl. Ing., Dr. Rer. Nat. (Göttingen), Assistant Professor.
 F. K. BOWERS, B.A. (Cantab.), Lecturer.
 R. KEITH BROWN, M.A. (Brit. Col.), Lecturer.
 A. H. MORRISH, B.Sc. (Man.), M.A. (Toronto), Ph.D. (Chicago), Lecturer.
 B. I. H. SCOTT, B.Sc. (Tasmania), Lecturer.
 R. J. CLARK, B.A. (McGill), Ph.D. (Cantab.), Part-time Lecturer.
 F. C. FLACK, B.Sc. (Liverpool), Research Fellow. (Session 1949-50).

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.
 I. W. MOYNIHAN, D.V.M. (Ont. Vet. Coll.), M.Sc. (McGill), Special Lecturer.
 MRS. BERYL M. MARCH, B.A. (Brit. Col.), Instructor.

Department of Slavonic Studies

- JAMES O. ST-CLAIR-SOBELL, M.A. (Melbourne), Ph.D. (Graz), Professor and Head of the Department.
 WILLIAM J. ROSE, B.A. (Manitoba), M.A. (Oxon.), Ph.D. (Cracow), Visiting Professor.
 H. E. RONIMOIS, M.Sc. (Econ.) (Tartu), Ph.D. (London), Associate Professor.
 JAMES FERRELL, B.A. (Alabama), M.A. (Harvard), Ph.D. (Columbia), Assistant Professor.
 ALEXANDER W. WAINMAN, M.A. (Oxon.), Assistant Professor.
 TADEUSZ HALPERT-SCANDERBEG, Special Lecturer.
 JOZEF DOLAR-MANTUANI, Ph.Dpl. (Ljubljana), Part-time Lecturer in South Slavonic.
 VALENTIN IVANOVICH BARBASHOFF, (Moscow Tech. Inst.), Part-time Lecturer in Russian.

Department of Social Work

- MISS MARJORIE J. SMITH, A.B. (Minnesota), A.M. (Chicago), Professor and Head of the Department.
 LEONARD C. MARSH, B.Sc. (Econ.) (London), M.A., Ph.D. (McGill), Associate Professor.
 WILLIAM G. DIXON, B.A. (Brit. Col.), A.M. (Chicago), Associate Professor.
 MISS ELIZABETH V. THOMAS, A.B. (Wesleyan College), M.S. (New York School of Social Work), Associate Professor.
 MISS MARGARET C. JOHNSON, B.A. (Brit. Col.), M.S.W. (Washington University), Assistant Professor.
 MISS HELEN WOLFE, B.A. (Michigan), M.A. (University of Cincinnati), Assistant Professor.
 MRS. HELEN EXNER, B.A. (Vassar), M.S.S. (Smith), Lecturer.
 THEODORE LINCOLN EXNER, B.A. (Lewis & Clark), Instructor.
 MISS ZELLA COLLINS, Dip.Soc.Ser.Dept. (Toronto), Field Work Instructor.
 GEORGE A. WHITEN, Field Work Instructor.

Part-time Lecturers:-

C. E. Gould, B.A., M.D., G. H. Hutton, M.D., D.P.H., Elda Lindenfeld, M.D., Mrs. Mary Rupp, B.A. (Brit. Col.), M.S.W. (Washington), R. L. Whitman, M.D., E. Stevens, M.A.

Part-time Field Work Instructors:

MRS. AILSA BISHOP, B.A. (Brit. Col.), M.S. (Columbia).

MISS BARBARA FINLAYSON, B.A. (Toronto), Diploma in Social Work (Toronto).

MISS MARJORY MCBRIEN, B.A. (Colorado College).

MISS PHYLLIS PORTER, B.A. (Ohio Wesleyan), M.Sc. (Western Reserve.)

MRS. RUTH E. READ, B.A. (Vassar), M.A. (Chicago).

Department of Spanish

CHARLES VYNER BROOKE, B.A. (Queen's), A.M., Ph.D. (Harvard), Associate Professor and Chairman of the Department.

G. E. McSPADDEN, M.A. (Univ. of New Mexico), Ph.D. (Stanford), Associate Professor.

J. A. McDONALD, M.A. (Brit. Col.), Assistant Professor.

MRS. EMILIA DAVISON, Lecturer.

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), F.R.S.C., Professor.

W. S. HOAR, B.A. (New Brunswick), M.A. (Western Ontario), Ph.D. (Boston), Professor of Zoology and Fisheries.

KENNETH GRAHAM, B.A. (Brit. Col.), M.Sc. (McGill), Ph.D. (Toronto), Professor of Forest Entomology.

JAMES R. ADAMS, B.Sc., M.Sc., Ph.D. (McGill), Associate Professor.

W. M. CAMERON, M.A. (Brit. Col.), Honorary Associate Professor of Oceanography.

M. NEAL CARTER, M.A.Sc. (Brit. Col.), Ph.D. (McGill), Honorary Lecturer.

PETER A. LARKIN, B.A., M.A. (Sask.), D.Phil. (Oxon.), Assistant Professor.

PETER FORD, B.Sc., Ph.D. (London), F.Z.S., F.L.S., Assistant Professor.

JAMES HATTER, B.A. (Brit. Col.), Instructor.

International Studies

F. H. SOWARD, B.A. (Toronto), B.Litt. (Oxon.), F.R.S.C., Director.

GEOFFREY O. B. DAVIES, M.A. (Cantab.), Assistant Professor.

PING-TI HO, B.A. (National Tsing Hua Univ., Peiping, China), Lecturer.

Faculty of Law

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

MALCOLM M. MACINTYRE, B.A. (Mount Allison), LL.B., LL.M., S.J.D. (Harvard), Professor.

GEORGE A. McALLISTER, M.A., B.C.L. (New Brunswick), LL.M. (Columbia), Associate Professor.

GILBERT D. KENNEDY, M.A., LL.B. (Toronto), Associate Professor.
 JOHN R. WESTLAKE, B.A., LL.B. (Alberta), Assistant Professor.
 ALFRED W. R. CARROTHERS, B.A., LL.B. (Brit. Col.), Lecturer.
 JOHN I. BIRD, B.Com. (Brit. Col.), Lecturer on Shipping.
 D. MCK. BROWN, B.Com. (Brit. Col.), Lecturer on Insurance.
 THE HONOURABLE MR. JUSTICE COADY, B.A. (St. F.X.), Lecturer on Evidence.
 LEON J. LADNER, K.C., B.A., LL.B. (Toronto), Lecturer on Taxation.
 N. 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,
 Ottawa, Bristol), D.C.L. (Whitman), F.R.S.C., Lecturer on Public Inter-
 national Law.
 M. M. MCFARLANE, B.A. (Brit. Col.), Lecturer on Company Law.
 FREDERICK READ, LL.B. (Manitoba), Lecturer on Domestic Relations.
 S. J. REMNANT, Lecturer on Criminal Law.
 F. A. SHEPARD, B.A. (Toronto), LL.B. (Sask.), Lecturer on Equity.
 THE HONOURABLE MR. JUSTICE WILSON, Lecturer on Procedure II.
 A. WATTS, B.Com. (Brit. Col.), Honorary Liaison Secretary.

Faculty of Medicine

MYRON M. WEAVER, A.B. (Wheaton), M.S., Ph.D., M.D. (Chicago), Professor
 and Dean of the Faculty of Medicine.
 C. E. DOLMAN, M.R.C.S. (England), I.R.C.P., M.B., B.S., M.R.C.P., D.P.H.,
 Ph.D. (London), F.A.P.H.A., F.R.S.C., Professor.
 BLYTHE EAGLES, B.A. (Brit. Col.), Ph.D. (Toronto), Professor.
 SYDNEY M. FRIEDMAN, B.A., M.D., C.M., M.Sc., Ph.D. (McGill), Professor.
 H. ROCKE ROBERTSON, B.Sc., M.D., C.M. (McGill), F.R.C.S. (E), F.R.C.S. (C),
 Professor.
 EDGAR BLACK, M.B.E., B.A. (McMaster), M.A. (Brit. Col.), Ph.D. (Penn-
 sylvania), Associate Professor.
 LAWRENCE E. RANTA, M.D., D.P.H. (Toronto), Associate Professor.
 S. H. ZBARSKY, B.A. (Sask.), M.A., Ph.D. (Toronto), Associate Professor.
 Other appointments pending.

Faculty of Pharmacy

ESLI LONGWORTH WOODS, B.S.P. (Sask.), M.Sc. (Wisconsin), Professor and
 Dean of the Faculty.
 FINLAY A. MORRISON, M.B.E., B.S.P. (Sask.), Assistant Professor of Pharmacy.
 ROBERT H. COX, Phm.B. (Toronto), B.S.P., M.Sc. (Sask.), Assistant Professor
 of Pharmaceutical Chemistry.
 JOHN E. HALLIDAY, B.S.P. (Sask.), M.S. (Purdue), Assistant Professor of
 Materia Medica and Pharmacology.
 GORDON A. GROVES, B.Sc. (Pharm.), M.Sc. (Alta.), Assistant Professor of
 Pharmacy.
 MRS. LUCY A. CRAWFORD, B.S.P. (Sask.), Lecturer.

Department of University Extension

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

ROBERT J. BOROUGHS, M.A. (Brit. Col.), Assistant Director.

KELVIN D. M. LARGE, B.A., B.Com. (Brit. Col.), Assistant Director.

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

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

MISS MARJORIE V. SMITH, B.A. (Sask.), Supervisor, Study Groups.

Assistant Professor of Agriculture to be appointed.

ERNEST G. PERRAULT, B.A. (Brit. Col.), Assistant to the President and to the
Director of University Extension.

MISS EILEEN CROSS, B.Sc. in H.Ec. (Manitoba), Supervisor, Home Economics.

MISS JEAN TRAVIS, Supervisor, Handicrafts.

Instructor in Home Economics to be appointed.

CLIFFORD ROBINSON, C.P.E., Instructor, Art.

University Health Service

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

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

C. H. GUNDRY, M.D. (Toronto), Psychiatrist, Metropolitan Health Committee.

J. K. WHITTAL, M.D. (Western Ont.), D.P.H. (Toronto), Medical Health
Officer.

MISS MURIEL UPSHALL, B.A.Sc. (Brit. Col.), R.N., Nursing Supervisor.

MISS RUTH ROSS, B.A.Sc. (Brit. Col.), R.N. (Toronto), Public Health Nurse.

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

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

MISS MARY CLARKE, R.N., Public Health Nurse.

Counselling, Placement, Staff Personnel, Veterans' Services

MAJOR JOHN F. McLEAN, D.S.O., B.A. (Brit. Col.), Director of Student and
Personnel Services.

CAPT. W. G. BLACK, B.A. (Brit. Col.), M.A., Ph.D. (Chicago), Counsellor.

FL.-LT. H. ORVILLE HAYES, M.A. (Brit. Col.), Counsellor.

1950-51

GENERAL INFORMATION

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 in 1945 and 1948, again by acclamation, for the ensuing regular terms.

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 the 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.

In the period before the Second World War the following notable additions were made to the University buildings: the Gymnasium, in 1929; the Brock Memorial Building, in 1936; and the first section of the Grandstand for the Stadium, in 1937. During the war the University Armoury was built, the main section in 1941 and an extension to complete the structure in 1943.

Following the war a great many temporary buildings, chiefly converted army huts, were provided to accommodate the greatly increased enrolment caused by the return of veterans to the University.

A programme of construction of additional permanent buildings was authorized by the Provincial Government in 1945, and the Physics Building, the first unit to be completed, was formally opened by the Premier, the Honourable John Hart, on October 29th, 1947. The north wing of the Library was completed and formally opened by the Honourable E. C. Carson, Minister of Public Works, on October 27th, 1948. In 1948 an addition to the Power House was built, and the first section of a permanent Engineering Building brought to an advanced stage of construction. The new Home Economics Building was ready for use in September, 1949. It is expected that the Engineering Building and the main section of the Biological Sciences and Pharmacy Building will be completed in the Spring of 1950. Work has been begun on the Bacteriology and Preventive Medicine Building and on the Memorial Gymnasium, and contracts have been let for three units of residences for women.

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 with the University and whose names are added to the roll of Convocation by the Registrar of the University from time to time upon instruction 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."

Library

The Library collections number approximately 275,000 volumes, including representative works in all fields in which the University gives instruction and several noteworthy groups of materials. The collection is strong in serial publications, including scholarly periodicals and transactions of learned and scientific societies; and in certain fields, notably Canadiana and forestry, the Library has rich holdings. The Howay-Reid Collection, which is maintained in a separate room, comprises the combined libraries of the late Judge F. W. Howay and the late Dr. Robie L. Reid, both of whom had assembled fine collections of Canadian history, the Pound Collection of Canadian literature, and the A. J. T. Taylor Collection of material pertaining to the Arctic. Extensive acquisitions of publications on forestry have been made possible by the fund provided by Mr. H. R. MacMillan, and the Koerner Art Fund and the B. C. Packers Fund have enriched the collections in fine arts and fisheries, respectively.

The University Library is housed in a spacious building, the first part of which was occupied in 1925. The North Wing, which was completed in 1948, more than doubled the space which had been available for readers, books, and staff. A general reading room, a Fine Arts Room, and the Howay-Reid Collection are maintained in the older part of the building;

and a reserve book reading room, a periodicals reading room, seminar rooms, and the Ridington Reference Room are provided in the new. The last, named in honor of the late John Ridington, first Librarian of the University, contains a large number of encyclopedias, dictionaries, indexes, and other works for consultation which are available on open shelves for convenient use.

The Library is organized in five divisions, Acquisitions, Cataloguing, Periodicals, Circulation, and Reference, each of which is administered by experienced, professional librarians. The Library also administers the book collections of the Extension Department which number about 3,000 volumes and 6,000 plays. These materials are available to persons who register with the Extension Department.

While classes are in progress, the University Library is open regularly from 8:00 a.m. until 10:00 p.m., Mondays through Fridays, and from 8:00 a.m. until 5:00 p.m. on Saturdays. Between terms, and at certain other times, the Library usually is open from 9:00 a.m. until 5:00 p.m., Mondays through Fridays, and from 9:00 a.m. until 1:00 p.m. on Saturdays. Access to the book stacks, desks for study, and other facilities are furnished to graduate students whenever possible. A microfilm reading machine is available for use in the Library, and photographic copies of materials in the collections can be obtained for a fee through the Film Library in the Extension Department.

The collections and services of the Library are maintained primarily for the students and staff of the University, but these resources and facilities may be utilized by persons outside of the University who are engaged in studies which cannot be advantageously pursued in other libraries in the Province. Persons who wish to qualify as "extra-mural readers" must make application to the Librarian and are required to pay a fee of \$1.00 per calendar year. In addition, they pay any mailing charges which may be necessary and are required to place a deposit sufficient to cover losses incurred in this manner.

Museums

These consist of (1) the Burnett Collection of South Seas and other ethnological specimens, housed on the first floor of the Library; the Raley collection of Indian artifacts, collected by Dr. G. H. Raley and donated by Mr. H. R. MacMillan; the Buttimer collection of Indian baskets; the Michell Pierce collection of Eskimo clothing and utensils; and numerous other valuable collections and items; (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 Burnett Collection was made by the late Frank Burnett who donated it. It contains groups of artifacts representative of the ethnology and archaeology of various parts of the Pacific Basin. The largest unit, 1,170 catalogued items, is from the islands of the South Pacific, but Malaysia and North and South America are also strongly represented.

The Geological and Geographical Museum has been developed as a medium for the visual instruction of students and visitors. It is closely coordinated with the Department of Geology and Geography, but is used freely by students of sociology and history, as well as by art students from city studios. The exhibits include the Dr. H. M. Ami collection of pre-historical artifacts from Les Eyzies, France; the 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 distributed in hallways and rooms wherever space can be found. The collection of marine invertebrates of the north-eastern Pacific Ocean is one of the largest extant. The collection of vertebrates exclusive of fish numbers 4,399 specimens. 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 seats which will accommodate 1,400 persons. In this building are located the dressing rooms, locker rooms, showers, a training and first-aid room, an equipment room, an apparatus room, a kitchen, and the offices of the Department of Physical Education. Equipment for all recreational sports activities is available to the student body free of charge upon presentation of a Physical Education card.

War Memorial Gymnasium

A new gymnasium, costing in excess of \$700,000, is now under construction. This building, the result of a Student-Alumni campaign to honour the men and women of British Columbia who served in World War I and World War II, was financed by public subscription, a Provincial Government grant, and a special student levy.

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 four other full-sized fields and a number of smaller areas set aside for outdoor games. A new section of the playing field area is now being developed adjacent to the War Memorial Gymnasium.

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. In 1946 a wooden grandstand section providing 1,000 covered seats was added. 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, wrestling, and fencing. This special activities room

in the stadium was completed and equipped early in 1946. Funds for the construction of the grandstand were provided through a \$40,000 bond issue sponsored by the Alma Mater Society.

The Department of Physical Education also uses certain temporary accommodation. An army hut, located north of the Brock Memorial Building, was supplied in 1946 to relieve the congestion in the gymnasium. This hut is used primarily for dance classes and recreational activities. An airforce hangar brought to the campus in the fall of 1946 was reconstructed as an athletic Field House in January, 1948. This building is 160 feet long and 110 feet wide. It is used for archery, badminton, golf, tennis, as well as track and field and various team practices.

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, the Alumni Association, and various clubs and student activities. The building also contains common rooms, lunch and tea rooms, and accommodation for social groups.

The Brock Memorial Building was dedicated in January, 1940.

The Art Centre (Gallery and Workshop)

The University Art Centre is a recent development which, for a rapidly increasing number of students and staff, is serving as the focal point for campus activity in the visual arts. It was initiated, equipped and, in December, 1948, officially opened, through the generous gifts of the University Chapter of the I.O.D.E. and other donors, as a memorial to the late Dean Mary L. Bollert; and it continues to be substantially financed by the University Chapter, I.O.D.E. It is under the general supervision of the Fine Arts Committee.

The Art Centre includes a Workshop and an Art Gallery which, between them, perform as many as possible of the functions of a Fine Arts Department which, it is anticipated, will soon evolve from these beginnings. The Workshop is equipped for, and gives, courses in ceramics, painting, sculpture, weaving and other applied arts. These courses, which are open to students, staff and extra-mural registrants, are well attended. Since, however, there is, as yet, no Fine Arts Department, the courses cannot be offered for credit, and a special fee must be charged for registration in them. The Workshop is under the direct supervision of the Handicrafts Committee and the Visual Arts Committee.

The Art Gallery, though it has no permanent collection, maintains a continuous display of loan exhibitions, which are ordinarily shown two at a time, for periods of three weeks. These exhibitions are rented or borrowed from the National Art Gallery, the Museum of Modern Art, the Western Canada Art Circuit, the Western (American) Association of Museum Directors and other galleries and circuits; or they are displayed, on the invitation of the Gallery, by local (and other) artists, art organizations and institutions. Because it has these numerous sources of material, the Art Gallery is able to bring to the University a wide variety of exhibitions which are representative of the principal trends in art. Many of these exhibitions are accompanied by explanatory talks given by the painter of the pictures, or by the Director of the Gallery or some other member of the Faculty. The Gallery is open, under supervision, for five days of each week; and it is under the direction of the Visual Arts Committee.

Forest Products Laboratories

The Vancouver Laboratory of the Forest Products Laboratories of Canada is maintained by the Forest Service of the Department of Resources and Development, Canada. The Laboratory is housed in five buildings on the University Campus, of which three are provided and maintained through a cooperative 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.

The University Student Health Service

The University Student Health Service is under the direction of the Metropolitan Health Committee, which provides health services for the Greater Vancouver Area including the University Endowment Area.

The Health Service is at present housed in Hut A2 directly south of the Armoury.

Requirements of the University Student Health Service Medical Examinations

1. On admission to the University each new student must report to the Health Service office for a medical examination. The medical appointment is made at the time of registration.
2. Students registered in the Second year (ex-service excepted) must report for a re-check medical examination to determine their capacity for physical exercise. They are advised to make their appointment at the time of registration.
3. Students registering for the Physical Education degree course must have a yearly medical examination completed within the first two weeks of the session. They are advised to make their appointment at the time of registration.
4. In order to complete registration in the Faculty of Medicine, a physical examination performed at the University Health Service is required. This is ordinarily on record when pre-medical work has been completed at the University of British Columbia; however, the examination must have been performed within the six months preceding admission. Successful applicants from other institutions must pass this examination at the earliest practicable date in their first term of residence. Students not already immune are required, during the four years of their medical course, to be immunized against certain diseases.

Applicants having physical handicaps which require periodic medical attention, or which interfere with normal activities, must submit a medical certificate with their application. In this certificate, the examining physician should describe the extent of the deformity or lesion and estimate its effect upon the applicant's future ability to practice medicine.

5. Students who are members of athletic teams must have a yearly medical examination preceding active participation. The team manager will make the appointment and will check each student's physical capacity card before the first game.

6. 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.

The Medical Officer is available at specified hours for consultation with students on health problems.

Control of Communicable Diseases

Preventive tests and inoculations are given by the Health Service.

1. Tuberculosis.

A Chest X-ray examination is provided by the University Student Health Service, in cooperation with the Provincial Board of Health, Tuberculosis Division, and the B. C. Tuberculosis Society through its Christmas Seal fund. It is part of the medical examination and all other students are urged to have a yearly X-ray while the Unit is on the campus. There is no charge for this service.

2. Other Communicable Diseases.

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 Student Health Service without delay. Students exposed to 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 Student Health Service for such prescribed period. Failure to report will result in immediate exclusion from the University.

Reporting of Other Illnesses or Absence

Students *developing* any illness or suffering from any injury while on the campus should apply for first aid to the University Student Health Service.

Students *developing* any illness or suffering any injury while at home, boarding house, fraternity house, etc., are required to report this to the University Student Health Service.

Students absent on account of illness must notify the Health Service office by telephone and report 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 two days after the termination of the examination period. A medical certificate must show the nature and period of disability.* Medical report forms may be obtained from the Health Service office. The dean of the faculty is notified of absence from classes or examinations because of illness.

For further regulations refer to the form "Routine regarding Sickness and Injury" given to each student at the time of registration.

Summer Session

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

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

For the 1950-51 session, the University expects to have limited dormitory accommodation for women students, preference being given to First Year students or students attending their first session at the University of British Columbia. Rates to be charged are not yet determined but, in line with present University practice, will be based on the estimated cost of operation.

For the past few years, women veteran students have been housed at Acadia Camp near the University and accommodation of this type will be reserved for them for the 1950-51 session. Accommodation is in single or double rooms. The price for board and room, determined by cost of maintenance, was \$48 a month during the 1949-50 session. Rates have not yet been set for 1950-51.

Application forms for reservations in the University dormitories are available on request at the Dean of Women's office.

Information concerning accommodation for women students in private homes is also listed in the Dean of Women's office. A preliminary list, indicating vacancies made obvious at the close of term, is prepared in the spring. After that, it is not usually possible to bring out any further lists until the autumn when the information made available is sent out in the order in which requests have been received during the summer. Those expecting to need accommodation of this type should, therefore, make application to the Dean of Women's office in good time.

The office of the Dean of Women undertakes to inspect all accommodation offered for women students. Any residence accommodation arranged by women students for themselves must also meet with the approval of the Dean of Women. Men and women students are not permitted to lodge in the same house, unless they are members of the same family or receive special permission from the Senate. Women students under twenty-five years of age are permitted to occupy suites in apartment houses only when accompanied by some older person.

The cost of board and room varies from \$45 to \$55 a month, for room and breakfast \$25 to \$30. Other meals may be obtained at several places on the campus.

Men

Information concerning accommodation available for men may be obtained by applying to the office of the Housing Administrator, Physics Building. Charges for board and room vary from \$45 to \$55 a month, for room and breakfast from \$30 to \$35 a month, and for room alone from \$20 to \$25 a month. Meals may be obtained in the Cafeteria and in the Brock Memorial Building; light refreshments are available at different points on the campus.

Students wishing accommodation in either Acadia or the Fort Camp should apply to the Housing Administrator at the University. During 1949-50 the charge for room and board was \$48 per month. About 700 students can be accommodated. Preference will be given to returned service men.

Counselling and Placement Bureau

In conjunction with the University Veterans' Bureau, the Counselling and Placement Bureau gives information and suggestions to all students concerning admission, courses, and vocational opportunities. A file on professional and vocational opportunities is maintained and is available on request. Tests of general ability, interest and personality are administered on the following dates:

Saturday, June 10, 1950—1:30 p.m.

Friday, September 8, 1950—1:30 p.m.

On Friday, September 8, at 10:00 a.m., the Dean of Administrative and Inter-Faculty Affairs will describe the courses in the various faculties. All new students are invited to attend.

The Placement Bureau also endeavors, in cooperation with the various faculties concerned, to assist in securing part-time, vacation, and permanent employment for graduates and undergraduates. Close liaison with the executive and professional branch of the National Employment Service is maintained. Registration for part-time employment should be made early in September; registration for vacation or full time employment will normally take place in January or February at the bureau office situated in Hut M7.

Self Help Programme

Employment opportunities for a limited number of students are available for work on the campus in the library, bookstore, janitorial and maintenance departments, and the food services. In order that there may be as little interference with studies as possible, and in order to take care of the maximum number of applicants, jobs will be normally limited to ten hours per week. Applicants for bursaries may be offered employment of this kind either in place of a bursary or as a supplement to a bursary. Note section under Special Bursaries, page 72. In all cases applicants will be chosen on a basis of scholarship and need.

Enquiries should be addressed to Director of Student Services, University of British Columbia.

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 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.

Attention of veterans on grants is called to "University Student Veteran Loan Fund" (page 82).

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.

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 38, and for *Registration and Attendance*, see page 39.

Courses of Study

The University offers instruction in each of the seven faculties, Arts and Science, Applied Science (including Nursing), Agriculture, Law, Pharmacy, Medicine, and Graduate Studies.

The degrees offered are as follows:

FACULTY OF ARTS AND SCIENCE:

Bachelor of Arts,
Bachelor of Commerce,
Bachelor of Education,
Bachelor of Home Economics,
Bachelor of Physical Education,
Bachelor of Social Work,
Master of Social Work.

FACULTY OF APPLIED SCIENCE:

Bachelor of Applied Science,
Bachelor of Science in Forestry,
Bachelor of Architecture.

FACULTY OF AGRICULTURE:

Bachelor of Science in Agriculture.

FACULTY OF LAW:

Bachelor of Laws.

FACULTY OF PHARMACY:

Bachelor of Science in Pharmacy.

FACULTY OF MEDICINE:

Doctor of Medicine.

FACULTY OF GRADUATE STUDIES:

Master of Arts,
Master of Applied Science,
Master of Forestry,
Master of Science in Agriculture,
Doctor of Philosophy.

Admission as a graduate student does not in itself imply admission to candidacy for a higher degree.

In addition to the above, a course is offered in the Faculty of Arts and Science leading to a Teacher Training Diploma.

HONORARY DEGREES

The degrees of Doctor of Laws (*Honoris Causa*) and Doctor of Science (*Honoris Causa*) are the honorary degrees conferred from time to time by the Senate of the University upon persons who have achieved distinction in scholarship or public service.

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 colours for the various degrees are:

B.A.	University blue,
B.Com.	same with white cord,
B.Ed.	white with cord of University blue,
B.H.E.	turquoise,
B.P.E.	malachite green,
B.S.P.	dark green with cord of scarlet,
B.S.W.	magenta,
B.A.Sc.	scarlet,
B.S.F.	same with green cord,
B.Arch.	same with white cord,
B.S.A.	maize,
LL.B.	amethyst violet,
Ph.D.	blue and gold,
M.D.	to be chosen.

The Master's hood is the same as the Bachelor's, lined with the distinctive colour.

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 University reserves the right of selection and admission of students entering the First Year of the course in Medicine, the Second Year of the course in Pharmacy, the First Year of the combined course in Nursing 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 in 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 have full standing in University Entrance (Junior Matriculation) of the Province of British Columbia or to submit certificates showing that they have equivalent standing elsewhere. Special regulations are prescribed for admission to courses in Applied Science, Law, Medicine, Pharmacy, and Graduate Studies, and are given under the heading of *Admission* in the sections of the Calendar concerned.

3. Students with full University Entrance standing who have passed Senior Matriculation examinations are admitted to the First Year of Arts and Science or Agriculture with credits in each Senior Matriculation subject passed with a grade of 50% or over, insofar as the subjects passed meet the requirements of the First Year in the course proposed. For further information see page 96, under *Senior Matriculation Credits*.

4. A student who has any deficiency in University Entrance standing 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 certificate other than a Matriculation or University Entrance certificate issued in British Columbia should submit the original certificates to the Registrar. If he wishes these returned to him, he must present also a copy of each certificate for record at the University, or must pay the prescribed fee for making photostatic copies of the originals. He should in 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

A student applying for registration for the first time in the University of British Columbia must make use of the *Application for Admission* form obtainable from the Registrar's office. Those wishing to register for the Winter Session should file this application, together with the necessary certificates, before September 1st. Each applicant will then be given notification concerning his admission and standing and instructions as to registration procedure.

In order to facilitate registration, students who have qualified for admission to the next higher year of the course they are taking will be sent notices of eligibility for re-registration along with statements of their marks as soon as possible after the sessional examinations. Those who wish to enrol in a different faculty or course should notify the Registrar's

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

office of their intention on the form provided for this purpose. Those whose eligibility for re-registration depends upon the passing of supplemental examinations should not apply until all requirements have been met. Results of supplemental examinations are obtainable in person at the Registrar's office as soon as received from the markers, and are mailed to students only on special request.

The registration fee of \$5.00 is payable during registration at the same time as the First Term fees. It is not necessary to send the registration fee with application for either first or subsequent registration.

Attention is called to the days during which registration must be completed in person (see page 5).

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 \$10.00. 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.

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.

Application forms for the course in Medicine and information for applicants may be obtained from the office of the Dean of the Faculty of Medicine. Applications should be received in the office of the Dean of Medicine not later than January 1st preceding the anticipated date of admission.

1. Undergraduate students are classified as follows:

- (a) 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.
- (b) 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.
- (c) Occasional students—students not belonging to one of the two preceding classes. (See 7, below).

Graduate students 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.

2. All students are required to furnish the information necessary for the University record, 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 and 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."

All students are required to give full information of educational institutions previously attended and to provide evidence of the standing obtained.

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 Winter Session will be accepted after Friday, October 6th, 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 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. Occasional 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 department concerned that they are qualified to pursue with advantage the course of study which they propose to undertake.

8. Students are required to attend at least seven-eighths of the lectures in each course that they take. Admission to a lecture or laboratory and credit for attendance may be refused by the instructor for lateness, misconduct, inattention, or neglect of duty. Absence consequent on illness or domestic affliction may be excused only by the dean of the faculty concerned, and medical certificates or other evidence must be presented. *If the absence occurs during the session*, the student must appear in person, with the certificate, at the University Health Service immediately on return to the University, and before attendance upon class work. The University Health Service will examine the person concerned and will immediately forward the certificate, with report thereon, to the dean of the faculty. *If the absence occurs during the examinations, the certificate must be sent to the Health Service within two days after the termination of the examination period.* A medical certificate must show the nature and the period of the disability. Medical report forms may be obtained from the Health Service office. 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, the student may be permitted to sit for supplemental examination. (See regulation in each faculty in reference to *Examinations and Advancement*).

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

FEES

1. The University reserves the right to make changes without notice in its published schedule of fees.

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

3. In the Winter Session, students taking not less than 12 units are subject to the same fees as full-time students.

4. The schedules below for full-time and partial students give the total fees payable by all students in each Winter Session. These totals include the "sessional" fee and "incidental" fees. For students taking more than 6 units of work the incidental fees consist of a registration fee of \$5.00, a campus and building fee of \$5.00, a physical education and service fee of \$2.00, and an Alma Mater fee of \$16.00. A special caution and laboratory fee of \$15.00 is also included in the Faculty of Medicine. For students taking 6 units or less the incidental fees consist of a registration fee of \$3.00, a campus and building fee of \$5.00, a physical education and service fee of \$1.00, and an Alma Mater fee of \$9.00.
5. The Alma Mater fee, authorized by the Board of Governors, is exacted from all students in the Winter Session for the support of the Alma Mater Society. Inquiries with respect to this fee should be directed to the Alma Mater Society (Brock Memorial Building).
6. In the Winter Session, no refund will be made for First Term fees after October 31st, and for Second Term fees after January 31st. Application for a refund prior to these dates must be made to the Bursar within a two-week period after the student has discontinued his work.
7. The registration fee is not returnable.
8. Fees are not transferable from one session to another.
9. 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.
10. Holders of scholarships and bursaries, the first instalment of which is less than the First Term fees, must pay the difference before registration is complete.
11. Immediately after the last day for payment of fees, the registrations of all students whose fees have not been paid will be cancelled. These students will be excluded from classes and will not be permitted to register again 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.

Full-time Students

First Term Fees—payable on registration, September 18th-23rd.

Second Term Fees—Payable on or before January 10th.

Note: The First Term fees stated in the following schedules include the incidental fees (paragraph 4, above) and the first instalment of the sessional fee.

Faculty and Course:	1st Term	2nd Term	Total
1. Arts and Science—			
Arts and Science (B.A.)	\$118.00	\$ 90.00	\$208.00
Commerce (B.Com.)	118.00	90.00	208.00
Education (B.Ed.)	118.00	90.00	208.00
Home Economics (B.H.E.)	118.00	90.00	208.00
Physical Education (B.P.E.)	121.00	90.00	211.00
Social Work (B.S.W.)	143.00	115.00	258.00
*Social Work (M.S.W.)	118.00	90.00	208.00
Teacher Training	118.00	90.00	208.00

*See paragraphs (a) and (b) under Graduate Studies.

2. Applied Science—

Architecture (B.Arch.)	\$143.00	\$115.00	\$258.00
Engineering (B.A.Sc.)	143.00	115.00	258.00
Forestry (B.S.F.)	143.00	115.00	258.00
Nursing and Health (B.A.Sc. or Certificate)	118.00	90.00	208.00

(a) For Second, Third, and Fourth Year students in Nursing (i.e. students in the affiliated hospital) the total fees are \$5.00, payable on registration, which include a sessional fee of \$1.00 and an Alma Mater fee of \$4.00.

(b) Students admitted to a one-year course for graduate nurses and proceeding to the Certificate on the basis of part-time attendance over two or more years will register as partial students.

3. Agriculture—

Agriculture (B.S.A.)	\$118.00	\$ 90.00	\$208.00
Occupational	73.00	45.00	118.00

Students transferring credit from the Occupational to the Degree Course must pay the difference in fees.

4. Law (LL.B.)	\$143.00	\$115.00	\$258.00
5. Medicine (M.D.)	243.00	200.00	443.00
6. Pharmacy (B.S.P.)	143.00	115.00	258.00
7. Graduate Studies	118.00	90.00	208.00

(a) The maximum sessional fee (see paragraph 4 above) for a course leading to a Master's degree is \$180.00. Candidates who take more than one session to complete the course may pay the sessional fee at the rate of \$12.00 per unit for courses taken until this maximum has been reached.

(b) Graduate students required to make up prerequisites to the Master's course are subject to sessional fees at the rate of \$12.00 per unit for such prerequisite courses in addition to the full sessional fee of \$180.00 for the Master's degree and the annual incidental fees.

Graduate students who are not candidates for a higher degree are subject to sessional fees at the rate of \$12.00 per unit for courses taken, as well as to incidental fees.

(c) Candidates for the Ph.D. degree are subject to graduate fees for a full course, as set forth above, in respect to the first session in which they register as Ph.D. candidates. Students required to make up prerequisites to the Ph.D. course are subject to sessional fees at the rate of \$12.00 per unit for the courses concerned in addition to the graduate fees for a full course.

In subsequent sessions during candidacy, they are subject to an annual Registration fee of \$10.00 only, payable on registration.

Partial Students

1. For a course of 12 units or more:

The same as for Full-Time students.

2. For a course of from 7 to 11 units:

First Term—payable on registration, September 18th-23rd.	
Incidental fees	\$28.00
Sessional fee per unit	6.00
Second Term—payable on or before January 10th.	
Sessional fee per unit	\$ 6.00

3. For a course of 6 units or less:**First Term**—payable on registration, September 18th-23rd.

Incidental fees	\$18.00
Sessional fee per unit	6.00

Second Term—payable on or before January 10th.

Sessional fee per unit	\$ 6.00
------------------------------	---------

Extra-Sessional Courses**First Term**—payable on or before October 14th:

Registration fee	\$ 3.00
Sessional fee per unit	\$ 6.00

Second Term—payable on or before January 10th:

Sessional fee per unit	\$ 6.00
------------------------------	---------

Summer Session**Fees payable on registration:**

Registration	\$ 3.00
Minimum Class Fee	18.00
Per Unit	12.00
Summer Session Association	2.00

Correspondence Courses

Registration fee, payable on registration.....\$ 3.00

Correspondence fee at \$12.00 per unit, payable in three equal instalments as follows:

First Instalment: at time of registration;

Second Instalment: in advance of receiving ninth paper;

Third Instalment: in advance of receiving eighteenth paper.

Correspondence courses must be completed within two years of the initial registration.

Special Fees

For late registration, Winter Session	\$10.00
For late registration, Extra-Sessional or Summer Session	2.00
For late payment of fees	2.00
*Regular supplemental examination, per paper	5.00
*Supplemental examination at other centres, per paper	7.50
*Special examination (Applied Science and Agriculture), per paper	7.50
*Re-readings, per paper	5.00

*Supplemental examination fees in respect to Winter Session supplementals must be paid by August 1st, when application for examination is made. Special examination fees and fees for re-reading are payable with application.

Library (mailing deposit) \$ 2.00 |

Students borrowing books from the Library for preparatory reading will be required to make this deposit to cover mailing costs.

Laboratory coupons, per book \$ 3.00 |

Students taking certain laboratory courses are required to purchase these coupons at the Bursar's office. Deductions will be made from these books by instructors for laboratory purposes. The coupons may also be used to pay Library fines.

MEDALS, FELLOWSHIPS, SCHOLARSHIPS, PRIZES, BURSARIES, AND LOANS

GENERAL REGULATIONS

1. 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. Awards, when announced by the University, are final.

2. Medals, scholarships, fellowships, 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.

3. If the award of a medal, scholarship, fellowship, 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.

4. 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. Where credit has already been obtained in a required subject, however, another course may be substituted, with permission of Faculty.

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.

5. 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.

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

7. Scholarships, fellowships, and bursaries under the jurisdiction of the University are payable in two instalments, one at the beginning of each term. 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 a student 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. Except in the case of a Pharmacy student from Senior Matriculation who has enrolled for the required year of practical training, and for whom a scholarship will be held over for one year, postponement of University Entrance and Senior Matriculation Scholarships will be granted on medical grounds only. Application for reservation should be made to the Dean of Administrative and Inter-Faculty Affairs.

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

9. If invested funds do not provide the necessary revenue for any endowed scholarship, fellowship, prize or bursary, payment of the award will be reduced or withheld.

10. The University does not guarantee the payment of any prizes, bursaries, scholarships, or fellowships other than those from the funds of the University. With respect to prizes, bursaries, scholarships, or fellowships 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.

11. The Senate of the University of British Columbia reserves the right so to change the terms under which any exhibition, scholarship, fellowship, bursary, 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.

12. All inquiries regarding fellowships, scholarships, prizes, bursaries, and loans should be addressed to the Dean of Administrative and Inter-Faculty Affairs.

AWARDS FOR HEADS OF THE GRADUATING CLASSES

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 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 (B.A.Sc. Course), whose record, in the opinion of the Faculty, is the most outstanding.

The Kiwanis Club Gold Medal and Prize—A gold medal and a cash prize of \$50, 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 University Medal for Arts and Science—This medal will be awarded to a student in the graduating class for the B.A. degree. For the purposes of this award, students will be divided into two groups as follows: (A) those who have so chosen their majors or Honours courses that at least half of the required number of units for Third and Fourth Years are in Bacteriology, Biology, Botany, Chemistry, Geography, Geology, Mathematics, Physics, and Zoology; (B) all others. The University Medal will be awarded to the student obtaining highest standing in the group which does not include the winner of the Governor-General's Medal.

The Law Society Gold Medal and Prize—A gold medal, presented by the Law Society of British Columbia, will be awarded to the student obtaining the highest aggregate marks in the final year in the Faculty of Law. This award will be accompanied by a cash grant equivalent to the individual's Call and Admission Fee.

The Horner Gold Medal for Pharmacy—A gold medal to be known as the "Horner Gold Medal", given by Frank W. Horner Limited of Montreal,

will be awarded annually to the student standing at the head of the graduating class in Pharmacy.

The British Columbia Parent-Teachers' Association Prize—A prize of \$100, the gift of the British Columbia Parent-Teachers' Association, will be awarded to the student standing at the head of the graduating class for the B.H.E. degree.

The Canadian Association for Health, Physical Education, and Recreation Medal and Prize—A medal and prize, given by the B. C. Branch, Canadian Association for Health, Physical Education, and Recreation, will be awarded to the student standing at the head of the graduating class for the B.P.E. degree.

The University Nurses' Club Prize—This prize, the gift of the University Nurses' Club, will be awarded to the student standing at the head of the graduating class for the degree of B.A.Sc. in Nursing.

FELLOWSHIPS AND SCHOLARSHIPS FOR GRADUATES

Fellowships and scholarships for graduate study are awarded only on application. Applications, on forms available at the Registrar's office, must be received by the Dean of Administrative and Inter-Faculty Affairs not later than March 15th, except where another date is given in the description. Unless the description indicates otherwise, awards are tenable only at this University and in the Winter Session.

For other awards available for graduate study, students are referred to pages 53 and 84.

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

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 the late 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 status of the candidate. The spirit of the endowment is to aid those to whom financial help is necessary or of material assistance.

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 of the final examinations. Preference will be given in making awards to native-born British Columbians.

The John and Annie Southcott Memorial Scholarship—A scholarship of \$100, provided annually from the estate of the late 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 \$100 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 Vancouver B'nai B'rith Hillel Foundation Scholarships—Vancouver B'nai B'rith Hillel Foundation will award two scholarships of the value of \$125 each in the Session 1950-51. These awards replace the scholarships formerly given in the name of District Grand Lodge No. 4 B'nai B'rith. The terms of award are as follows: These scholarships will be awarded to outstanding graduates of 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.

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. Recipients must be qualified to undertake the research work in respect of scholarship, research ability, personality, and health. Applications must be received not later than December 10th.

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, is available in the session 1950-51. The terms of award are 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. Recipients must be qualified to undertake the research work in respect of scholarship, research ability, personality, and health. Applications must be received not later than December 10th.

The Powell River Company Limited Scholarship—For research in wood chemistry, or on a subject with application to the pulp and paper industry, 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 to undertake graduate and research work in respect of scholarship, research ability, personality, and health.

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 or a subject with application to the pulp and paper industry, in this or any other approved university.

The British Columbia Electric Railway Company Limited Graduate Scholarship in Engineering—The British Columbia Electric Railway Company Limited offers annually a scholarship of \$500 for graduate study and research related to Civil, Electrical, or Mechanical Engineering. An additional amount of \$100 is available for special equipment and supplies required in the research. This scholarship is open to graduates in Civil, Electrical, or Mechanical Engineering who are proceeding to further study at this University. The topic of research must be approved by the head of the department, in consultation with 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 to the University 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 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 office of the Dean of Administrative and Inter-Faculty Affairs. Applications must be received 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 Central 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 has 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, Fellowships—The Canadian Pulp and Paper Association, Western Branch, Vancouver, offers two fellowships of \$500 each, renewable annually, and tenable at any approved forest school, to students who are graduates of the University of British Columbia in Forestry, or in allied courses such as Forest Entomology or Forest Pathology. Winners of these awards must have high scholastic standing and ability to do research. During tenure of the fellowships they are expected to undertake graduate study and pursue investigation of some problem approved by the Department of Forestry of the University of British Columbia. In consideration of worthy cases, these fellowships may be supplemented at the discretion of the Executive Committee of the Canadian Pulp and Paper Association, Western Branch.

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 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 the year will be paid by the Shell Oil Company. Full details of the award should be obtained from the office of the Dean of Administrative and Inter-Faculty Affairs.

The Shanahan's Limited Scholarship—For research in the field of agricultural insecticides Shanahan's Limited offers a scholarship of \$500, open to graduate students in any faculty. The topic of research will be chosen after consultation with the department concerned 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, portion of a gift of \$500 from 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 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.

The Canadian Industries Limited Fellowship—A fellowship of \$750, the gift of Canadian Industries Limited, is available for students to undertake graduate study and research at the University in Agriculture, Chemistry, Chemical Engineering, Forestry, Forest Engineering, Metallurgy, or Mining. The recipient, who will be selected on the basis of scholarship and

research ability, will be expected to pursue investigation in one of the fields mentioned above. The topic of research will be chosen by the department concerned. Full details of the award are available at the office of the Dean of Administrative and Inter-Faculty Affairs.

The British Columbia Sugar Refining Company Limited Scholarships—Scholarships to the total of \$2500, the gift of the British Columbia Sugar Refining Company Limited, are available annually for students in Agriculture, Bacteriology, Botany and Biology, Chemistry, Fisheries, Home Economics, and Zoology. Awards are open to graduate students. Winners of these awards will be selected by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries from recommendations submitted by the departments concerned. Selection will be made on the basis of scholastic standing and promise of ability in research.

The British Columbia Telephone Company Scholarships—Scholarships to the total of \$2500, the gift of the British Columbia Telephone Company, are available for Honours graduates in Physics (including Mathematics and Physics) in the Faculty of Arts and Science, and for graduates in Electrical Engineering, Mechanical Engineering, and Engineering Physics in the Faculty of Applied Science. Awards will be made on the basis of scholastic standing and promise of ability in research to students undertaking an approved programme of graduate study and research at the University of British Columbia. Recipients of these scholarships are recommended to Senate by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries, after consultation with the heads of the departments concerned.

The Alan Boag Scholarship—A scholarship of \$250, the gift of the trustees of a fund established by the late Alan Boag, is available for a student who is taking his major work in Commerce, History, Economics, International Studies, Law, Political Science or Sociology and is proceeding to a further year of study at the University of British Columbia. This scholarship, which is open to graduates, or to undergraduates who have completed at least two years at the University, will be awarded for the best essay or report on some aspect of socialism. In making the award special consideration will be given for originality in analysis and treatment. The award will be made on the recommendation of the Heads of the Departments of Economics and History and the Director of International Studies. If no essay reaches the required standard, the award will be withheld. Students intending to compete for this scholarship must obtain the approval of their essay subject from the department concerned. Essays must be submitted not later than March 31st.

The St. John's College, Cambridge, Exchange Scholarship—In 1949, St. John's College, Cambridge, awarded a scholarship of £300 per annum for two years to a graduate of the University of British Columbia for study at St. John's College. In exchange the University of British Columbia awarded a two-year fellowship of \$1000 (plus tuition fees) to a graduate of St. John's for study at this University. Similar exchanges may again be arranged in the future.

The British Columbia Packers Limited Research Fellowship—A fellowship of \$1200, the gift of the British Columbia Packers Limited, is made available from time to time for research and investigation in fisheries. Under the terms of award the recipient is enabled to undertake advanced work at another institution and to make observations on fishery methods and procedures elsewhere.

The I. J. Klein Scholarship—A scholarship of \$100, presented by Mr. I. J. Klein on the occasion of the Twenty-Fifth Anniversary of the establishment of the B'nai B'rith Hillel Foundations at American and Canadian Universities, is offered annually for the best report or essay dealing with

some aspect of religious or racial tolerance and prejudice in communities. Term essays or reports, other than graduating essays or theses, are acceptable for the competition, which is open to students in the two final undergraduate years in Arts and Science, in all years of Law, Teacher Training, Social Work, and Graduate Studies. The award will be made to a student proceeding to further study in this or any approved university. If, in any year, no satisfactory essay is received the award will be withheld. Essays must be submitted to the Director of International Studies not later than March 15th.

The British Columbia Electric Railway Company Limited Graduate Scholarships—Scholarships to the total of \$1000, the gift of the British Columbia Electric Railway Company Limited, are available annually for graduates in Arts and Science, Commerce, Law, and Social Work who are proceeding to further work in any of these fields at this University. Recipients will be chosen by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries from recommendations submitted by departments or faculties concerned. Selection will be made on the basis of scholastic standing and ability in research. Recommendations must be submitted to the Dean of Administrative and Inter-Faculty Affairs not later than March 15th.

The Laura Holland Scholarship—The friends and associates of Laura Holland, desiring to recognize her distinguished service to British Columbia and Canada generally, in the field of Social Work, have through a special committee established a scholarship. This scholarship will be awarded annually to the student in Social Work whose record for the year is the most outstanding.

The Taylor Gem Scholarship—Through the generosity of Mr. J. M. Taylor, a scholarship of \$750, with an additional amount of \$250 for equipment and supplies, was made available in the Session 1949-50 for a graduate student to undertake research in the Department of Mining and Metallurgy. The object of the research was to study some of the fundamental factors affecting the treatment of cobalt ore by aqueous oxidation methods, with special reference to the Taylor Gem ore. The award was made in October, 1949, on the recommendation of the Head of the Department.

The Bene Scholarship—A scholarship of approximately \$150, the gift of Eva and John Bene, is available annually for students taking the Honours course or graduate studies in Psychology, and proceeding to further work in the field at this or any approved University. The award will be made on the recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries, in consultation with the Department, to a student who is in need of financial assistance and shows merit and promise in the field of Psychology.

The Gault Brothers Limited Graduate Scholarship in Commerce—This scholarship of \$700, established in 1949 by Gault Brothers Limited to commemorate its Fiftieth Year in British Columbia, will be awarded annually to a graduate in Commerce of any Canadian university, and will be available for a year's graduate study, in the field of business administration, at any approved institution. Selection of the winner will be made by the Scholarship Committee and the Department of Commerce of the University of British Columbia. Full details of the award may be obtained from the Dean of Administrative and Inter-Faculty Affairs.

The Vancouver Sun Service Award in Home Economics—An opportunity for twelve months experience with an allowance of \$100 a month, offered by The Vancouver Sun, is available annually for a student graduating in Home Economics from this University. The recipient will be given experience in the field of home-service at the Edith Adams' Cottage,

operated by The Vancouver Sun, in a programme approved by the Department of Home Economics. Selection of the recipient will be made by the Head of the Department. In making the choice consideration will be given to scholarship, personality, adaptability, and interest in extra-curricular activities.

UNIVERSITY ASSISTANTSHIPS AND FELLOWSHIPS

University assistantships and fellowships, involving part-time duties, are available in a number of departments for students taking graduate work. These include:

(1) **Graduate Assistantships**, which are open to students proceeding to studies beyond the level of a Bachelor's degree. The sessional value of a graduate assistantship ranges upward from \$400, depending upon the duties involved.

(2) **University Teaching Fellowships**, which are open to students who have spent at least one academic year in graduate study and who have outstanding scholastic records. Duties are mainly teaching or laboratory instruction. The minimum sessional value is \$700.

(3) **University Research Fellowships**, which are open to students who have obtained at least a Master's degree or have completed equivalent graduate study, have outstanding scholastic records, and have given evidence of ability in research. These fellowships will be available for students engaging in research approved by the department concerned. The minimum sessional value is \$700.

All inquiries regarding the above assistantships and fellowships should be addressed to the head of the department concerned. Awards of fellowships are subject to approval by Senate, through the Joint Faculty Committee on Prizes, Scholarships, and Bursaries.

SCHOLARSHIPS FOR UNDERGRADUATES

Unless noted otherwise in the description, undergraduate scholarships are tenable only in the regular Winter Session and at this University. Except in a few cases, where application forms must be submitted, these scholarships are awarded on the basis of standing.

1. In More Than One Faculty

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 ex-servicemen, their dependents, and the children of deceased ex-servicemen, proceeding to a higher year in any faculty. Applications, on forms available at the Registrar's office, must be received by the Dean of Administrative and Inter-Faculty Affairs not later than March 15th.

The T. E. and M. E. Ladner Memorial Scholarship—An annual scholarship of \$300, given by Mr. Leon J. Ladner, K.C., and family in memory of his parents, Thomas Ellis and Minnie E. Ladner, is available for a student whose home is in the Delta Municipality of the Lower Fraser Valley. To be eligible for this scholarship an applicant must have high scholastic standing. In making the award, however, consideration will be given to character and financial need. The scholarship is open to students who are eligible for entrance to and will attend the University or are in any year of any faculty. If, in any year, no applicant can meet the scholastic require-

ments of the University, the award may be withheld. In such case, two awards will be made in a subsequent year. Applications, on forms available at the Registrar's office, must be received by the Dean of Administrative and Inter-Faculty Affairs not later than August 15th.

The Players' Club Alumni Scholarship—A scholarship of \$50, the gift of the Players' Club Alumni of the University of British Columbia, is available annually for award to an active member of the Players' Club. The winner, who will be selected on the basis of outstanding work and interest in any phase of theatrical activity, must enrol in the current Summer School of the Theatre. In making the award, preference will be given to a member of the graduating class. The award will be made by Senate on the recommendation of the Honorary President of the Players' Club, the Director of its spring production, and the Executive of the Players' Club Alumni. Applications must be submitted to the Honorary President of the undergraduate club before April 15th. If no suitable applicant is found, the award will not be made.

The British Columbia Electric Railway Company Limited Proficiency Scholarships—Five scholarships of \$200 each, the gift of the British Columbia Electric Railway Company Limited, will be awarded annually to students of the University or Victoria College who are proceeding to further undergraduate work in any faculty of this University. These awards will be made, on the basis of proficiency, to students with outstanding records of scholastic achievement. Winners will be selected by the University Joint Faculty Committee on Prizes, Scholarships, and Bursaries, after consultation with departments and faculties.

The I. J. Klein Scholarship—As on page 51.

The Nancy Ryckman Scholarship—As on page 63.

The British Columbia Electric Railway Company Limited Special Scholarships—As on page 63.

2. In Arts and Science

(a) General

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 in any faculty.

University Scholarships in Arts and Science—Two scholarships of \$200 each will be awarded to the students taking the second and third places respectively in the examinations of the First Year and proceeding to a higher year in any faculty.

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 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 330 with promise of service in the Empire. Applications, on forms available at the Registrar's office, must be received by the Dean of Administrative and Inter-Faculty Affairs not later than the last day of the final examinations.

The Alan Boag Scholarship—As on page 51.

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.

(b) In a Course for the B.A. Degree

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 in a course leading to the degree of B.A., 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 100). 2. To the student standing highest with majors in group (2). (See page 100). 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.

University Scholarships for Trois-Pistoles—Two scholarships of \$185 each, given by the University of British Columbia, will be available annually to enable students to attend the French Summer School at Trois-Pistoles. The winners will be chosen by the Joint Faculty Committee in consultation with the Department of French.

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.

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 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, 203, 404, 420, 426, 430).

The John and Annie Southcott Memorial Scholarship—As on page 48.

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 Honours 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

*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.

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 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 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 Political Science 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 Daniel Buchanan Scholarship in Mathematics—In honour of Dean Daniel Buchanan, Head of the Department of Mathematics 1920-1948, and in recognition of his teaching and research in Mathematics, the members of the Department of Mathematics offer annually a scholarship of \$100 to the student who gains the highest standing in the Third Year of the Honours Course in Mathematics and proceeds to the Fourth Year in that course.

The Bene Scholarship—As on page 52.

(c) In Commerce

The Kiwanis Club Scholarship—A scholarship of \$150, the gift of the Kiwanis Club of Vancouver, will be awarded to the student obtaining highest standing in the Fourth Year of Commerce and proceeding to the final year of that course.

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 N. Leo Klein Memorial Scholarship—A scholarship of \$100, 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 and proceeding to the next year in that course.

The Edwin Waterhouse Scholarship—A scholarship of \$250, the gift of Price, Waterhouse & Co., 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, on forms available at the Registrar's office, must be submitted to the Dean of Administrative and Inter-Faculty Affairs not later than the last day of the final examinations.

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 361 and is proceeding to the Fourth Year.
2. The sum of \$125 will be awarded to the student in Fourth Year Commerce who obtains highest standing in Commerce 461 and is proceeding to the Fifth Year.

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

The Western Daily Newspaper Advertising Managers' Association Scholarship—A scholarship of \$200, the gift of the Western Daily Newspaper Advertising Managers' Association, is available annually for students in Third Year Commerce. The award will be made to the student who shows the greatest aptitude for work in advertising and is proceeding to the course in advertising in the Fourth Year. The award will be made on the basis of proficiency in the marketing course. To be eligible for this award the student must also obtain high standing in his other courses.

The Elmer Johnston Memorial Scholarship—A scholarship of \$150, donated by the Automotive Transport Association of British Columbia, will be awarded annually to the student in Commerce who obtains the highest standing in the course on Transportation Practices and Policies (Commerce 443) and is proceeding to the course in Motor Transportation Practices and Policies (Commerce 545).

The Winspear, Hamilton, Anderson and Company Scholarships—Scholarships of \$150 each, the gift of Winspear, Hamilton, Anderson and Company, are offered annually to students who have selected the accounting option in the course leading to the degree of B.Com., or who propose on graduation to study chartered accountancy. Two scholarships will be awarded, one to a student proceeding to the Fourth Year and the other to a student proceeding to the Fifth Year. The awards will be made to candidates of outstanding merit who are recommended by the Department of Commerce.

The Trans-Canada Investment Corporation Scholarship—A scholarship of \$150, the gift of the Trans-Canada Investment Corporation Limited, will be awarded to a student in Commerce who has a high academic standing and submits the best report of a research character in the course in Business Finance. To be eligible for consideration, a candidate must apply for entrance to the competition on or before November 1st of the academic year in which the award is to be made. The subject of the report must be chosen in consultation with the Department of Commerce. If, in the opinion of the Department, no report of sufficient merit is submitted, the award will be withheld. The winner of this scholarship must proceed to a further year's study in Commerce at this University.

The Gault Brothers Limited Scholarships in Commerce—Commemorating its Fiftieth Year in British Columbia, Gault Brothers Limited, in 1949, established a number of scholarships for students in Commerce. In accordance with the terms of the gift, six scholarships of \$300 each will be awarded annually, three to students entering the Fourth Year and three to those entering the Fifth Year. These awards will be made to students who have completed the previous year's work with high aggregate standing, have shown marked ability in at least one of the fields of marketing,

manufacturing and finance, and who intend, on graduation, to follow a career in this field. In the selection of winners, consideration will also be given to personal qualities and character. Fourth Year holders of the scholarships who maintain their standing to the satisfaction of the Department of Commerce, will be eligible for the scholarships in the Fifth Year. Selection will be made by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries, in consultation with the Department of Commerce.

(d) In Home Economics

The Vancouver Women's Canadian Club Scholarship in Home Economics—A scholarship of \$100, the proceeds of a fund created 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.

(e) In Physical Education

The Canadian Association for Health, Physical Education, and Recreation Scholarship—A scholarship of \$50, the gift of the British Columbia Branch of the Canadian Association for Health, Physical Education, and Recreation, will be awarded annually to a student completing the Physical Education course in the Second Year of Arts and Science, and proceeding to the Third Year of that course. The award will be made to the student whose achievement in the course is the most outstanding.

3. In Applied Science

(a) In a Course for the B.A.Sc. Degree

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.

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 Chapter No. 77 Scholarship—A scholarship of \$50, given by the Women's Chapter No. 77 of the B'nai B'rith, will be awarded to the student in the Third Year of 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 scholar-

*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.

ship of \$200 will be offered annually to the undergraduate student standing highest in the Metallurgical Engineering course in the Third Year in Applied Science and proceeding to the Fourth Year.

The British Columbia Electric Railway Company Limited Undergraduate Engineering Scholarships—Three 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 standing highest in the Civil Engineering course of the Third Year in Applied Science, and proceeding to the Fourth Year of that course;
- (2) 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 of that course;
- (3) 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 of that course.

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, portion of a gift of \$500 from 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. The awards will be announced in October.

The Boulton-Bosustow Memorial Scholarship (donated through the Vancouver Men's Canadian Club)—A scholarship of \$250, given by Mr. Austin C. Taylor in memory of his associates, William W. Boulton and Richard Bosustow, will be awarded annually to a student completing the Third Year in Mining or Metallurgical Engineering and proceeding to the Fourth Year in either of these fields. The winner of this scholarship will be chosen on the basis of ability and general proficiency in the courses in Mining and Metallurgy.

The Canadian Forest Industries Entomological Scholarships—To encourage undergraduates in the work of forest entomology, the forest industries of Canada, including the British Columbia Loggers' Association, the British Columbia Lumber Manufacturers' Association, the Pulp and Paper Association of Eastern Canada, and the Canadian Lumbermen's Association, have donated through the Forest Insects Control Board eight annual scholarships of \$200 each. Of these scholarships two are available for Forestry students registered in the Second or a higher year at the

University of British Columbia. Awards to students in British Columbia will be made on the recommendations of a committee consisting of two members appointed by the President of the University, the Provincial Representative on the Forest Insects Control Board, and a representative of the Dominion or Provincial Entomological Services. Applications, on forms available at the Registrar's office, must be submitted to the Dean of Administrative and Inter-Faculty Affairs not later than October 1st. In making awards, special desire and aptitude for research in forest entomology will be governing factors. Due weight will also be given to scholastic standing and physical fitness.

The Road Builders and Heavy Construction Association Scholarship—A scholarship of \$250, gift of the Road Builders and Heavy Construction Association, is available for a student completing the Third Year of Civil Engineering with high scholastic standing and proceeding to the Fourth Year of that course. Selection will be made on the basis of ability, interest, and academic record in subjects which are basic to highway engineering. In making the award, preference will be given to students who have practical experience in this field or who show interest in entering it on graduation.

(b) In Architecture

The Hobbs Glass Limited Scholarship—A scholarship to the value of one year's tuition fee will be awarded annually by Hobbs Glass Limited to a student in the Fourth Year of Architecture. The award will be made to the student submitting the best solution of an architectural problem proposed by the staff of the Department of Architecture in conjunction with the Company. The award will be made on the recommendation of the Department.

The McCarter and Nairne Scholarship—A scholarship to the value of one year's tuition fee, provided by a gift of \$2500 from McCarter and Nairne, Architects, will be awarded annually to the student in Third Year Architecture obtaining the highest standing.

(c) In Forestry (B.S.F. Course)

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 Third Year and is proceeding to the Fourth Year in the course leading to the degree of B.S.F.

The Canadian Forest Industries Entomological Scholarships—As on page 59.

(d) In Nursing

University Scholarship in Nursing and Health—A scholarship 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, on forms available at the Registrar's office, must be received by the Dean of Administrative and Inter-Faculty Affairs not later than December 1st.

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 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.

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 (1939) 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 Nabob Scholarship in Food Technology—A scholarship of \$300, given annually by the Kelly-Douglas Co. Ltd., Vancouver, will be awarded to a student completing the Fourth Year of the course in Food Technology with high standing, and proceeding to the Fifth Year. The recipient, who will be selected on the basis of scholarship, research ability, and personality, will be expected to pursue investigations in Food Technology. If no Fourth Year student meets the requirements, the award may be made to a student in the Third Year who is proceeding to the work of the Fourth Year. The recipient may be offered the opportunity of employment in one of the manufacturing divisions of the Company during the summer between the Fourth and Fifth Years. Applications, on forms available at the Registrar's office, must be received by the Dean of Administrative and Inter-Faculty Affairs not later than March 15th.

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, Agricultural Mechanics, Agronomy, Animal Husbandry, Dairying, Horticulture (including Plant Nutrition), and Poultry Husbandry.

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.

The Hon. R. L. Maitland Memorial Scholarship—A scholarship of \$150, initiated by the Vancouver Primrose Club on behalf of friends of the late Hon. R. L. Maitland, K.C., will be awarded to the student who attains the

highest standing in the Second Year of the Law course and is proceeding to the Third Year of that course.

The Alan Boag Scholarship—As on page 51.

6. In Pharmacy

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 B. C. Drugs Limited Scholarship (donated through the Vancouver Men's Canadian Club)—A scholarship of \$100, the gift of B. C. Drugs Limited, will be awarded annually to the student who obtains highest standing in the examinations of Second Year Pharmacy and is proceeding to the Third Year.

The Pharmaceutical Association of the Province of British Columbia Scholarship—A scholarship of \$100, the gift of the Pharmaceutical Association of the Province of British Columbia, will be awarded to a student entering Second Year Pharmacy. The award will be made to the student with the highest entrance qualifications, as determined by the written examination on the practical training of the First Year.

The Canadian Foundation for the Advancement of Pharmacy Scholarships—Scholarships of \$100 each, the gift of the Canadian Foundation for the Advancement of Pharmacy, are available for students in Pharmacy. The number of scholarships depends upon the registration. It is expected that one award will be made in September as an entrance scholarship and another will be made in May to a student completing the Second Year. Although the awards will be made primarily on merit, financial need will be considered.

7. 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 Dean of Administrative and Inter-Faculty Affairs not later than September 10th. Winners of these scholarships who obtain and maintain First Class standing in succeeding years of their undergraduate course will be eligible until graduation for extra grants of \$200 each year. The winning of this scholarship will not preclude the holder from enjoying the proceeds of another award.

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, Canadian Boxes Limited, Northern Pulpwood Limited, and Bad-

water Towing Company, 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". For an applicant to be eligible, his parent must have been an employee of one of the above companies on March 1st of the year in which the candidate writes the examinations. 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 office of the Dean of Administrative and Inter-Faculty Affairs. Applications should be forwarded to the Personnel Manager not later than June 1st.

The Nancy Ryckman Scholarship—Out of the proceeds of a fund bequeathed to the University by the late Nancy E. Ryckman, a scholarship of \$180 will be awarded annually to a student beginning or continuing a course of study at the University. This scholarship will be available only for students who have completed Senior Matriculation and who attended school in East Kootenay, British Columbia, for three years, of which two years must have been immediately prior to entrance to the University. It is the expressed wish of the donor that the scholarships be awarded to young men or women who require aid in obtaining a university education; and that, in making the award, consideration be given to character and intellectual promise. Applications, on forms available at the Registrar's office, must be received by the Dean of Administrative and Inter-Faculty Affairs not later than August 15th.

The British Columbia Electric Railway Company Limited Special Scholarships—Five scholarships of \$200 each, offered annually by the British Columbia Electric Railway Company Limited, are available annually for sons and daughters of employees of the Company who are beginning or continuing their undergraduate studies in any faculty at the University. Winners of scholarships, however, whose homes are in Victoria or its vicinity may, if they wish, attend Victoria College. These scholarships will be awarded on the recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries to applicants who have outstanding records of scholastic achievements and are deserving of financial assistance. Application by letter must be made to the Dean of Administrative and Inter-Faculty Affairs not later than August 15th. Letters of application should state particulars of family service with the Company and include certificates of standing in all subjects taken in University Entrance, Senior Matriculation, Victoria College, or the University.

The T. E. and M. E. Ladner Memorial Scholarship—As on page 53.

University Scholarships for University Entrance—Fifteen general proficiency scholarships will be awarded on the results of the University Entrance examinations:

- (a) \$175 to the candidate of highest standing in the Province;
- (b) \$175 to the candidate of next highest standing in the Province; and
- (c) \$175 to the candidate of next highest standing in each of the following districts:
 1. School Districts Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
 2. School Districts Nos. 11, 12, 13, 14, 15, 16, 17, and 77;
 3. School Districts Nos. 18, 19, 20, 21, 22, and 23;
 4. School Districts Nos. 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 75, and 76;
 5. School Districts Nos. 35, 36, 37, 38, and 42;

6. School District No. 39, Britannia, Grandview, John Oliver, and Technical High Schools, and any private schools in the area;

7. School District No. 39, Fairview, King Edward, King George, Kitsilano High Schools, St. Patrick's Private School, and any other private schools in the area;

8. School District No. 39, Lord Byng, Magee, Prince of Wales High Schools, University Hill High School, Crofton House, St. George's, Vancouver College, York House Private Schools, and any other private schools in the area;

9. School Districts Nos. 40 and 41;

10. School Districts Nos. 43, 44, 45, 46, 47, and 48;

11. School Districts Nos. 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, and 60;

12. School District No. 61;

13. School Districts Nos. 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, and 74.

These scholarships will be paid only to students in attendance at the University of British Columbia with the exception that University Entrance scholarships awarded in School Districts 61 to 66 inclusive may be paid to students in attendance at Victoria College.

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

Winners of these scholarships must notify the Dean of Administrative and Inter-Faculty Affairs before September 1st of their intention of attending the University (or Victoria College, in the case of a winner from School Districts 61 to 66 inclusive) during the following session; failing such notification, the winner's rights will lapse.

The Chris Spencer Foundation Scholarships for University Entrance—Fifteen scholarships of \$225 each, the gift of the Chris Spencer Foundation, will be awarded to the candidates selected by the University to receive the University Scholarships for University Entrance described above. Through this gift each of the winners will therefore receive a total scholarship of \$400. These supplementary scholarships are subject to the same conditions and regulations as those governing the University Scholarships for University Entrance.

The Chris Spencer Foundation Special Scholarships—Two scholarships, each of the value of \$400 a year and renewable annually for a maximum of five years (to a total of \$2000), are offered to students entering the University of British Columbia or Victoria College for the first time and proceeding to a degree at this University. These scholarships, the gift of the Chris Spencer Foundation, are available only for students whose ordinary private domicile, home, or residence is in the Province of British Columbia. Applicants will be considered, not only on the basis of scholastic ability, but also with respect to extra-curricular activities such as outdoor sports, debating, dramatics, music, etc., and on indication, during the period of high school, of moral force of character and of instincts to lead and take an interest in classmates. Students holding these scholarships in any year of their course will be permitted to retain it for the following year only provided they obtain an average of at least 80% in the final examinations for the year or rank in the upper 10% of their class (i.e., the year and faculty in which they are registered) in the work of the year. Selection of applicants will be made by a committee representing the Foundation and the University. Application forms, obtainable from the Registrar's office, must be received by the Dean of Administrative and Inter-Faculty Affairs, University of British Columbia, Vancouver, not later than May 31st.

Royal Institution Scholarships for Senior Matriculation—Six general proficiency scholarships will be awarded on the results 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 School Districts Nos. 39, 40, 41, 44, and 45; and
- (d) \$200 each to the three candidates of next highest standing in School Districts Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 42, 43, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, and 77.

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

Except in the case of a Pharmacy student enrolling for the required year of practical training, in which case a scholarship will be held over for one year, postponement of Senior Matriculation scholarships will be granted only on medical grounds.

Winners of Senior Matriculation scholarships must notify the Dean of Administrative and Inter-Faculty Affairs at the University before September 1st of their intention of attending the University during the following session; failing such notification, the winner's rights will lapse.

8. In Summer Session

The Summer Session Students' Association Scholarship—A scholarship of \$75, 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 correspondence courses and must be proceeding to a higher year in the University of British Columbia.

The Summer Session Students' Association Scholarship No. 2—The annual income from the Summer Session Students' Association Scholarship Fund, or the sum of \$75, whichever is less, will be paid annually as a scholarship for study at the University of British Columbia. The scholarship is open to any Summer Session student who has completed the first two years' work, the second of which has been taken wholly by Summer Session, extra-session classes, or correspondence courses, and who is proceeding to a higher year in the University of British Columbia by means of Summer Session. This award will be made to the student who completes in that session the Second Year of his University work with the second highest standing. Only those students who have taken a full course of six units in each Summer Session will be considered eligible for this scholarship. The work of the Second Year must be completed in a maximum of four summer sessions.

The British Columbia Teachers' Federation Scholarship—A scholarship of \$100, 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 or through extra-session classes or correspondence courses for which the final examinations were written

before or during 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 correspondence courses, and must continue in his Fourth Year at the University of British Columbia.

The British Columbia Teachers' Federation Special Scholarship—At the close of the Summer Session, 1949, a special scholarship of \$100 was awarded by the Federation to a member who had made an outstanding record in the work of the Third and Fourth Years.

MEDALS AND PRIZES

1. In More Than One Faculty

The Lefevre Gold Medal—As on page 47.

The University Essay Prize—A book prize of the value of \$25 will be awarded to a student in the final undergraduate year for the best essay presented in any of the courses regularly given by the Department of English.

The Chemical Institute of Canada Book Prizes—Two book prizes of the value of \$25 each, the gift of the Chemical Institute of Canada, are available for students entering the Fourth Year. Of these prizes, one will be awarded to the student obtaining highest standing in Chemistry in the Third Year of the Faculty of Arts and Science and the other to the student obtaining highest standing in the Third Year of Chemical Engineering.

The United Empire Loyalists' Association Medal—The Vancouver Branch of the United Empire Loyalists' Association of Canada is offering a silver medal, and a cash prize of \$35, for the best essay received during the session 1950-51 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 Hewitt Bostock Memorial Lecture Prize—A prize of \$25 will be awarded for the best essay on the lecture given under the terms of the Hewitt Bostock Lectureship. The award is open to students in any year and faculty.

Francis Willard Prize—As on page 66.

The Macmillan Company of Canada Prizes in Creative Writing—Two prizes of \$25 each, the gift of the Macmillan Company of Canada, Publishers will be awarded for the best original short story and the best original poem, respectively, written by an undergraduate or graduate student while enrolled in the University. The awards will be made on the recommendations of the Head of the English Department and the Instructor in English 401, in consultation with the Committee on Prizes and Scholarships. Entries must be submitted to the Department of English by April 1st.

2. In Arts and Science

(a) General

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 1950-51 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, 1951. If in any year no student reaches the required standard the award will be withheld.

(b) In a Course for the B.A. Degree

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 prize 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 Prize of the Minister of Switzerland—This book prize was awarded in the Session 1949-50 to an outstanding student of French Language and Literature.

The International Studies Prize—A book prize to the value of \$30, provided from the income of a trust fund established by an anonymous donor, will be awarded to the undergraduate obtaining first place in International Studies 400.

The Entomological Society of British Columbia Book Prize—A book prize, the gift of the Entomological Society of British Columbia, will be awarded to an undergraduate who distinguishes himself in entomology. The award will be made on the recommendation of the Department of Zoology.

(c) In Commerce

The Transportation and Customs Bureau of the Vancouver Board of Trade Prizes—Cash prizes to the total of \$300, the gift of the Transportation and Customs Bureau of the Vancouver Board of Trade were awarded in May, 1950, for the best major reports submitted by students enrolled in the Department of Commerce in the course on Transportation Practices and Policies (Commerce 443).

The B. C. Tree Fruits Limited Prizes—Three special prizes, an annual gift of B. C. Tree Fruits Limited, Kelowna, will again be awarded in May, 1950, to the three students obtaining the highest standing in Geography 201 during the session 1949-50. These awards, each of the value of \$100, will enable the recipients at the beginning of the fall term to visit centres in the Okanagan to survey the fruit industry.

(d) In Home Economics

The Home Economics Second Year Prize—A cash prize of \$50 will be awarded to the student obtaining highest standing in the work of the Second Year in Home Economics.

3. In Applied Science

(a) In a Course for the B.A.Sc. Degree

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 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 and his activities in the student engineering organization or in the local branch of a recognized engineering society.

The British Columbia Lumber Manufacturers' Association Prizes—Prizes of the value of \$100, \$50, and \$25, given by the British Columbia Lumber 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. Students intending to compete must notify the instructor of the course by January 15th.

The William N. Kelly Prize—A prize of \$15, offered by Mr. William N. Kelly, M.E.I.C., Consulting Engineer and Marine Surveyor, Vancouver, will be awarded to the student in the Third Year of the Faculty of Applied Science who obtains the highest standing in 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, together with three merit awards of \$15 each, given by the Timber Preservers Limited, will be awarded to the students enrolled in the course of Engineering Law (C.E. 476) of the Fourth Year of Civil Engineering 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 Ingledow Prizes—Two prizes of \$75 each, the gift of Mr. T. Ingledow, are available for undergraduates in Electrical Engineering. 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 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—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.

The Road Builders and Heavy Construction Association Graduation Prize—A prize of \$50, gift of the Road Builders and Heavy Construction Association, will be awarded to a student graduating in Civil Engineering. Provided for the purpose of stimulating interest in the field of highway engineering, this award will be made to the student obtaining highest standing in C.E. 470 (highway engineering).

(b) In Architecture

The Architectural Institute of British Columbia Prizes—Prizes to the total of \$200, given annually by the Architectural Institute of British Columbia, are available for leading students in the three senior years of Architecture. These prizes, which consist of books and an Award of Merit, will be awarded to the student in each year showing outstanding ability in architectural design and obtaining a high academic record. If, in any year, no student obtains a sufficiently high standing, the awards may be withheld.

The Trail Board of Trade Prize—A book prize of the value of \$25 is available for a student in the Fifth Year of Architecture. This award, which will be made over a period of three years starting in 1950, is provided by a donation of \$75 from the Trail Board of Trade. The award will be given for outstanding merit in the community planning project of the course in Architectural Design.

The Provincial Department of Agriculture Prizes for Farm Home Design—A first prize of \$150 and two second prizes of \$50 each, the gift of the Provincial Department of Agriculture, were made available in the Session 1948-49 for students in the architectural design course of Third Year Architecture. They were offered for the best solutions in the design of farm homes in three separate but typical regions of the Province. The first prize was awarded for the best design. The second prizes were given for the best design in each of the other two regions.

The Charles J. Thompson Prizes—Two prizes of \$50 each, made possible through a gift of \$1000 by Mr. Charles J. Thompson, are offered annually to students in Architecture. Of these prizes, one will be awarded to the Second Year student obtaining highest standing in the course in the History of Architecture. The other will be similarly awarded to a student in the Third Year. To be eligible for an award a student must obtain a minimum mark of 75% in the course and an aggregate in all the subjects of the year of not less than 70%.

The William Brand Young Prize—A book prize to the value of \$50, the gift of Mr. William Brand Young, will be awarded to the student in the Fifth Year of Architecture who produces the best solution to a design problem in community planning or civic design. The problem will be set by the Department in consultation with Mr. Young.

The Royal Architectural Institute of Canada Medal—This medal is available for a student in the graduating class for the degree of Bachelor of Architecture. The award will be made only to a student who has attained a high proficiency in the courses and shows those qualities of character and ability which promise outstanding achievement in the profession. The award will not necessarily be made every year.

(c) In Nursing

The Provincial Department of Health and Welfare (Health Branch) Prizes—The Department of Health and Welfare (Health Branch) of the Province of British Columbia offers the sum of \$100 to be given as prizes in the Public Health Nursing Course.

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 of Agriculture, who is proceeding to the Fourth Year.

5. In Law

The Carswell Company Limited Prizes—The Carswell Company Limited, Law Publishers, Toronto, offers 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.

The Toronto General Trusts Corporation Prize—Through the generosity of the Toronto General Trusts Corporation a prize of \$30, to be used in the purchase of law books, will be available for students in the Faculty of Law. This prize will be awarded to the student who, in the final examinations, obtains highest standing in the subjects of Trusts.

Special Book Prize—A book prize of the value of \$25, the gift of an anonymous donor, was awarded in May, 1950, to a student in the Second Year, who obtained high scholastic standing and was not the recipient of any other scholarship or prize.

The Canada Law Book Company Prize—A book prize, the gift of the Canada Law Book Company Limited, is available annually for students in the Second Year of the Law course. The award will be made to a student obtaining high marks in the subject of Conflict of Laws.

6. In Pharmacy

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.

The Pharmaceutical Association of the Province of British Columbia Prize—A cash prize of \$50, the gift of the Pharmaceutical Association of the Province of British Columbia, will be awarded annually to a student completing the Fourth Year. The award will be made on the recommendation of the Dean of the Faculty to the student whose record during the entire course, in both the practical and theoretical parts of the pharmaceutical subjects, is considered to be the most outstanding.

The Merck Awards—Through the generosity of Merck & Company, Limited, Montreal, two awards, each consisting of the Merck Index, the Merck Manual of Therapeutics and *Materia Medica*, and Reagent Chemicals and Standards by Joseph Rosin, are available annually for students in Pharmacy. The awards will be made to the two students obtaining the highest standing in Pharmaceutical Chemistry.

The Houghland Prize in Dispensing—Through the generosity of C. D. Houghland, Vancouver, a prize of \$100 is available annually for students in Pharmacy. The prize will be awarded to the graduating student with the best record throughout the course in the practical work of the pharmacy and dispensing laboratories.

The Mallinckrodt Chemical Works Limited Prize—A cash prize of \$25, the gift of the Mallinckrodt Chemical Works Limited of Canada, will be awarded annually to the student completing the final year of Pharmacy and obtaining the highest standing in Pharmaceutical Chemistry.

7. In Medicine

The Horner Gold Medal and Prize—A gold medal and a cash prize of \$100, given by Frank W. Horner Limited of Montreal, will be awarded annually to the Fourth Year student who has obtained the highest aggregate standing in the four-year course in the subject of Medicine. Until Fourth Year work is given at the University, the cash prize will be awarded under the same terms to a student in the most advanced year offered in the Faculty.

STUDENT ASSISTANCE

Students who require financial assistance to continue or begin their studies at the University of British Columbia are referred to the sections of this Calendar describing the Self-Help Programme (page 36), Bursaries (in the next section), Loan and Special Funds (page 81), and the Dominion-Provincial Youth Training Bursaries and the Provincial Loan Fund (the inside front cover of this Calendar). Attention of veterans on grants is directed to the University Student Veteran Loan Fund (page 82). Women students are advised to consult the Dean of Women.

BURSARIES

1. For the Winter Session

Applications for bursaries awarded by the University and tenable in the Winter Session must be received by the Dean of Administrative and Inter-Faculty Affairs not later than August 15th. Application forms are available at the Registrar's office.

Unless indicated otherwise in the Calendar description, bursaries are available only for undergraduates who are taking a full course at the University of British Columbia. To be eligible for a bursary, a student must normally show evidence of financial need and have at least Second Class standing in the examinations last written.

As a student applying for a Special Bursary (described below) will be considered as an applicant for any other bursary given by the University for which he is qualified, only one bursary application is required for the session. Separate application must be made, however, for assistance from the Dominion-Provincial Bursaries and Provincial Loan Fund. Application forms for this assistance, obtainable from the Department of Education, Technical Education Branch, Victoria, B. C., must be received by the Department of Education not later than August 15th.

Special Bursaries—For the session 1950-51 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 received by the Dean of Administrative and Inter-Faculty Affairs not later than August 15th.

Part-time employment on the campus may be available for a limited number of students with financial need and good academic standing. Applicants for bursaries who are interested in such employment should indicate in their applications any special qualifications or previous experience.

Dominion-Provincial Student Aid—For information refer to the inside front cover of this Calendar.

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. Applications 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 not later than August 15th. These bursaries are open to students from Victoria College proceeding to a course of study in the University.

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 1950-51, 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.

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 Vancouver Panhellenic Alumnae Bursary—A bursary of \$200, given by the Vancouver Panhellenic Alumnae Association, will be awarded to a woman student of satisfactory academic standing, who has completed at least the first two years of University work. The award will be made on the recommendation of the Dean of Women.

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 who has completed at least two years of her undergraduate studies and is proceeding to a higher year, or, if a graduate to the Teacher Training Course, or to the course leading to the Diploma or Degree in Social Work.

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 1950-51 to assist a woman undergraduate who has completed at least one year in Arts and Science with high standing in English, and who could not otherwise continue her course. The award will be made on the recommendation of the Dean of Women.

The Lady Laurier Club Bursary—A bursary of \$100, given by the Lady Laurier Club of Vancouver, will be awarded to a woman undergraduate who has completed at least two years of her undergraduate studies and is proceeding to a higher year. The award will be made on the basis of scholastic standing and financial need.

The Alliance Française 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.

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 woman student who has completed the first two years of University work and is proceeding to the next year of her course. The student to whom the award is made must have scholastic ability and real need of financial assistance.

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, and requiring financial assistance to enable him or them to continue studies at the University. In making the award, consideration will be given to the academic record of the applicant and to his participation in undergraduate affairs.

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.

The Panhellenic Association and the Inter-Fraternity Council Bursary Fund—The annual income from this fund, established in January, 1950, by the Panhellenic Association and the Inter-Fraternity Council, representing the sororities and fraternities on the campus, is used to provide a bursary for an undergraduate in need of financial assistance. The award is available for a student in any year and faculty. Selection of the student will be made by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries.

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 registered for the first time in the Faculty of Agriculture. In the awarding of this bursary, regulation 8 under General Regulations for Medals, Scholarships, Prizes, and Bursaries 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.
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.

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 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.

The W. Jack H. Dicks Bursary—A sum of \$200 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.

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 his major work in Anthropology. 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 sacrifices and services of Rotarians and their families in the First and Second World Wars, 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 First or Second World War, were in the Services or the Merchant Navy, or to their dependents. To be eligible for the awards, applicants are required to be of good moral character and to have a reasonable interest in extra-curricular activities and a good record of scholastic attainment. Awards will be made only to those who have limited financial ability to enter the University or proceed to a higher year.

The 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.

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.

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.

University Women's Club General Bursary—A bursary of \$100, given by the University Women's Club of Vancouver, will be available for a woman

student registered in any year and any faculty. To be eligible for this award a student must have high scholastic standing and need of financial assistance.

Bursaries for Proficiency (Special Awards)—Through the generosity of an anonymous donor, a bursary of \$1500 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. A second bursary of \$1000, provided by the same donor, was awarded similarly in September, 1947.

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 need.

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 1950-51. These bursaries will be awarded to students entering the Second Year in Arts and Science, Agriculture, or Pharmacy, 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.

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.

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 ability, character, and financial need.

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.

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.

The Lions' Ladies Club Bursary—This bursary of \$200, the gift of the Lions' Ladies Club of Vancouver, will be available for a student who is continuing with the work in the Second Year of the course in Social Work and needs financial assistance. Preference will be given to a student interested in the social problems of older citizens. The award will be made through the Joint Faculty Committee on Prizes, Scholarships, and Bursaries in consultation with the Department of Social Work.

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 awards will be

made to students with high scholastic standing and need of financial assistance.

The W. D. Shaffer Bursary—A bursary of \$200, the gift of Miss Marion A. Shaffer, will be awarded to a student entering the Teacher Training course. The award will be made on the basis of character and ability, and with special reference to potential qualities for teaching. To be eligible for this award an applicant must have need of financial assistance. Preference will be given to ex-service personnel. If there is no qualified applicant in the Teacher Training course the award will be available for a student in any year and any faculty.

The Robert S. Day and Son Limited Bursary (donated through the Vancouver Men's Canadian Club)—A bursary of \$150, the gift of Robert S. Day and Son Limited, will be available annually for a student who has completed the Third Year of Commerce with high standing, and is proceeding to the final year. The award will be made only to a student who has need of financial assistance.

The Vancouver Bar Association Bursaries—Three bursaries of \$100 each, the gift of the Vancouver Bar Association, will be awarded in the session 1950-51 to students in the Faculty of Law. One bursary will be available for a student entering each of the three years of the course in Law. Awards will be based on scholastic standing and financial need.

The North Shore Medical Society Bursary—This bursary of \$100, the gift of the North Shore Medical Society, is available for a student in the Faculty of Medicine who has good academic standing and needs financial assistance to proceed with his course. It will be awarded to a student whose permanent residence is and has been for some time in the City or District of North Vancouver.

The American Woman's Club Bursary for Social Work—A bursary of \$100, the gift of the American Woman's Club, is available for a woman student in Social Work who has completed one year of the course leading to the degree of B.S.W. The award will be made to a student who has good standing and is in need of financial assistance.

The Ellen Ethel McHattie Memorial Bursary—A bursary of \$300, given by Mr. C. T. McHattie in memory of his wife, Ellen Ethel McHattie, is available annually for a graduate registered in the Social Work course, or for an undergraduate in the Second, Third, or Fourth Year of Arts and Science planning to enter the Social Work course. To be eligible for this award, an applicant must have financial need and high scholastic standing.

The Allied Officers' Auxiliary Bursary—To commemorate the services and sacrifices of members of the armed forces and the merchant navies of the Allied Nations, the Allied Officers' Club Auxiliary has established a bursary of the annual value of \$75, open to students in any year and faculty. This bursary is available for a veteran of the Second World War. At a later date the bursaries will be made available for the sons and daughters of such veterans. The award will be made on the basis of scholastic standing and financial need.

The Allied Officers' Auxiliary Fund—From a fund of \$2500, the gift of the Allied Officers' Club Auxiliary, special bursaries will be provided from time to time for student veterans who are in need of financial assistance. Further information may be obtained from the Dean of Administrative and Inter-Faculty Affairs.

The Louis Toban Bursary—A bursary of \$100, the gift of Louis Toban, is available annually for a student entering the Third Year of the course in Pharmacy. The award will be made on the recommendation of the Dean of the Faculty to a student who has shown definite ability and has need of financial assistance.

The National Paper Box Limited Bursaries—Two bursaries of \$200 each, the gift of National Paper Box Limited, are available for the session 1950-51. One of these will be awarded to a student in Agriculture and the other to a student in Commerce. The awards will be made to students who have good academic records and are in need of financial assistance.

The Bastion Chapter Imperial Order Daughters of the Empire Bursary—The sum of \$200, given by the Bastion Chapter of the Imperial Order Daughters of the Empire, will be available in the session 1950-51 to provide bursaries for student veterans from Nanaimo. These bursaries, which are open to students in any year and faculty, will be awarded on the basis of ability and need of financial assistance.

The British Columbia Drug Travellers' Association Bursary—A bursary of \$200, given by the British Columbia Drug Travellers' Association, will be awarded to a student in Pharmacy who is recommended to a Committee of the Association by the University Joint Faculty Committee on Prizes, Scholarships and Bursaries in consultation with the Dean of the Faculty of Pharmacy. The award will be made on the basis of scholarship and need.

The Admiral Jellicoe Chapter, I. O. D. E., Bursaries—Two bursaries of \$50 each, the gift of the Admiral Jellicoe Chapter of the I. O. D. E., are available for veterans. These awards, one of which is open to women and the other to men, will be given to students who have attained high scholastic standing and have financial need.

The Triple Entente Chapter, I. O. D. E., Bursaries—Two bursaries of \$75 each, the gift of the Triple Entente Chapter of the I. O. D. E., are available for veterans. One award will be given to a student in the Faculty of Applied Science, and the other to a student in the Teacher Training course. To be eligible the students must have financial need and high scholastic standing.

The Worthington Memorial, I. O. D. E., Bursary—A bursary of \$100, the gift of the Worthington Memorial Chapter, I. O. D. E., is available for a proficient and promising veteran student needing financial assistance. The award is open to a student in any year and faculty.

The Sperry Phillips Memorial Bursary—A bursary of the annual value of \$100, endowed by friends and associates of the late Sperry S. Phillips (B.S.A., U. B. C. 1923), who prior to his untimely death by accident in 1945, contributed much to the development of Junior Farmer Activities in British Columbia, will be awarded to a student entering the Faculty of Agriculture or the Department of Home Economics for the first time. In making the award, consideration will be given to academic ability and Junior Farmer Club membership.

The Baynes Manning Limited Bursary—A bursary of \$300, the gift of Baynes Manning Limited, contractors and engineers, is available annually for undergraduate students in any year of engineering. This award will be made to a student who has a good academic record and who has need of financial assistance for continuing his studies.

The Alvin Cunningham Bursary—A bursary of \$200, the gift of Alvin Cunningham, is available annually for a student entering the Second or Third Year of the course in Pharmacy. The award will be made by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries, on the recommendation of the Dean of the Faculty, to a student who has shown definite ability and has need of financial assistance.

The Elsie Scobee Carpenter Memorial Bursary—A bursary of \$100, given by the Vancouver Quota Club in memory of Elsie Scobee Carpenter, a beloved charter member, is available annually for a woman student who has completed at least two years in Commerce and is proceeding to further

work in that course. Should no student in Commerce be able to qualify, the bursary will be available for a student whose major work is in Economics. The award will be made to a student who has high scholastic standing and is in need of financial assistance.

The Valcartier Camp Chapter, I. O. D. E., Bursary—A bursary of \$50, given by the Valcartier Camp Chapter, I. O. D. E., will be awarded annually to a woman student who has good academic standing and is in need of financial assistance. This bursary is available for a student proceeding to her first undergraduate degree.

The Sigma Epsilon Chapter of Zeta Psi Fraternity Bursary—A bursary of \$50, the gift of the Sigma Epsilon Chapter of Zeta Psi Fraternity, is available annually for a male undergraduate student in any year and faculty. The award will be made to a student of good scholastic standing who is in need of financial assistance.

The Epsilon Epsilon Chapter of Kappa Sigma Fraternity Bursary—A bursary of \$50, the gift of the Epsilon Epsilon Chapter of Kappa Sigma Fraternity, is available annually for a male undergraduate student in any year and faculty. The award will be made to a student of good scholastic standing who is in need of financial assistance.

The B. C. Chapter of Alpha Delta Phi Fraternity Bursary—A bursary of \$50, the gift of the B. C. Chapter of Alpha Delta Phi Fraternity, is available for a male undergraduate in any year and faculty who has good academic standing and needs financial assistance to continue at University.

The Delta Zeta Chapter of Alpha Gamma Delta Sorority Bursary—A bursary of \$50, the gift of the Delta Zeta Chapter of Alpha Gamma Delta Sorority, is available annually for a woman undergraduate student in any year and faculty. The award will be made to a student on the basis of scholastic standing and need of financial aid.

The British Columbia Chapter of Delta Upsilon Fraternity Bursary—A bursary of \$50, the gift of the British Columbia Chapter of Delta Upsilon Fraternity, is available annually for a male undergraduate student in any year and faculty. The award will be made to a student of good scholastic standing who is in need of financial assistance.

The Lighthall Memorial Bursary—A bursary of \$50, given by Sigma Phi Delta Fraternity in memory of Professor A. Lighthall, a member of the Department of Civil Engineering of this University from 1920 to 1945, will be available annually for a male undergraduate in any year of the Faculty of Applied Science. The award will be made to a student who has good scholastic standing and who, without financial assistance, would be unable to continue his course.

The Delta Gamma Chapter of Delta Phi Epsilon Sorority Bursary—A bursary of \$50, the gift of the Delta Gamma Chapter of Delta Phi Epsilon Sorority, is available annually for a woman undergraduate in any year and faculty. The award will be made to a student on the basis of scholastic standing and need of financial assistance.

The New Westminster Rotary Club Bursary—A bursary of \$250, the gift of the Rotary Club of New Westminster, is available for undergraduates whose homes are in the New Westminster district and who are taking a full course of study in any year and faculty at the University. To be eligible for consideration applicants must have high scholastic standing and need of financial assistance. Winners of this bursary will be selected by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries.

Kappa Kappa Gamma Alumnae Bursary—A bursary of \$100, provided by a trust fund created and maintained by annual contributions from the Alumnae of Kappa Kappa Gamma, is available annually for a woman

undergraduate in any year and faculty, who has good scholastic standing and need of financial assistance. The award will be made by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries, in consultation with the Dean of Women.

The Beta Theta Chapter of Alpha Phi Sorority Bursary—A bursary of \$50, the gift of the Beta Theta Chapter of Alpha Phi Sorority, is available annually for a woman undergraduate student in any year and faculty. The award will be made to a student on the basis of scholastic standing and need of financial assistance.

Pi Gamma Chapter of Phi Gamma Delta Fraternity Bursary—A bursary of \$50, the gift of the Pi Gamma Chapter of Phi Gamma Delta Fraternity, is available annually for a male undergraduate of good scholastic standing who is in need of financial assistance.

The Right Honourable Anthony Eden Chapter, I. O. D. E., Bursary—This bursary of \$50, the gift of the Right Honourable Anthony Eden Chapter, I. O. D. E., is available for a First Year student who has high standing and who, without financial assistance, would be unable to attend the University.

The British Columbia Psychological Association Bursary—A bursary of \$50, the gift of the British Columbia Psychological Association, is available for a student taking the Honours Course in Psychology. This award will be made to a student completing the Third Year of the course and proceeding to the Fourth Year. To be eligible, the applicant must have good scholastic standing and be in need of financial assistance.

The Xi Alpha Chapter of Beta Sigma Phi Sorority Bursary—A bursary of \$50, gift of the Xi Alpha Chapter of Beta Sigma Phi, an international sorority, is available annually for women students who are proceeding to the Second Year in the Faculty of Arts and Science, Agriculture, or Pharmacy, or the First Year in the Faculty of Applied Science. The award will be made to a student who has good scholastic standing and is in need of financial assistance. In choosing the recipient, consideration will be given to character and qualities of citizenship.

The Anne S. Campbell Bursaries—The annual income from a fund bequeathed by the late Anne S. Campbell will be used to provide bursaries for undergraduates who show qualities of leadership and who need financial assistance.

The International Student Service Bursary Fund—This fund, created in February, 1950, by a donation of \$400 from the International Student Service of Canada (University of British Columbia Branch), has been established to help needy students from foreign countries. The fund is administered by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries.

The Jonathan Rogers Awards—The annual income from a fund bequeathed by the late Jonathan Rogers will be used to provide scholarships for undergraduates who require financial assistance and who have high scholastic standing. Selection of the recipients will be made by the Joint Faculty Committee on Prizes, Scholarships, and Bursaries in accordance with the terms of the bequest.

2. For Summer Session

The Sir Charles Tupper Chapter, I. O. D. E., Bursary—A bursary of \$50, the gift of the Sir Charles Tupper Chapter, I. O. D. E., will be awarded annually to a teacher who has taught for two years in the Public Schools of British Columbia and is proceeding with Second Year work in the Summer Session. The award will be made to a student who intends

to return to teaching in the fall. Applicants will be considered on the basis of financial need and success and interest in teaching. Applications, on forms available at the Registrar's office, must be received by the Dean of Administrative and Inter-Faculty Affairs not later than May 31st. A copy of the last inspector's report must accompany the application.

University Summer Session Bursaries—Twenty bursaries of \$50 each are available in the Summer Session, 1950, for students who are taking a full course (6 units) of work in the Summer Session. They will be awarded to students who hold permanent teaching certificates in British Columbia and are actively engaged in teaching in the Province. Awards will be made on the basis of scholarship, financial need, interest in teaching, and participation in the activities of school and the community. Special consideration will be given to applicants from more remote parts of the Province. Applications, on forms available at the Registrar's office, must be received not later than May 31st.

3. For Study Elsewhere

The Euphemia Laurence McLeod Raphael Bursary—A bursary of \$100, gift of the McGill Women Graduates' Society of Vancouver, is available annually for a woman student at the University of British Columbia who, having completed at least two years of her course, is proceeding to McGill University for further work in any field. To be eligible for consideration, applicants must have a good academic standing, and need financial assistance. They may be graduates or undergraduates. The award will be made by the Joint Faculty Committee in consultation with the Dean of Women. Applications, on forms available at the Registrar's office, must be received by the Dean of Administrative and Inter-Faculty Affairs not later than June 15th.

LOAN AND SPECIAL FUNDS

Inquiries regarding the following loan funds should be addressed to the Dean of Administrative and Inter-Faculty Affairs, Room 10, Arts Building, except where the description indicates otherwise. Women students are advised to consult the Dean of Women.

(a) Winter Session Loan Funds

The Paul E. Murphy Student Aid Fund—From this fund, bequeathed by the late Paul E. Murphy of Ocean Park, loans may be obtained by undergraduates and graduates who have satisfactory standing and who are beginning or continuing their studies in the Winter Session at the University of British Columbia. Loans from this fund bear interest only after the recipient leaves the University, and are repayable in periodical instalments commencing one year after the date of leaving. Loans must be secured by a promissory note signed by the recipient and two guarantors. The recipient is also required to protect the loan by a policy of life insurance, in which the University shall be beneficiary to value, in an amount adequately covering advances made from the fund, until full repayment is made. Premiums for new or existing insurance may, however, be included as part of the loan. Attention is called to the following clause in the agreement between the University and the late Paul E. Murphy:

"The donor and the University share the hope that students who have had help from this fund will themselves help others, as their means may allow, either by contributing to this fund or by establishing similar funds."

Further details may be obtained from the Dean of Administrative and Inter-Faculty Affairs.

University General Loan Fund—The General Loan Fund was established by the Board of Governors. This fund, available for loans of limited amount, is open to undergraduates and graduates in need of pecuniary assistance. Loans, which must be repaid within one year, bear interest at the rate of 5 per cent per annum commencing on May 31st of the academic year in which they are granted. They must be secured by an approved promissory note signed by the applicant and his parent or guardian. Application should be made to the Dean of Administrative and Inter-Faculty Affairs.

University Student Veteran Loan Fund—This fund has been established by the Department of Veterans' Affairs, for the assistance of ex-service students under allowances who are in need of financial assistance. It applies only to students who have, subsequent to discharge, completed at least one year's academic work in a university. Loans are for limited amounts and are repayable on January 1st next following completion of training. The fund is administered by the University. Information may be obtained by enquiring at the Veterans' Bureau, Hut M7.

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. Application should first be made to the Dean of Administrative and Inter-Faculty Affairs. Terms are the same as for the University General Loan Fund.

The E. M. Kierstead Student Aid Fund—This fund, established in memory of Professor E. M. Kierstead, a beloved professor in Acadia and McMaster Universities, has been made available to provide loans for students requiring limited financial assistance in emergency situations. Fuller information may be obtained from the Dean of Administrative and Inter-Faculty Affairs.

The H. R. MacMillan Special Loan Fund—This fund has been established by Mr. H. R. MacMillan to provide assistance, in the form of loans, for the sons and daughters of employees of the H. R. MacMillan Export Company Limited, the British Columbia Packers Limited, or subsidiaries of these companies. Loans, which are available only for study at this University, are for limited amounts. They are repayable commencing one year after termination of studies at the University, until which time they do not bear interest. Further information may be obtained from the Dean of Administrative and Inter-Faculty Affairs.

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. Terms are the same as those for the University General Loan Fund. 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. Application for assistance must be made to the Dean of Administrative and Inter-Faculty Affairs.

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.

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.

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. Loans from this fund are subject to the same terms as those of the University General Loan Fund.

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 Dean of Administrative and Inter-Faculty Affairs.

The Special Spring Session Students' Loan Fund—A sum of over \$2000, donated by the students of the Special Spring Session conducted in May and June, 1946, for ex-service personnel and former members of the Merchant Navy, provides a fund for emergency loans. Applications must receive the approval of the President of the University and the Chairman and Secretary of the Scholarship Committee. Loans, which are made only to ex-service personnel and ex-members of the Merchant Navy, are repayable commencing one year after the applicant enters gainful employment, and will not bear interest until that time.

Home Economics Loan Fund—From a fund established from gifts of anonymous donors, loans are available for undergraduates registered in any year of the Home Economics course. Loans are also available for graduates in Home Economics taking further work at the University in a related field or in the Teacher Training course. Loans to any one student will not exceed \$200, and are repayable commencing one year after the applicant discontinues attendance at the University, until which time no interest will be charged. Applicants must be recommended by the Department of Home Economics. Application forms may be obtained at the office of the Dean of Administrative and Inter-Faculty Affairs.

(b) Special Funds for Women Students

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. During the session 1949-50 contributions were received from the following:

The Marion McElhanney Memorial—Maintained by the Alumnae of the University of Toronto by an annual contribution of \$50.

The Kappa Kappa Gamma Sorority—Who donated \$50 during the 1949-50 session.

The Kappa Kappa Gamma Mothers' Club—Who donated \$100 during the 1949-50 session.

The Kappa Kappa Gamma Alumnae—Who are making annual contributions of \$100.

The Alpha Phi Chapter of Delta Gamma Sorority—Who are making annual contributions of \$50.

The Mary L. Bollert Loan Fund—To honour the memory of the late Mary L. Bollert, first Dean of Women at the University of British Columbia, women graduates of the University and members of Miss Bollert's family have established a loan fund to assist women students. Those in need of an emergency loan should apply to the Dean of Women, on whose recommendation payment will be made. Loans are repayable in two years and will not bear interest until that time.

Judge Helen Gregory MacGill Memorial Student Aid Fund—A loan fund initiated by the Phi Delta Delta Legal Sorority has been established in memory of Judge Helen Gregory MacGill who from 1902 to 1947 worked ceaselessly for better laws and conditions for women and children in Canada. Loans from this fund, intended for use in emergency situations to assist women students in the final year of the Law course or the degree course in Social Work, are granted on the recommendation of the Joint Faculty Committee on Prizes, Scholarships, and Bursaries, in consultation with the Dean of Women to whom application should be made. Assistance to any one student is limited to \$100. Loans are repayable commencing one year from the end of the session and do not bear interest until that time.

(c) Summer Session Loan Funds

The Summer Session Students' Association Loan Fund—The Summer Session Students' Association of 1947 established a loan fund as a trust to be used for loans to teachers ("teachers" as defined by the Public Schools Act of British Columbia) who have attained satisfactory academic standing. Loans from this fund are to be repaid within two years from the date of receipt of the loan, and until the expiration of the two-year period no interest will be charged. Loans, which may be repaid at any time during the two-year period by assigned instalments, will be granted on the basis of scholarship and financial need, assistance to any one student being limited according to the funds available. Loans will be made on the recommendation of the Joint Faculty Committee and representatives of the Summer Session Students' Association.

AWARDS ANNOUNCED BY THE UNIVERSITY BUT MADE BY OTHER INSTITUTIONS

(a) Scholarships and Fellowships

The Rhodes Scholarships—The Rhodes Trustees offer annually for award in the Province of British Columbia one Rhodes Scholarship of the basic value of £400 a year but temporarily increased to £500. At most Colleges, and for most men, this increased 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.

The Scholarship is tenable ordinarily for two years at Oxford University. A third year (at Oxford or elsewhere abroad) may be authorized in proper cases.

A candidate must be an unmarried male British Subject domiciled and resident for five years in Canada. He must be in his second year at least of work in a Canadian university and may apply either in the province of his residence or of his university, if these differ. A candidate must have passed his 18th birthday but not have reached his 24th birthday by October 1st, 1950.

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. Financial need does not give a special claim to a Scholarship.

A candidate for a Scholarship is required to make application by November 1st, 1950, and, if elected, to go to Oxford in October, 1951. Further information and application forms may be had from the Registrar or Dean G. F. Curtis, Secretary of the B. C. Selection Committee, Faculty of Law, University of British Columbia, 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 Dean of Administrative and Inter-Faculty Affairs.

Royal Institution of Great Britain Science Research Scholarship—This scholarship, of £350 per annum and ordinarily tenable for a period of two years, is available for graduates who have given evidence of capacity for scientific investigation. The scholarship will be awarded in any branch of the physical sciences for which facilities are available in the Davy Faraday Research Laboratory of the Royal Institution, London, and the scholar will be required to devote himself to research in that branch. The scholarship will be tenable only in the Davy Faraday Research Laboratory. The conditions of tenure are similar to those of the 1851 Overseas Scholarships. Detailed information may be obtained from the Dean of Administrative and Inter-Faculty Affairs.

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 \$2000 each are offered annually, one in each province of the Dominion. The conditions under which they are awarded may be

obtained from the Dean of Administrative and Inter-Faculty Affairs. 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 \$1500, 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 \$1000, 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 Professional Scholarship of the Canadian Federation of University Women, of the value of \$1000, 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. Preference will be given to candidates who have completed one or more years of professional work and who desire to spend a year at an accredited Library School, College of Education, School of Social Work or similar professional school.

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, Professor Doris B. Saunders, Department of English, University of Manitoba, Winnipeg, Manitoba. Applications and recommendations must be received not later than February 1st.

The French Government Scholarship—Scholarships of the present value of approximately \$1000 are donated by the French Government for graduate study in France. They are tenable for one year and are renewable. Travelling expenses and university fees are defrayed by the French Government. The awards are made by the French Embassy on the recommendation of the Head of the Department of French in the University.

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., a fund known as the Viscount Bennett Trust Fund has been established. The annual income from the fund or the sum of \$1000, whichever is less, will be paid annually as a scholarship for post-graduate study at an institution of higher learning to be approved by a 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 at an approved law school. The award will be made by the committee at the time of the mid-winter meeting of the Council of the Association or prior thereto. The Faculty of Law of this University has been approved by the Committee. Full information as to qualifications of applicants may be had on application to the Dean of Administrative and Inter-Faculty Affairs. Applications must be in the hands of the Secretary-Treasurer of the Association by December 31st.

The Imperial Oil Graduate Research Fellowships—The Imperial Oil Limited, in 1946, established for annual competition four Graduate Research Fellowships. The potential value of these fellowships is \$3750 each (\$1250 a year payable in Canadian funds for a maximum of three years), open to

graduates of any approved university in Canada. These fellowships are offered for graduate study leading to a Doctor's or Master's degree in the fields of Chemistry and/or Engineering (2 fellowships), Geology (1 fellowship), and Economics or Industrial Relations (1 fellowship). Nomination of students for these fellowships is made by the University—such nominations to be received by the Imperial Oil Scholarship Committee, Imperial Oil Limited, 56 Church Street, Toronto, not later than June 1st of each year. Nomination forms and information as to the terms of fellowship are available at the office of the Dean of Administrative and Inter-Faculty Affairs.

National Research Council Bursaries, Studentships, and Fellowships—The National Research Council awards annually a number of Bursaries, Studentships, and Fellowships for graduate work. These are open to selected graduates in the sciences who have shown distinction in the undergraduate studies. The values of the awards are as follows: Bursary, \$450; Studentship, \$750; and Fellowship, \$900. Applications must be received in Ottawa before February 1st. Application forms and regulations governing the awards may be obtained from the office of the Dean of Administrative and Inter-Faculty Affairs, or by writing to the Secretary-Treasurer, National Research Council, Ottawa.

Rotary Foundation Fellowships—The Board of Directors of Rotary International and the Rotary Foundation Trustees have established a limited number of Rotary Foundation Fellowships for advanced study for one academic year. Candidates are expected to pursue study outside their own country. These fellowships are open to students between the ages of twenty and twenty-eight. Applicants must be graduates or in their graduating year. They are advised to make application early in October. Further information may be obtained from the office of the Dean of Administrative and Inter-Faculty Affairs.

The Agricultural Institute of Canada Scholarships—Scholarships, offered annually by the Agricultural Institute of Canada in co-operation with a number of industrial concerns, are available for graduates in Agriculture who wish to take advanced training in professional agriculture. One of these scholarships, of annual value \$800, is donated by the British Columbia Electric Railway Company. Selection of winners is made by the National Scholarship Committee of the Institute. Graduates interested in these awards may obtain application forms and further details from the office of the Dean of Agriculture, University of British Columbia.

The Pilkington Glass Limited Travelling Scholarship in Architecture—A travelling scholarship, for the purpose of post-graduate study in England, has been made available by Pilkington Glass Limited, for competition among architectural students in Canada. This scholarship will be given to a Fifth Year student from one of the schools in Canada having a five-year course and will be of an annual value of \$1500 plus travelling expenses, cabin class, to and from England. A second and a third prize of \$100 and \$50 respectively will also be awarded. The period of the scholarship is eight months, of which the holder is required to spend six months in Britain (of which two may be spent in an office) and two months in selected travel abroad or otherwise. A report on original research in the field of study on the scholarship will be required. Architectural students at the University of British Columbia are eligible to enter the competition. Further details may be obtained from the Head of the Department of Architecture or from Pilkington Glass Limited, 27 Mercer Street, Toronto, Ontario.

Hudson's Bay Scholarships—The Hudson's Bay Company has created a trust fund for the award of two scholarships for study in the United Kingdom. These have been established to provide advanced training for

business executives; to further research in those subjects in which the Company is interested, particularly distribution and trading, personnel administration and labour relations, and to strengthen the links between the business communities in Canada and the United Kingdom. Candidates must be Canadian citizens ordinarily resident in Canada, who at the time of application, should be over twenty-three and not have passed their thirtieth birthday. The scholarships are primarily for university graduates, although non-graduates are not excluded. Each scholarship will be of the value of £450, plus cost of transportation between Canada and the United Kingdom and return, for one year's study in the United Kingdom. Application forms and further information may be obtained from the Secretary, Hudson's Bay Scholarships, Hudson's Bay House, Winnipeg, Manitoba. Those interested should apply early in January.

Beaver Club Trust Scholarships—These scholarships, open to Canadian ex-servicemen and their sons, were awarded in 1949 and 1950. They are of annual value not exceeding £500 and are tenable at any university or college in Great Britain. The duration of each scholarship is at the discretion of the Selection Committee. In the choice of scholars, emphasis is on the humanities and social sciences, including such subjects as law, pedagogy, fine arts, and sociology. The purpose is educational and not for research. Candidates must be (1) Canadian citizens, (2) men who served at least one year in the Canadian Armed Forces during the period from September 1, 1939, to August 31, 1945, or the son of a man who so served. Although preference is given to candidates who are completing their undergraduate studies at a university or college in Canada, candidates who have completed at least two years of university or college work are eligible to apply. Information may be obtained from P. L. P. Macdonnell, Esq., Secretary, Beaver Club Trust, 10439, 136th Street, Edmonton, Alberta.

The R. C. E. Memorial Scholarships—Scholarships of \$125 each were offered in the Session 1949-50 to a number of universities in Canada, of which the University of British Columbia was one. These scholarships, established in memory of all ranks of the Corps of Royal Canadian Engineers who gave their lives in the Second World War, were awarded to selected students who had successfully completed their second to last year in a course leading to a degree in Applied Science or Architecture, who were in good standing in the Officers' Training Corps at the University, and had successfully completed at least one summer season's training with, or as a member of such a unit. Awards, made by the R. C. E. Memorial Scholarship Committee, Ottawa, were based on academic standing and qualities of leadership, as evidenced by participation in activities of the Officers' Training Corps and student affairs generally. Where two or more candidates from one university were considered equally meritorious, preference was given, firstly to a cadet who was the son of a member or a former member of the Corps of Royal Canadian Engineers, and secondly, to a candidate who is enrolled in the Royal Canadian Engineers Wing of his Officers' Training Corps.

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.

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 International Brotherhood of Pulp, Sulphite and Paper Mill Workers Scholarship—A scholarship of \$250, 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 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 B'nai B'rith Hillel Foundation Scholarship—On the occasion of the opening of the Hillel House at the University of British Columbia in November, 1947, Mr. Sam Hyman of Vancouver generously offered an annual scholarship which will be awarded to a student, affiliated with the Hillel Foundation, on the basis of scholarship, leadership and character. This scholarship, in the amount of \$50, will be offered by Mr. Hyman annually as long as he lives.

The Crystal Dairy Limited Scholarship—The Crystal Dairy Limited of Vancouver offers for annual competition a scholarship to the amount of the tuition fees for the Occupational Course in the Faculty of Agriculture at the University of British Columbia. This award will be made to a member of the Boys' and Girls' Clubs organized by the Provincial Department of Agriculture. To be eligible for consideration, an applicant must be at least seventeen years of age and must be a member of a regularly organized Dairy Club in the Lower Fraser Valley during the year in which the award is made. The award will be made on the basis of ability and proficiency in the club programme and the need of the student. Applications must be submitted to the Supervisor of Boys' and Girls' Clubs, 404 West Hastings Street, Vancouver, not later than July 15th. Selection of the winner will be made by a panel of judges consisting of the Manager of Crystal Dairy Limited, the Supervisor of Boys' and Girls' Clubs, and the two Assistant District Agriculturists in the Fraser Valley, acting under the chairmanship of the Chairman of the Joint Faculty Committee on Prizes, Scholarships and Bursaries of the University.

Leonard Foundation Scholarships—This National Foundation awards each year a number of scholarships for which students of the University of British Columbia are eligible. Application forms and further information may be secured from Professor F. H. Soward, a member of the General Committee of the Foundation. These forms should be forwarded to the Honorary Secretary of the Foundation, c/o Toronto General Trusts Corporation, 253 Bay Street, Toronto, not later than March 31 of each year. Whenever possible these applications should be filed in February. The awards are made at the Annual Meeting of the General Committee on the last Friday in May.

(b) Bursaries

The United Odd Fellows Bursaries—Six bursaries of \$200 each, provided by the Grand Lodge of B. C., I. O. O. F., the Grand Encampment, and the Rebekah Assembly, are available annually for students in any year of any faculty. Under terms approved by the Grand Bodies, one bursary will be offered in each of the following districts of the Province: (1) Vancouver Island and Powell River; (2) Greater Vancouver; (3) New Westminster and the Lower Fraser Valley; (4) the Kootenays; (5) North and South

Okanagan, including Princeton and Merritt; (6) Main Line of the C. P. R. east of Chilliwack, and Northern B. C. The awards will be made by a joint committee consisting of two representatives from each of the Grand Bodies. In general, applications will be considered first from members of the immediate families of Odd Fellows or Rebekahs, but failing suitable candidates from these sources, the Committee may award the bursaries to other worthy applicants. Special consideration will be given to applicants with financial need. Full details of the awards and application forms may be obtained from the Secretary of any Odd Fellows Lodge or Rebekah Lodge, or from the Grand Secretary of the Grand Lodge, I. O. O. F. Applications should be submitted to the Odd Fellows or Rebekah Lodge by May 31st or to the Grand Secretary, 144 Hastings Street West, Vancouver, not later than June 30th.

The I. O. D. E. Second War Memorial Bursaries—These bursaries were established as a memorial to Canadian men and women who gave their lives in the Second World War. They are open to sons and daughters of deceased or permanently disabled men and women of the services. Provided there are suitable candidates, one bursary will be awarded in each Province and one in the Yukon. Each bursary has the value of \$400 a year for four years, renewal each year being subject to satisfactory standing. Awards will be made to candidates who meet the entrance requirements of the university of their choice. To be eligible applicants must write the departmental examinations of their province. Application forms and further information may be obtained from Mrs. R. E. Walker, Educational Secretary, I. O. D. E., 6445 Churchill St., Vancouver.

The B'nai B'rith Hillel Foundation Service Bursary—Through the generosity of Mrs. I. J. Klein of Vancouver, a service bursary of one hundred dollars (\$100) is offered through the B'nai B'rith Hillel Foundation to a student who is chosen on the basis of ability, character and need. This student receives the bursary for service performed to the Hillel Foundation. The bursary was offered by Mrs. Klein in November, 1948, on the occasion of the 25th anniversary of the establishment of the B'nai B'rith Hillel Foundations in American and Canadian Colleges and Universities. The bursary will be granted for a period of five years.

The Vancouver Public Library Staff Association Bursary—A bursary of not less than \$150, given by the Vancouver Public Library Staff Association, is available annually for a student intending to adopt librarianship as a profession. To be eligible an applicant must have completed University Entrance and have worked on a library staff for one year or for the equivalent in part-time employment. The recipient will be selected on the basis of scholarship, personality, ability to work with others, aptitude for library work, physical fitness and financial need. Other things being equal an application from a student going to a library school will take precedence over that of a student planning undergraduate work. The successful applicant should be willing to return to British Columbia within a period of five years after graduation from library school if a suitable opening is available. Application forms and further information may be obtained from Mrs. Mary Telford, Vancouver Public Library, Vancouver, B. C.

The Eastern Star Bursary—This bursary, provided by the interest on a \$1000 Dominion of Canada Bond, is given annually by the Order of the Eastern Star to a student who is attending the University of British Columbia, in the Faculty of Arts and Science, and in whose immediate family there is a member of the Order. Names of eligible students are forwarded each year by the various chapters to the Secretary of the Grand Chapter of British Columbia. The award is made to that student who attains the highest average in regular subjects during the first three

years of attendance at the University. Further information may be obtained from the Grand Secretary, Mrs. Hazel Freeze, 4767 Collingwood Street, Vancouver, B. C.

The Canadian Scottish Chapter, I. O. D. E., Bursary—This bursary was awarded by the Chapter in February, 1950, to a graduate of the University of British Columbia, enabling him to continue with his course in Medicine at King's College, University of London.

(c) Prizes and Medals

French Government Medals—A Silver and Bronze medal will be awarded for distinguished work in French Literature, on the recommendation of the Head of the Department of French.

The French Government Book Prizes—Book prizes, offered by the French Embassy, will be awarded to students in the French language on the recommendation of the Head of the Department of French.

The Rosenberg Prize—An essay prize of \$100 has been donated by Mr. Sydney M. Rosenberg, through the Trustees of the Alumni-U.B.C. Development Fund. The subject deals with future government, and the competition is open to any Third Year student. Judges, appointed by the U.B.C. Alumni Association, will include Sir Andrew Jones, Head of the British Food Commission. For further details, consult the Alumni office in the Brock Memorial Building.

(d) Loan Funds

The Harry F. Bennett Educational Fund of the Engineering Institute of Canada—This fund was established by subscription from members of the Engineering Institute of Canada in memory of the late Harry F. Bennett, M.E.I.C., who for six years was Chairman of the Institute's Committee on the Training and Welfare of the Young Engineer. One purpose of the fund is to provide loans for deserving students who need financial assistance to enable them to study engineering sciences at university level, and who have successfully completed the First Year in Engineering. Loans will be made largely on the basis of character and qualities essential to leadership. Application blanks may be obtained from the office of the Dean of Administrative and Inter-Faculty Affairs.

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.

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.

The Canadian Club Lectureship—On the occasion of its fortieth anniversary in 1946, the Canadian Club of Vancouver made provision for a lectureship under the terms of which a series of two or three lectures will be given annually, preferably by a graduate or former faculty member of the University who has made a special contribution in any field of scholastic, scientific or public endeavor, on a subject of Canadian interest within the special field of the lecturer.

The H. R. MacMillan Lectureship in Forestry—Through the generosity of Mr. H. R. MacMillan, C.B.E., a fund of \$2500 was established to provide an annual lecture, for Forestry students, by an outstanding national figure in forestry or the forest industries.

THE
FACULTY
OF
ARTS AND SCIENCE

1950-1951

1950-51

THE 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 Physical Education (B.P.E.), Bachelor of Social Work (B.S.W.), and Master of Social Work (M.S.W.). For regulations concerning the degree of Master of Arts (M.A.) see *Faculty of Graduate Studies*.

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 as an Honours degree or as a General Course degree. A General Course degree will be granted on completion of courses amounting to a minimum of 60 units chosen in conformity with Calendar regulations; an Honours degree will, similarly conforming, require 66 units. For departmental regulations in regard to Honours Courses see pages 100-110.

For regulations governing courses leading to double degrees see *Double Courses*.

Course credits are described in terms of units. The unit values are given in the various course descriptions (page 127).

Registration and Admission

1. Registration must be completed during the period September 18-23, as described on page 5 and pages 39-41 inclusive.
2. After October 6th, except under very special circumstances and with the permission of Faculty, no student may alter the courses for which he has registered or enter classes for the first time.
3. All changes in registration must be made by the student at the Registrar's office. A student may not take courses for which he has not registered, and will be considered as having failed in all courses dropped without permission.

Summer Session and Other Credits

1. Although the degree of B.A. is normally granted on completion of the required units in the Winter Session, credits obtained in Summer Session may be combined with those obtained in Winter Session to complete the required number of units for the B.A. degree. The degree of B.A. will not be granted, however, in less than four years from University Entrance or three years from Senior Matriculation.
2. The maximum credit for Summer Session work in any one calendar year is 6 units.
3. The maximum credit for work other than that of the Winter and Summer Session is 3 units in each academic year, not exceeding a total of 15 units subsequent to Senior Matriculation or First Year.
4. No credit will be granted for work done at other universities in the same academic year in which work has been attempted in this University, whether in the Summer Session, the Winter Session or otherwise. Extra-mural work done at other universities prior to registration at this University may be accepted, if approved by Faculty, but may not exceed 3 units in respect of any one academic year or a maximum of 15 units subsequent to Senior Matriculation.

5. Students in attendance at the University of British Columbia may not register for extra-mural work to be taken concurrently.

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

Senior Matriculation Credits

Credit will be given in the *First Year only* for subjects passed in the Senior Matriculation Examinations, and only insofar as these subjects meet the requirements of the First Year. No credit will be given, however, for Senior Matriculation subjects which are passed subsequent to completion of the First Year, nor will subjects of the First Year completed prior to subjects of Senior Matriculation be transferred to a higher year.

Religious Knowledge Options

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

General Regulations

1. Students who are accepted from other institutions may not receive the B.A. degree unless they complete at least 15 units of the final year in attendance at the University of British Columbia.

2. Students who take more than 15 units in the First or Second Year may not receive credit in a higher year for these extra units unless they have previously completed at least 3 units of the year in which they are registered.

3. Subjects credited to one year may not be transferred later to a higher year.

4. Without the special permission of Faculty, no student may take less than 15 units in each Winter Session.

5. No student may take more than 18 units in each Winter Session.

6. Students may not receive university credit for courses passed in University Entrance whether taken among the required credits or as extra subjects.

7. Students may not continue with work in a higher year, unless they take concurrently all courses of the previous years (or permissible substitutes) for which they have not obtained credit. The total of all work taken may not exceed 18 units. They may not continue subjects, the prerequisites for which they have not successfully completed.

8. Students are responsible for ensuring that their courses have been chosen in conformity with Calendar regulations.

9. Attention is drawn to regulations concerning Examinations and Advancement, pages 125-126.

First and Second Years

In the First Year a minimum of 15 units is required*. In the Second Year of a General Course and of some Honours Courses, at least 15 units are required. In certain Honours Courses, however, 18 units must be taken.

Courses in each of the First and Second Years must be chosen to conform, not only with the rules and regulations in the preceding pages, but also with requirements A - F of the First Year and requirements G - M of the Second Year, as set forth in the following tables and notes.

*For credit that can be given for Senior Matriculation standing, see pages 38 and 96.

Requirement Designation	First Year	Units	Refer to Notes:
A	English 100 and 101.....	3	.....
B	Language (other than English).....	3	1, 2, 5
C	Mathematics 101.....	3	2, 6
	or Music 105.....		2, 6, 7
	or additional Language.....		1, 2, 6, 7
D	Elective.....	3	1, 2, 4, 6
E	Elective.....	3	1, 2, 4, 6
F	Compulsory Physical Education.....	.....	9

Requirement Designation	Second Year	Units	Refer to Notes:
G	English 200.....	3	.....
H	Language (other than English).....	3	1, 3, 5
I	Elective.....	3	1, 3, 4, 6
J	Elective.....	3	1, 3, 4, 6
K	Elective.....	3	1, 3, 4, 6
L	Special Honours Elective.....	3	1, 3, 6, 8
M	Compulsory Physical Education.....	.....	9

REFERENCE NOTES

1. Not more than one course numbered below 100, taken at the University or by Senior Matriculation, may be counted for credit in the units required for the B.A. degree.

2. All courses for First Year credit (requirements A - E inclusive) must be selected from the following list. For prerequisites and other details consult pages 127-185.

Biology 100	German 90, 100 or 101	Philosophy 100 or 205
Chemistry 100 or 101	Greek 90, 101	Physics 100 or 101 or 103
Economics 100, 140	History 101, 202	Polish 110
English 100 and 101	Latin 90, 101	Psychology 100
French 101	Mathematics 101	Russian 100
Geography 101	Music 105	Spanish 90, 101

3. All courses for Second Year credit (requirements G - L inclusive) must be selected from the list in Note 2 or from the following additional subjects. For prerequisites and other details consult pages 127-185.

Anthropology 200	Geology 200, 301, 302	Physics 200 or 203 or 220
†Architecture 150 and 160	German 200	Polish 210
Bacteriology 201	Greek 202, 314-15	Psychology 200, 201, 202
Biology 330	History 203, 304	Russian 200, 203
Chemistry 200, 205, 210	Latin 202	Slavonic Studies 205
†Commerce 251	Mathematics 200, 201, 202, 205	Sociology 200
†Economics 200	Music 205	Spanish 201
English 200, 205	Philosophy 202, 210	Zoology 200
French 202, 203		
Geography 201, 202		

†Architecture 150 and 160 and Commerce 251 are open only to students who have completed the First Year; Economics 200 is open only to those who are permitted to register in the Second Year.

4. Of the electives under D, E, I, J, K:

(i) at least one course must be a laboratory science chosen from Biology, Chemistry, Geography (except 201), Geology, or Physics. A student who takes at least 18 units of languages (other than English) in the combined First and Second Years may, however, defer this science course until his Third or Fourth Year;

(ii) at least one course must be chosen from Anthropology, Economics, Geography (201 only), History, Philosophy, Psychology, Slavonic Studies (205 only), or Sociology. A student who takes at least 12 units of laboratory science courses in the combined First and Second Years may defer this course until his Third or Fourth Year.

5. Courses under B and H must be chosen from French, German, Greek, Latin, Russian, and Spanish. Students must meet these requirements in accordance with one of the following plans:

(i) they may take a language course numbered 100 or 101 under B; and a course in the same language numbered 200, 201, 202, or 203 under H;

(ii) they may take a language course numbered 90 under B, a course in the same language numbered 100 or 101 under H, and, in the same language, a course numbered 200, 201, 202, or 203 as an *extra* subject in the Third or Fourth Year. *If this plan is chosen, 3 extra units will be required for the B.A. degree.*

(iii) if their courses include at least 12 units of laboratory science [see Note 4(i)] or at least 9 units of laboratory science and 6 units of Mathematics, they may take, under B and H respectively, any two of French 101, 202; German 90, 100 or 101, 200; Greek 90, 101, 202; Latin 90, 101, 202; Russian 100, 200 or 203; Spanish 90, 101, 201. Only one course numbered 90, however, may be selected.

Students whose courses in the combined First and Second Years include 18 units of laboratory science may defer the language of the Second Year to their Third or Fourth Year.

(iv) if they have taken French 101, German 100, or Latin 101 under Group I of the optional subjects of University Entrance, they may select French 202, German 200, or Latin 202 respectively under either B or H, and an elective in place of the other subject under B or H. If this language course is taken under B, a Third Year course in the language may be chosen for the elective under H.

6. Before making the choice under C, students should note:

(i) that Mathematics 101 is required for all courses in Architecture, Bacteriology, Biology (except 100), Botany (except 200), Chemistry, Commerce, Economics (except 100 and 140), Engineering, Forestry, Geography (except 101 and 201), Geology, Mathematics, Physics (except 103, 110, 203, for all of which Mathematics 91 of High School is prerequisite), Nursing, Pharmacy, Political Science, Pre-Medical and Pre-Dental courses, Sociology (except 200), and Zoology (except 200). It is also a prerequisite for majors or for Honours in all departments listed above and also for Honours in Philosophy, Psychology, and International Studies. Students will not be permitted to register for these courses unless they have previously taken Mathematics 101, except in the case of Chemistry 100 or 101 and Physics 100 or 101, with any of which it may be taken concurrently.

(ii) that although Mathematics 91 is the prerequisite for Mathematics 101, students who have completed only Mathematics V of University Entrance will be permitted to take the course. An additional three hours of instruction per week in this course will, however, be required of all students who have taken only Mathematics V. The work taken in these extra hours will be considered as laboratory, and regulation 3 under "Examinations", page 125 is applicable to it.

7. Students who do not select Mathematics 101 under C must take one of Music 105; French 101; German 90, 100 or 101; Greek 90, 101; Latin 90, 101; Polish 110; Russian 100; Spanish 90, 101.

8. The special elective under L, which must be chosen from the subjects listed in Notes 2 and 3, need be taken only by students who are proceeding to those Honours Courses which require 18 units in the Second Year. The individual departments should be consulted. See also pages 100-110.

9. The compulsory courses in Physical Education are described on pages 115-117 inclusive. No unit credit is given for these courses.

Special Requirements

(For Applied Science, Commerce, Law, Medicine, Pharmacy, Social Work, Teacher Training)

Students proposing to enter Social Work or Teacher Training after obtaining the B.A. degree should refer to pages 120 and 124 respectively, to ensure that they complete the necessary requirements. Students who are taking work in Arts and Science preparatory to entering Applied Science, Commerce, Law, Medicine, or Pharmacy, should refer to the sections in the Calendar in which the admission requirements are set forth. Students planning to apply for entrance to other medical schools should obtain the specific requirements from those schools. Because of the limited number of applicants who can be accepted at this or other medical schools, they are advised to consult the deans, heads of departments, and counselling services, with respect to alternative careers for those who do not gain admission.

Third and Fourth Years

The requirements for a B.A. in the General Course and in an Honours Course, single or combined, are described in the following sections.

Credit will not be given toward the B.A. degree for courses in Commerce (except 251 and 471), Home Economics, Physical Education, and Social Work (except 499). Credit for courses in other Faculties will not be granted unless they are listed among the courses offered in the Faculty of Arts and Science or the student has obtained special permission from the Committee on Admissions, Standing, and Courses.

Graduation standing in either a General or an Honours Course is determined on the results of all courses taken in the Third and Fourth Years combined.

General Course Curriculum

In the combined Third and Fourth Years a minimum of 30 units, of which at least 15 units should be taken in the Third Year, are required. Depending on the selection of major subjects, as described later, courses must be selected in conformity with the requirements listed in Plan A or Plan B of the following table and reference notes.

Requirements for Third and Fourth Years (combined)	Units for Plan A	Units for Plan B	Refer to Notes:
Courses in first major subject.....	9	9	1, 2, 3
Courses in second major subject.....	6	9	1, 2, 3
Courses not in major subjects.....	6	6	1, 4
General electives.....	9	6	1, 5

REFERENCE NOTES

1. Not more than 6 units in courses numbered less than 300 may be taken for credit in the combined Third and Fourth Years. For the purpose of this regula-

tion, however, the following are considered as the equivalent of courses numbered 300 or higher: Botany 200 and Zoology 200 (if both are taken); Geography 202; Geology 200; German 200; Greek 202; Latin 202; one of Mathematics 200, 202, 205 (if one of these has been taken in the Second Year); Philosophy 202, 205, 210; Psychology 200, 201, 202; Russian 203; Slavonic Studies 205; Sociology 200; Spanish 201; and also the subjects deferred in accordance with Notes 4 and 5, page 98.

2. The subjects leading to a General Course degree are divided into two groups:

Group (1): Bacteriology, Biology and Botany, Chemistry, Geography, Geology, Mathematics, Physics, Psychology, Zoology.

Group (2): Anthropology, Economics, Education (not more than 6 units, chosen from Education 509, 510-582 inclusive, and only for those who have completed their Normal Training), English, French, Geography, German, Greek, History, International Studies, Latin, Mathematics, Music, Philosophy, Political Science, Psychology, Slavonic Studies (including Polish and Russian), Sociology, Spanish.

Each student must select two different major subjects. Work in the First or Second Year is required in each of these major subjects except Anthropology, Education, International Studies, and Political Science. In certain cases, however, the required First or Second Year course may be taken in the Third Year (subject to the limitation in Note 1), but a course thus taken may not be counted among the required units for a major.

If both major subjects are in the same group, Plan A must be followed. If the two major subjects are in different groups, Plan B must be followed.

3. Students who intend to enter Teacher Training should consult Section 3, page 124.

4. In the combined Third and Fourth Years at least 6 units must be taken in some subject or subjects other than those chosen as majors.

5. The general electives may be courses, not already chosen, selected in the major subjects or otherwise.

Honours Curriculum

The B.A. in an Honours Course requires the completion of the First and Second Years in conformity with the regulations above and of a minimum of 51 units in the combined Second, Third, and Fourth Years, of which not less than 15 units should be taken in each year. The following regulations govern Honours Courses:

1. A student who proposes to take an Honours Course must obtain the consent of the departments concerned. This consent will normally be granted only to a student who has a clear academic record at the end of his Second Year with at least Second Class standing in the subject or subjects of specialization, and who has taken the courses and fulfilled the prerequisites outlined below. (Cards of application for admission to Honours Courses must be completed during the Registration period.)

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

3. A candidate for Honours may be required to present a graduating essay, which may count for not less than 3 and not more than 6 units. The latest date for receiving graduating essays in the Second Term is the last day of lectures; and the corresponding date for the Autumn Congregation is October 1st.

4. A candidate for Honours is required to take at the end of his 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.

5. Honours are of two grades, First Class and Second Class. A student who does not attain a sufficiently high ranking may be awarded a General Course degree.

6. It is hoped to offer the following Honours Courses during the session 1950-51. 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: Biology 100, Chemistry 100 or 101, and Mathematics 101. Biology 100 may be taken concurrently with Bacteriology 201 in the Second Year.

Course: In the Second Year, Bacteriology 201; in the Third and Fourth Years, Bacteriology 301 and at least 15 units selected in consultation with the Head of the Department.

Biology and Botany

Students may take Honours in any one of the options, namely Ecology, Genetics, General Physiology, Morphology, Pathology, Plant Physiology, Taxonomy. (To fulfil the requirements for a major, courses may be selected under these options.) The Department should be consulted.

Prerequisites: Biology 100, Chemistry 100 or 101, Mathematics 101.

Course: In the Second Year, Botany 200, Zoology 200, English 200, a language, Physics 100 or 101 (replaced in the Second Year by Biology 330 for Genetics and by Bacteriology 201 for Pathology options), Chemistry 200 (replaced by Geology 200 for Taxonomy option).

In the Third Year, Botany 330, Botany 310 or 340, Biology 330 (replaced by Physics 100 or 101 for Genetics option) and 11 additional units to be chosen in consultation with the Department.

In the Fourth Year, Botany 304, Chemistry 300 (except for Taxonomy option), a graduating essay, and 6 additional units to be chosen in consultation with the Department and in agreement with the option chosen.

Chemistry

Prerequisites: Chemistry 100 or 101, Mathematics 101, and Physics 100 or 101.

Course: In the Second Year, Chemistry 200, Mathematics 202, Physics 200, and 9 additional units to be chosen in consultation with the Department; in the Third Year, Chemistry 300, 304, 310, Mathematics 300, and 6 additional units; in the Fourth Year, Chemistry 407, 409, 410, 411, 412, 449, and 3 additional units.

Classics

Prerequisites: Greek 101, Latin 101.

Course: Greek 202 and Latin 202 in the Second Year; in the Third and Fourth Years, Greek 310, 410 and Latin 310, 410; any three of Greek 303, 305, 306, 407; any three of Latin 303, 304, 405, 406; and Greek 331, Latin 331.

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

Prerequisites: For admission to the Third Year of the Honours Course, Mathematics 101, a reading knowledge of French, German or Russian, and a First Class or a high Second Class in Economics 200.

Course: In the Third and Fourth Years, Economics 300, 301 (unless 400 has been taken), 335, 440, 441, 449 and two of 310, 320, 325, 330, 401, 405, 435 and Slavonic Studies 314.

If students enter the Third Year without having completed Economics 100, they will be required to take Economics 410 in addition to the courses prescribed for the Third and Fourth Years.

English Language and Literature

Candidates for Honours must secure the approval of the Department before beginning the Third Year.

Prerequisites are:

- a First or high Second Class mark in English 200.
- an elementary knowledge of Latin (e.g., University Entrance Latin or Latin 90).

Candidates will offer at least 51 units in the last three years, made up as follows:

	Units
—courses in the Second Year.....	15
—440: English Literature, 1100 to 1500.....	3
—442: English Literature and Language, 700 to 1100.....	2
—443: Language.....	3
—444: Bibliography.....	1
—445: Seminar.....	3
— Graduating Essay.....	3
—449: Courses which may be taken <i>either in or outside</i> the Department of English.....	15
— Courses which <i>must be taken outside</i> the Department of English.....	6
	51

Candidates will take the following final honours examinations (one of them oral) in the history of English literature:

- (1) before 1500; (2) 1500-1700; (3) 1700-1800; (4) 1800-1914.

Candidates who have not taken a course in English history will write an examination in that subject.

Candidates will present evidence, by the end of the Fourth Year, of a reading knowledge of French, German or Russian and of a knowledge of a second foreign language equal to at least two years of University work in that language.

French

Prerequisite: French 101.

Course: In the Second Year, French 202, in which a First or high Second Class standing must be obtained, and French 203; in the Third and Fourth Years, French 300, 301, 302, 400, 401, 402, graduating essay (6 units), English (3 units), History 314, 415 or Slavonic Studies 311.

Geography

Prerequisites: In the First and Second Years, Mathematics 101, Geography 101, and two years of Russian, French or German.

Course: Geography 201 is recommended in the Second Year for those in the Social Sciences. The Honours Course requires 15 units chosen from any Third and Fourth Year Geography courses, and also a graduating essay to count 3 units. Because of the breadth of field encompassed by geography, some courses in Agriculture, Anthropology, Economics, Geology, History, Sociology and Slavonic Studies are also recommended by the Department.

Honours students in the Third and Fourth Years are required to attend and participate in the Geography Seminar. An Honours paper will be set at the end of the Fourth Year on the work of the Seminar and the courses studied in the Third and Fourth Years.

Geology

Prerequisites: Chemistry 100 or 101, Mathematics 101, Physics 100 or 101, a modern language, and, if possible, Biology 100.

Course: In the Second Year, Geology 200; Biology 100 or Zoology 200 (if Biology 100 has been taken); in the Third and Fourth Years, Geology 301, 302, 304, 406, 407, 408, 409, 410, and 412 must be taken. Zoology 200 is recommended for the Third Year. A graduating essay (Geology 449) is required in the Fourth Year.

German

Prerequisite: A First Class or high Second Class in German 100 (or 200).

Course: In the Second Year, German 200 (or 300); in the Third and Fourth Years 18 units selected from German 300, 301, 302, 303, 400, 402; three units selected from History 314, Philosophy 205, or Slavonic Studies 330; and a graduating essay counting 3 units. Honours students who are not proficient in spoken German must attend a conversation class (one hour a week) in the Third and Fourth Year, for which no credit is given. Candidates will be required to take a comprehensive oral and written examination in the history of German literature.

History

Prerequisites: For admission to the Third Year of the Honours Course (1) a First Class or high Second Class standing in at least one of the History courses open to the students of the First and Second Years; (2) a reading knowledge of French, German, Russian, or Spanish.

Course: Students entering Honours in the Second Year should pursue the following course: English 200, French 202 (or its equivalent in German, Russian, or Spanish); one of History 202 or 203; and two elective courses. Students who have not taken History 101 in the First Year are required to take it in the Second Year in which case they may substitute History 101 for History 202 or 203.

Third and Fourth Year students must elect either History 304 or 309, write a graduating essay which will count 3 units, and take 12 other units which must be chosen from courses offered in the Third and Fourth Years. They must also attend the Honours Seminars of the Third and Fourth Years.

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

An Honours paper will be set at the end of the Fourth Year on the work of the seminars 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.

International Studies

Prerequisites: For students proceeding to the Third Year in the Honours Course, French 202 or its equivalent in German, Russian, or Spanish, and a First Class or good Second Class standing in History 101 or Economics 200.

Course: In the Second Year, Economics 200, English 200, French 202 (or its equivalent in German, Russian, or Spanish); Geography 201, History 101 (if not already taken) or History 202 (if not already taken). Slavonic Studies 205 is also recommended.

In the Third Year, a language course, International Studies 300 or 310, the Seminar in Political Science (445) or the Seminar in Slavonic Studies (448); two of History 310, 312, Slavonic Studies 308, 311, Geography 306, Economics 310, 325.

In the Fourth Year, International Studies 400, the Seminar in Canadian External Policy (International Studies 410), a graduating essay (3 units) dealing with some phase of International Studies, two of Geography 307, History 415, 419, 427, Economics 330, Political Science 400, 425, 435, Slavonic Studies 310, 330.

Third and Fourth Year courses are to be chosen in consultation with the Director of International Studies.

Students whose work at the end of the Second or Third Year has not been of sufficiently high standard may be required to withdraw from Honours. A general paper will be set at the end of the Fourth Year on the seminars and courses attended in the upper years. There will be an oral examination on the topic covered in the graduating essay.

Latin

Prerequisite: Latin 101.

Course: Latin 202 in the Second Year; in the Third and Fourth Years Latin 303, 304, 331, 405, 406, Greek 331, and private reading to count for 3 units. The candidates 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. Candidates are strongly advised to take Greek.

Mathematics

Prerequisites: Mathematics 101, Physics 100 or 101. A reading knowledge of French, German, or Russian is highly desirable. Students should therefore elect at least one of these languages in the First or Second Year. It is also suggested that Chemistry 100 or 101 be taken in the First Year.

Course: Mathematics 200, 202, Physics 200, and 9 additional units in the Second Year; Mathematics 320, 321, 322, and 9 or 10 additional units in the Third Year; Mathematics 400, 401, 402, 403, 440, and 5 or 4 additional units in the Fourth Year. The additional units in any year must be chosen to satisfy the general requirements for the B.A. degree and in consultation with the Department. For students intending to take graduate work, a reading knowledge of at least two of French, German, or Russian is essential.

Mathematics (Actuarial Option)

Prerequisites: Mathematics 101, Physics 100 or 101, Economics 100 or Psychology 100.

Course: Mathematics 200, 201, 202, Economics 200, and 6 additional units in the Second Year; Mathematics 320, 321, 322, Economics 300, Commerce 251, and 3 or 4 additional units in the Third Year; Mathematics 405, 440, at least 6 units chosen from Mathematics 307, 400, 401, 402, 403, and additional units to total 16 or 15 in the Fourth Year. The additional units in any year must satisfy the general requirements for the B.A. degree, and should be chosen, in consultation with the Department, from the following courses: Economics 335, 410, 435, English 205, History 202, 312, Mathematics 205, Spanish 90, 101, or others to be specified by the Department.

Philosophy

Prerequisites: Mathematics 101, Psychology 100, Philosophy 100 or 205, and 3 units of a science.

Course: Twenty-one units of Philosophy: 202, and 9 units from 205, 210, 305, 310, 410 must be taken. Credit in 205 needs Departmental approval.

Physics

Prerequisites: Chemistry 100 or 101, Mathematics 101, and Physics 100 or 101.

Course: In the Second Year, Mathematics 200, 202, Physics 200, and 9 additional units chosen in conformity with Calendar regulations; in the Third Year, Mathematics 320, 321, Physics 300, 302, 304, 308, Chemistry 304; in the Fourth Year, Mathematics 402, Physics 401, 402, 403, 405, 406, 407, 409.

Political Science

Prerequisites: For admission to the Third Year of the Honours Course, Mathematics 101, a reading knowledge of French, German or Russian, and a First Class or high Second Class standing in Economics 200.

Course: In the Third and Fourth Years, Political Science 300, 400, 440, 441 and 449 and any three of Economics 320, Political Science 330, 425 and 435, History 309 and 419, Slavonic Studies 308, 330 and 412.

Psychology

Prerequisites: Mathematics 101; Psychology 100; and 3 units of a science, preferably Biology. At least Second Class standing must be obtained in the work of the Second Year.

Course: Twenty-one units of Psychology including 200 and 304; Philosophy 202, and 100 or 205, must be taken. Three additional units of science, preferably Biology 304, or Mathematics 202 must be taken.

Slavonic Studies

Prerequisite: Russian 100.

Course: In the Second Year, Russian 200 or 203, and one of Slavonic Studies 205, Polish 110; in the Third and Fourth Years Russian 300 and Russian 400, and 12 units chosen from the following courses: Slavonic Studies 306, 308, 310, 312, 314, 330, 412, 448, Russian 319, 401, 402, 502, Polish 210, 318, History 415, International Studies 400.

Sociology

Prerequisites: For admission to the Third Year of the Honours Course, Mathematics 101, a reading knowledge of French, German, or Russian, and a First Class or high Second Class average in Sociology 200.

Course: In the Third and Fourth Years, 12 units selected from Sociology and 6 units selected from courses offered in any other Social Science. Sociology 440 or 441 must be taken in either the Third or Fourth Year and 440 (the honours essay) must be completed in the Fourth Year.

Spanish

Prerequisite: Spanish 101.

Course: In the Second Year, Spanish 201; in the Third and Fourth Years, 18 units chosen from Spanish 301, 302, 304, 320, 400, 401, 402, 403, 404, 410 and a graduating essay (3-6 units).

Zoology

Prerequisites: English 100-1, French 100, Mathematics 101, Biology 100, Chemistry 100 or 101.

Course: In the Second Year, English 200, German 90 or 101 or Russian 100, Zoology 200, Botany 200, Chemistry 200 (or Chemistry 210 with special permission), Physics 100 or 101; in the Third and Fourth Years, Zoology 300, 304, 400, 408; two of Zoology 301, 303 and 404; Biology 330, Chemistry 300 unless exemption is given by the Department, a course from Note 4 (ii), page 98, Zoology 449 and three or four options.

Optional Courses: Zoology 302, 305, 306, 307, 308, 400, 401, 402, 403, 406, 412, 413; courses in Botany; Biology 400, 430, 431; Geology 406; Agronomy 421; Mathematics 405.

Within the Honours programme a student may proceed to a specialization in one of the several fields of academic zoology, for example, Anatomy, Embryology, Physiology, Parasitology; or to one of the applied fields of Entomology, Fisheries, or Wildlife Management. Sequences of courses appropriate to these programmes should be chosen in consultation with the Head of the Department. In the fields of applied zoology, Third and Fourth Year options should include some of the following courses:

Entomology: Zoology 301, 302, 303, 305, 308, 401, 402, 404, 406, 407; Agronomy 202; Animal Husbandry 215; Horticulture 213.

Fisheries: Zoology 301, 302, 303, 307, 403, 404, 405, 406; Agronomy 421; Biology 400; Botany 411.

Wildlife Management: Zoology 301, 302, 303, 306, 404, 406, 409, 410; Agronomy 304, 421; Botany 303, 304, 420; Forestry 160, 250, 253, 350.

COMBINED HONOURS COURSES

(a) Any two of:

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

(b) Any two of:

Economics, English, French, Geography, German, History, Latin or Classics, Philosophy, Political Science, Psychology, Slavonic Studies, Sociology, Spanish.

(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: Mathematics 101, Chemistry 100 or 101, and Biology 100. Biology 100 may be taken concurrently with Bacteriology 201 in the Second Year.

Course: In the Second Year, Bacteriology 201; in the Third and Fourth Years, Bacteriology 301, 401, 402, and 403, and a thesis.

Biology and Botany

Prerequisites: Biology 100, Chemistry 100 or 101, Mathematics 101.

Course: In the Second Year, Botany 200 and Chemistry 200 or the equivalent. In the Third and Fourth Years, 12 units selected from Third and Fourth Year courses in consultation with the Head of the Department.

Chemistry

Prerequisites: Chemistry 100 or 101, Mathematics 101, and Physics 100 or 101.

Course: In the Second Year, Chemistry 200, Mathematics 202, Physics 200; in the Third and Fourth Years, Mathematics 300 and 12 additional units to be chosen in consultation with the Department.

Classics

Prerequisites: Greek 101, Latin 101.

Course: Greek 202 and Latin 202 in Second Year; in the Third and Fourth Years, Latin 310 and 410; any two of Greek 303, 305, 306, 407; any two of Latin 303, 304, 405, 406.

Economics

Prerequisites: For admission to the Third Year of the Honours Course, Mathematics 101, a reading knowledge of French, German or Russian, and a First Class or high Second Class standing in Economics 200. In addition to the requirements following, students who have not taken Economics 100 in their First or Second Year will be required to take Economics 410, unless they are proceeding to Combined Honours in History and Economics and are offering either History 416 or History 417.

Course: In the Third and Fourth Years, Economics 300, 301, or 330, 335 and 3 further units in Economics courses numbered above 300. These 3 units may be replaced by the graduating essay (Economics 449) if it is written in Economics. In this case Economics 440 and 441 must be taken in the Third and Fourth Years.

English

Students who intend to take Honours must have the permission of the Department before proceeding to the work of the Third year.

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, German or Russian.

Course: English 440, 444, 445, and any three of the English courses specified for the Third and Fourth Years.

See also statement of prerequisites on page 102.

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

(1) 1500-1700; (2) 1700-1800; (3) 1800-1914.

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

French

Prerequisite: French 101.

Course: In the Second Year, French 202, which must be passed with a First or high Second Class standing, and French 203; in the Third and Fourth Years French 300, 302, and 6 additional units; 12 units in the second subject selected in consultation with the departments concerned; and a graduating essay (6 units) in one or the other field.

Geography

Prerequisites: Geography 101 and Mathematics 101.

Course: Twelve units from any of the Third and Fourth Year courses offered in Geography. Other requirements are the same as for the Single Honours Course.

Geology

Prerequisites: Chemistry 100 or 101, Mathematics 101, and Physics 100 or 101.

Course: In the Second Year, Geology 200; in the Third and Fourth Years 12 units selected in consultation with the Head of the Department; a graduating essay of value 3 units.

Geology and Geography

Prerequisites: Chemistry 100 or 101, Geography 201, Mathematics 101, and a modern language.

Course: In the Second Year, Geology 200 (Geography 101 passed with at least 75 per cent. accepted in lieu of Geology 200); in the Third and Fourth Years, 12 units in each of Geology and Geography selected in consultation with the Head of the Department, and a graduating essay counting 3 units.

German

Prerequisite: A First Class or high Second Class in German 100 (or 200).

Course: German 200, 300, 302, and any two of 301, 303, 400, 402, and a graduating essay. Candidates will be required to take a comprehensive oral examination in the history of German literature.

History

Prerequisites: For admission to the Third Year of the Honours Course (1) a First Class or high Second Class standing in at least one of the History courses open to the students of the First and Second Years. (2) A reading knowledge of French, German, Russian or Spanish.

Course: Students entering Honours in the Second Year should pursue the following course: English 200, French 202 (or its equivalent), one of History 101 (if not taken in the First Year), 202 or 203, and two other courses, one of which must be in the other Honour field.

Third and Fourth Year students must elect either History 304 or 309, and any 9 additional units of Third and Fourth Year History, of which the graduating essay, if written in History, will count 3 units. Students must also attend the Honours Seminars of the Third and Fourth Years.

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

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 if written in History.

Latin

Prerequisite: Latin 101.

Course: Latin 202 in the Second Year; in the Third and Fourth Years Latin 310 and 410 and any four of 303, 304, 331 (3 units) or Greek 331 and Latin 331 (1½ units each), 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

The following are the requirements for Mathematics combined with a subject other than Physics.

Prerequisites: Mathematics 101, Physics 100 or 101.

Course: Mathematics 200, 202, and 12 additional units in the Second Year; Mathematics 320, 321, 322, and 9 or 10 additional units in the Third Year; Mathematics 440 and any two of Mathematics 400, 401, 402, 403 and additional units to total 16 or 15 in the Fourth Year. The additional units in any year must be chosen to satisfy the general requirements for the B.A. degree and in consultation with the departments concerned.

Philosophy

Prerequisites: Mathematics 101, Philosophy 100 or 205, Psychology 100.

Course: Fifteen units selected in consultation with the Department. Twelve units must be taken in the Third and Fourth Years.

Physics

The following are the requirements for Physics combined with a subject other than Mathematics.

Prerequisites: Mathematics 101, Physics 100 or 101.

Course: In the Second Year, Mathematics 202, Physics 200; in the Third Year, Mathematics 300, Physics 300 and 308; in the Fourth Year, Physics 402 and 4 additional units in the Department.

Physics and Mathematics

Prerequisites: Chemistry 100 or 101, Mathematics 101, Physics 100 or 101.

Courses: In the Second Year, Mathematics 200, 202, Physics 200 and 9 additional units chosen in conformity with Calendar regulations; in the Third Year, Mathematics 320, 321, 322, Physics 300, 302, 304, 308; in the Fourth Year, Mathematics 402, 441, Physics 401, 402, 403, 406, 407, 409.

Political Science

Prerequisites: For admission to the Third Year of the Honours Course, Mathematics 101, a reading knowledge of French, German or Russian, and a First Class or high Second Class standing in Economics 200.

Course: In the Third and Fourth Years, Political Science 300, 400 and 6 units to be chosen from Economics 320, Political Science 425, 435, History 309 and 419, International Studies 400 and Slavonic Studies 412. Three of the 6 units mentioned may be replaced by the graduating essay (449) if it is written in Political Science. In this case, Political Science 440 and 441 must be taken in Third and Fourth Years.

Psychology

Prerequisites: Mathematics 101, Psychology 100, Philosophy 100 or 205.

Course: Fifteen units in Psychology selected in consultation with the Department, of which 12 units must be taken in the Third and Fourth Years.

Slavonic Studies

Prerequisite: Russian 100.

Course: In the Second Year, Russian 200 or 203; in the Third and Fourth Years, Russian 300 and 9 units selected from Slavonic Studies 306, 308, 310, 312, 314, 318, 400, 401, 402, 502.

Sociology

Prerequisites: For admission to the Third Year of the Honours Course, Mathematics 101, a reading knowledge of French, German or Russian, and a First Class or high Second Class standing in Sociology 200.

Course: In the Third and Fourth Years, 9 units in Sociology. If the graduating essay, Sociology 449, is written in Sociology, it may be substituted for 3 of these units. In this case Sociology 440 and 441 must be taken in the Third and Fourth Years.

Spanish

Prerequisite: Spanish 101.

Course: In the Second Year, Spanish 201; in the Third and Fourth Years, 12 units chosen from Spanish 301, 302, 304, 320, 400, 401, 402, 403, 404, 410; 12 units in the second subject selected in consultation with the department concerned; and a graduating essay.

COURSE LEADING TO THE DEGREE OF B.Com.

Students 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 1945-46 Calendar regulations (i.e. upon completion of four years of work including

First Year Arts and Science or its equivalent). All others will conform to the requirements of the present Calendar.

General regulations for the B.Com. degree are the same as those for the B.A.

Students will be required to undertake extensive field work in the business community and to make periodic written reports in courses.

For mimeographed material supplied by the Department for use in classes, a small charge may be made.

A student proceeding to the degree of B.Com. is required to arrange his courses so that he will be registered in Commerce for at least three years. Exceptions to this rule must be approved by the Dean and the Head of the Department.

From the beginning of his course a student should be careful to choose studies likely to assist him when he begins to specialize.

Courses in the Fourth and Fifth Years are arranged in groups by which the student may draw up his programme, but he may, after consultation with the Head of the Department, choose courses from any of the groups.

Students selecting options in conjunction with other departments (e.g. Agriculture, Forestry, etc.) of the University must take the full option as it is presented.

Courses in Commerce will emphasize distribution, foreign trade, and transportation, all of which are specially important in the economy of British Columbia. As far as possible class material will be based on the leading industrial and commercial activities of the Province.

Two copies of all major reports and theses must be filed with the Department, and a third copy should be kept by the student.

Choosing Electives

It is recommended, that throughout their course, students include in their electives, courses in the general Arts curriculum for which they are eligible. Particular attention is directed to the importance of English for Commerce graduates. Before registering for courses other than those definitely prescribed in each year students must secure the approval of the Dean of the Faculty of Arts and Science and the Head of the Department of Commerce.

Course Numbering

The first digit designates the Year of the Commerce course:

2 is Second Year; 3 is Third Year; 4 is Fourth Year; 5 is Fifth Year.

The second digit designates the subject grouping of the course:

3 is Foreign Trade; 4 is Transportation; 5 is Accounting; 6 is Marketing; 7 is Finance; 8 is Industrial Management; 9 is Miscellaneous.

The third digit designates the separation between fundamental and advanced courses in their respective subject groupings:

1 and 2 are fundamental courses; 3-7 are advanced courses; 8, 9, 0 are miscellaneous courses.

E.g., 361 denotes a Third Year course of fundamental character in the marketing group; 453 denotes a Fourth Year course of advanced character in the accounting group.

Students should take their courses in the Year designated by the first digit.

First Year

A complete course in First Year Arts and Science or the equivalent, including English 100 and 101, Mathematics 101, and a language. No student with standing defective in the First Year will be permitted to enter Second Year Commerce.

Students taking a language course numbered 90 in their First Year will be required before graduation to obtain credit in the next course in the same language. This course must be taken as an extra subject. They are advised to take it in the Second Year.

Second Year

The following courses comprising 15 units: English 200 or English 205; Mathematics 201 or an additional course in the language taken in the First Year or Russian 100; Economics 200; Geography 201; Commerce 251.

In view of the importance of adequate and clear expression in writing, regulation 4 under "Standing and Credit" on page 125 of the Calendar will be rigidly enforced at the end of the Second Year. A reasonable legibility in handwriting will be insisted upon.

Third Year

Prerequisites for all Commerce courses: Commerce 251, Economics 200. Students who fail to obtain credit in each of these courses will be unable to proceed to the Third Year.

The following courses comprising 15 units: Commerce 352 and 361; Economics 300; Economics 335 or an additional course of the language taken in the Second Year; an elective, to be chosen from any three-unit course in the general Arts curriculum for which the student has taken the prerequisites or for which he can qualify under the regulations for the General Course as found on page 99.

Students intending to take Commerce 453 must secure at least Second Class standing in Commerce 352.

Students who at the beginning of the Third Year are definitely interested in a specific Fourth and Fifth Year option are advised to elect the suggested desirable courses unless previously taken as a science in the First Year.

Fourth Year

Prerequisite to all Commerce courses: Commerce 352; Commerce 361; Economics 300.

At the beginning of the Fourth Year every student is required to plan his Fourth and Fifth Year work. Before registering he must have his course approved by the Dean of the Faculty of Arts and Science and the Head of the Department.

The following courses comprising 18 units: Commerce 471, 481*, 491; Economics 320 or 325; six units of electives, chosen so as to conform with the requirements of the option groupings covering the Fourth and Fifth Years. Students taking the language option must continue with their language.

*Commerce 481 is required for all male students but not for women, who are recommended to substitute some course in the general Arts curriculum for which they have the necessary qualifications. Women desiring to take Commerce 481 should consult with the Dean, the Head of the Department, and the instructor in the course before registering.

Fifth Year

Prerequisite to Commerce courses: Commerce 471 and 491.

The following courses comprising 18 units: Commerce 593, 594, 599; nine units of electives to be chosen so as to conform with the requirements of the option groupings covering the Fourth and Fifth Years. If Commerce 594 is not offered, 12 units of electives will be required.

Fourth and Fifth Year Options

Note: Desirable preliminary science courses are indicated and should be taken before the Fourth Year.

Accounting Option: Commerce 453, 553, 554 and 555. Commerce 352 is a prerequisite.

Agricultural Optional: Agricultural Economics 301 and 401 together with six units of work in Agriculture to be selected in consultation with the Dean of the Faculty of Agriculture. Biology 100 and Chemistry 100 or 101 are desirable preliminary courses.

Education Option: To qualify for admission to the Teacher Training Course, the candidate must fulfil the requirements for the B.Com. degree, including 9 units beyond Second Year Arts and Science in one of the subjects listed under Preparatory Courses, Section 3 (a) of the Teacher Training Course, page 124.

Foreign Trade Option: Commerce 533, Economics 310 (prerequisite to the Commerce course). Suggested useful electives: Slavonic Studies 205, 308, 312, 314; courses in Political Science; courses in Geography.

Fisheries Option: Zoology 200, 307, 403, and 405. Zoology 200 is prerequisite to Zoology 307.

Forestry Option: Forestry 371, 462, 473, 475, 381. Forestry 252 (Botany) is a desirable preliminary course.

Language Option: The basic language option is arranged for students who prefer languages to mathematics and statistics; students who elect a language are expected to take as many courses as possible in the Fifth Year.

Special attention is directed towards the possibility of beginning the study of Russian in the Second Year and related Slavonic Studies subjects in the Third and Fourth Years. The growing political and industrial importance of the Slavonic bloc presages a high commercial importance for the Russian language.

Marketing Option: Commerce 461, 463, 563, 564, and 565. Commerce 461 is prerequisite to Commerce 564 and 463 is prerequisite to Commerce 563. It is advisable to include an English course numbered above 400.

Production Option: Commerce 583, 584, and 585.

Statistics Option: Mathematics 202; Economics 435; six units to be selected in consultation with the Head of the Department of Economics.

Transportation Option: Commerce 443, 544, and 545; Economics 320 and 405.

A desirable preliminary course is Geography 202.

COURSES LEADING TO THE DEGREE OF B.H.E.

Students entering in the fall of 1950 with University Entrance standing, including Home Economics CC III, will receive the degree of Bachelor of Home Economics on completion of courses amounting to a total of 60 units chosen in conformity with the following requirements:

(1) **Required courses:**

English 100 and 101.....	3	Units
Chemistry 100 or 101, and 210 (see notes 2 and 3).....	6	"
Biology 100 and 304.....	6	"
Bacteriology 201 or 202.....	3	"
Physics 100, or 101, or 110 (see note 3).....	3	"
Economics 140 or 200 (see note 3).....	3	"
Psychology 100.....	3	"
Home Economics 101, 102, 103, 200, 201, 202, 300, 301, 302, 303, 420, 421.....	19½	"

(2) Students who elect to proceed to Dietetic Training should complete in addition the following courses:

Home Economics 304, 305, 410, 413, 414, 416, 417.....	10½	Units
Commerce 259.....	1½	"

(3) Students who elect to proceed to Teacher Training should complete in addition the following courses:

Home Economics 304, 400, 401, 403, 410, and one additional course from among H.E. 305-417.....	9	"
--	---	---

(4) Students who elect a general Home Economics course without planning to proceed to a professional certificate should complete, in addition to those Home Economics courses listed under (1), nine units chosen from H.E. courses numbered 304 to 417.....

9 "

(5) Elective courses should be chosen from the following:

Agriculture 100, Botany 200, English 200 or 205, Geography 101 or 201, History 101 or 202 or 203, language (3 units), Mathematics 101, Philosophy 100, Sociology 200, Animal Husbandry 422, Horticulture 213, 314, 316, 317, Slavonic Studies 311, 330, Social Work 499, Architecture 150, 160, 270, 352, 466.

Notes

1. A student who has not presented Home Economics CC III, A III, or B III as part of her University Entrance standing, will be required to take Home Economics 90 and 91 before proceeding to any other Home Economics course. These prerequisite courses, totalling 3 units, shall be in addition to the 60 units required for the degree of B.H.E.

Should a student present Home Economics A III, she will take Home Economics 91 and a total of 61½ units. Should a student present Home Economics B III, she will take Home Economics 90 and a total of 61½ units.

A student who presents Home Economics 100 (CC IV) for Senior Matriculation credit will be granted credit for 3 units of Home Economics work usually carried in the First Year.

2. A student who plans to carry on advanced work in Nutrition or Textiles should include Mathematics 101 and Bacteriology 201 and substitute certain other courses in Chemistry for Chemistry 210, such substitutions to be arranged after consultation with the departments concerned.

3. Mathematics 91 of the High School Programme is prerequisite to Chemistry 100 or 101 and Physics 110. Students entering without credit in Mathematics 91 must register for Mathematics 101. Students electing Economics 200 or Physics 100 or 101 must take Mathematics 101 concurrently if not already taken.

PHYSICAL EDUCATION

Requirements For Men and Women

Two activity courses in Physical Education are required of all students in the First and Second Years of the Faculties of Arts and Science and Agriculture, in the Second Year of the Faculty of Pharmacy, and in the First Year of the Faculty of Applied Science, except ex-service personnel and members of military units operating on the campus. Only courses numbered from 100 to 199 may be selected to meet the requirement.

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 but 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 the Physical Education courses.

No student will receive a degree until he has completed the Physical Education courses required. If his work in the Physical Education courses is unsatisfactory in any year, he will be required to repeat the work during the following year.

All First and Second Year students must make an appointment for a medical examination at the time of registration. Students who are placed in medical category 3 by the University Health Service may, after consultation with the Physical Education Staff, be assigned to remedial or special classes.

All members of athletic teams must have a yearly medical examination preceding active participation.

For courses leading to the degree of Bachelor of Physical Education see page 117.

Men

First Year men may satisfy the above regulations by selecting two activity courses, one of which must be P.E. 100 or P.E. 130.

Second Year men may satisfy the regulations by selecting any two activity courses.

Students may substitute membership on a University athletic team for one Physical Education activity course.

First Year students intending to major in Physical Education must register for P.E. 104 and P.E. 100 or P.E. 130.

Gymnastics

100. General Activities. — General body conditioning, apparatus work, and games.

102. Tumbling and Apparatus.—Fundamental skills on all types of apparatus. Basic and advanced tumbling.

104. Introduction to Physical Education.—Required of students registering for the degree course in Physical Education.

Team Games

The following courses are open to students who are interested in increasing their knowledge of the rules and tactics of a particular sport and in obtaining some experience in the playing of a team game. These courses will be conducted along lines similar to regular university team practices. Students must be prepared to play regardless of weather conditions.

110. Basketball.—Conditioning and fundamental practice drills, offensive and defensive tactics.

112. American Football.—Conditioning and fundamental practice drills, offensive and defensive tactics, including touch football and six man football.

114. English Rugby.—Conditioning, and fundamental practice drills, offensive and defensive tactics.

116. Grass Hockey and Soccer.—Conditioning, and fundamental practice drills, offensive and defensive tactics.

Individual and Dual Activities

120. Individual and Dual Games.—Fundamentals and skills at beginners' level in tennis, golf, and badminton.

122. Archery.—Open only to students in Medical Category 3.

124. Track and Field.—Track and field practices, leading to competition on intramural level.

126. Weight Training.—General conditioning and body building.

Swimming and Life-Saving

130. Swimming, Beginners.—Open to students who cannot swim 150 feet using any recognized stroke.

132. Swimming, Intermediate.—Fundamental skills of breast stroke, back stroke, crawl, elementary diving.

134. Life-Saving.—An intermediate course leading to Bronze Medallion of Royal Life-Saving Society.

136. Life-Saving.—An advanced course leading to Award of Merit, Royal Life-Saving Society.

138. Swimming Club.—Recreational and competitive swimming.

Dance

140. Square and Round Dancing.—Co-recreational.

148. Ballroom Dancing.—Co-recreational (beginners).

Combative Sports

150. Boxing.—Fundamentals of self-defence, leading to competition on intramural level.

152. Boxing Club.

154. Fencing Club.—Introduction to fencing technique with foil, épée, sabre.

156. Wrestling.—Fundamental holds and breaks, leading to competition on intramural level.

Women

Women will choose two courses in Physical Education from the following activities in each of the first two years.

Students may substitute membership on a University team for one Physical Education activity course.

Gymnastics

101. **Gymnastics.**—General conditioning exercises, and body mechanics.
103. **Individual Gymnastics.**—Exercises to correct postural faults. Open to those in Medical Category 3. To be arranged in consultation with the staff.
105. See 104 above.

Team Games

111. **Team Games.**—Basketball, field hockey, volleyball.

Individual Games

113. **Archery, Beginners.**
115. **Archery, Intermediate.**
117. **Badminton, Beginners.**
119. **Badminton, Intermediate.**
121. **Golf, Beginners.**
123. **Golf, Intermediate.**
125. **Table Tennis.**
127. **Tennis, Beginners.**
129. **Tennis, Intermediate.**

Swimming and Life-Saving

131. **Swimming, Beginners.**
133. **Swimming, Intermediate.**
135. **Swimming, Senior and Life-Saving.**

Dance

141. **Folk Dance.**
143. **Modern Dance, Beginners.**—Fundamental rhythmic movements and introduction to composition.
145. **Modern Dance, Intermediate.**
147. **Square Dancing.**—Co-recreational.
149. **Ballroom Dancing.**—Co-recreational (beginners).

COURSE LEADING TO THE DEGREE OF B.P.E.

Students enrolling in the course leading to the degree of Bachelor of Physical Education must have a yearly medical examination completed within the first two weeks of the session.

General regulations for the B.P.E. degree are the same as for the B.A. degree, except that, with the approval of the Director, a student may be permitted to take 21 units, provided these units include at least 4 units of activity courses.

Students intending to enter the Teacher Training Course should choose their electives in order to satisfy the requirements for admission given on pages 123, 124.

Students intending to work in recreation must select a minor in Sociology or another field approved by the Department of Physical Education.

First Year

	Units
English 100 and 101.....	3
Biology 100, or Chemistry 100 or 101.....	3
Electives (to be chosen in consultation with the Department of Physical Education)	9
Two hours required Physical Education activity.....	
Men must register for P.E. 104.	
Women must register for P.E. 105.	

Notes.

1. Students who do not have credit for Physics 91 of University Entrance are advised to take Physics 101, 103, or 110 as an elective in the First or the Second Year.
2. Mathematics 91 of High School is required for entrance into the Physical Education Course or Mathematics 101 must be taken as an elective in the First Year.
3. Students planning to accompany the major in Physical Education with a major in Mathematics or any science should take Mathematics 91 in University Entrance and must take Mathematics 101 in the First Year. For other courses and majors requiring Mathematics 91 or 101 see pages 97, 98, note 6. Students in Physical Education, however, will be permitted to take Chemistry 100 or 101 without Mathematics 101 provided they have taken Mathematics 91 in High School.
4. Chemistry 91 is recommended for entrance.
5. Students planning to accompany the major in Physical Education with a major in a science should take two of the following sciences in their First Year and the third in their Second Year: Physics. 100 or 101, Chemistry 100 or 101, Biology 100.

Second Year

	Units
English 205 or English 200 (English 200 required for students majoring in English)	3
Chemistry 100 or 101 or Biology 100, or an elective if both have been taken	3
Psychology 100	3
Elective (to be chosen in consultation with the Department of Physical Education)	3
Physical Education 260	2
Eight hours of Physical Education activity a week.....	4

Men	Women		Men	Women
P.E. 200	201	Gymnastics		
		General Activities	2 hrs.	2 hrs.
*	211	Team Games	2 hrs.	2 hrs.
*	221	Individual and Dual Games.....	2 hrs.	1 hr.
230	231	Aquatics	1 hr.	1 hr.
240	241	Dance	1 hr.	2 hrs.

*Men must select 4 hours (2 units) from courses 208-226.

Third Year

		Units
Psychology: One course to be selected from Psychology 201, 202, 301, 303, or an elective.....		3
Elective		3
Physical Education 360		2
Physical Education 370		3
Biology 304		3
Eight hours of Physical Education activity a week.....		4
Men	Women	
P.E. 300	301	Gymnastics
		General Activities 2 hrs.
*	311	Team Games 2 hrs.
*	321	Individual and Dual Games..... 2 hrs.
330	331	Aquatics 1 hr.
	341	Dance 1 hr.
350		Track and Field 1 hr.

*Men must select 4 hours (2 units) of courses not already taken.

Fourth Year

		Units
Electives (which must include, if it has not been taken in the Third Year, one of Psychology 201, 202, 301, 303)		9
Physical Education 460		2
Physical Education 470		2
Physical Education 471		1
Eight hours of Physical Education activity a week.....		4
Men	Women	
P.E. 400	401	Gymnastics
		General Activities 2 hrs.
406		Physical Education Workshop 1 hr.
*	411	Team Games 2 hrs.
*	421	Individual and Dual Games..... 2 hrs.
*	†431	Aquatics 1 hr.
450		Track and Field 1 hr.

*Men must select 5 hours (2½ units) of courses not already taken.

†With the permission of the Director, students may choose an optional course in place of 431.

COURSE LEADING TO THE DEGREE OF B.Ed.

1. Prerequisites:

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

2. Course: The B.Ed. degree represents 15 units as follows:
 - (a) 6 units for the completion of the Teacher Training Course or its equivalent.
 - (b) 9 units—not already chosen—selected from Education 510 to 582 inclusive.
3. With the approval of the Dean and the Head of the Department, 3 units regularly carrying Third Year or higher credit in a subject other than Education may be included in the 15 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, or Pass, according to the average mark obtained in the 9 units required under 2 (b) above.
6. No more than 3 units of courses under 2 (b) above may be taken by correspondence.

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 a minimum of two university years of graduate study including lectures, clinical practice work in the field, and a research project or thesis, leading to the degree of Master of Social Work. The total course is designed to give a broad preparation for the field of social work and to develop skill in one or more fields of practice. Students who complete one-half of this programme qualify for the degree of Bachelor of Social Work.

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. A minimum of 27 units in the social and biological sciences is required.
- (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. Economics 200 (Second Year) and Social Work 499 (Fourth Year) are required. Economics 140 may be substituted for Economics 200 only with the special permission of the Department of Social Work. It is also recommended that in the First and Second Years undergraduates select for their electives as many introductory courses in the social and biological sciences as possible. Recommended courses for First Year include Biology 100, Mathematics 101, and History 101 or Economics 100. Recommended courses for Second Year include Economics 200 (required), Anthropology 200, Economics 100, History 101, 202, 203, Philosophy 100, Psychology 100, Slavonic Studies 205, Sociology 200, Zoology 200.

Third and Fourth Year students are advised to choose a general course in the social sciences, majoring preferably in Anthropology. Economics,

History, Political Science, Sociology, or Slavonic Studies. Courses recently established at the University and suitable as electives for some students include those in international studies, housing, town planning, theatre, and music.

Student Advisors

On entrance to the Department each student is assigned to a member of Faculty, who is responsible for assisting the student in planning his total programme of courses and in advising and helping him at all times.

Organization of Course

The two year programme is arranged to give a generic training in social work for all students. The basic courses are:

1. The History and Organization of the Social Services: S.W. 499, 503, 512, 513, 583, 584.
2. Understanding People: S.W. 504, 508, 518, 540, 572.

Methods courses are grouped as follows:

1. Working with people as individuals: S.W. 501, 502, 505, 506, 570, 581.
2. Working with people in groups: S.W. 507, 517, 563, 580.
3. Working with the community: S.W. 511, 565.
4. Administration of social services: S.W. 545, 546, 559, 560, 568, 569, 573, 582.
5. Research in social work: S.W. 520, 585.

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 12 units of lectures and 3 units of field work. Candidates must successfully write a comprehensive examination on the year's work. Lectures and field work are to be chosen from the following courses:

	Units
S.W. 501 and 502. Social Case Work	3
S.W. 503. Public Welfare	1½
S.W. 504. Medical and Psychiatric Information 1	1½
S.W. 507. Social Group Work 1	1½
S.W. 508. Medical and Psychiatric Information 2	1½
S.W. 509. Beginning Field Work	3
S.W. 511. Community Organization	1½
S.W. 512. Community Resources	1½
S.W. 513. Public Welfare 2	1½
S.W. 517. Social Group Work 2	1½
S.W. 518 Development of Personality	1½
S.W. 520. Social Research	1½

Two plans of work are available for casework students in the First Year. Field work under supervision may be taken *concurrently* with the lecture programme and the students spend a minimum of 450 hours or from 2 to 2½ days each week in this practice work plus a block period of full-time work at the end of the session in a recognized social agency. This constitutes the necessary 3 units of field work credit. Field work may also be taken in a *block period* from January to May. The students who elect this programme attend classes in the First Term (September to Dec-

ember) and then proceed to full-time field work in recognized social agencies outside Vancouver. They return for an eight week period of classes from the middle of May to the first week in July. Students in the first plan will take additional field work in the summer or employment in a social agency, but may take certain courses in the May to July session to lighten their work in their Second Year. Students who complete the block plan work will have three units of Second Year class work completed. Students in group work will ordinarily have a casework placement in the summer and will take a casework class in the May to July session.

Group work students in the First Year have instruction and practice in programme skills beginning as a workshop in the two weeks preceding field work and continuing during the session in connection with field work. Music, art, crafts, social and recreational activities are presented through the craft shops and other facilities of the University and of group work agencies. Emphasis is placed on the practical application of these skills.

The student should keep in mind that there are certain expenses involved in field and clinical work, primarily for transportation to the agency to which the student is assigned. These costs range from \$15.00 to \$30.00 a year for those in the concurrent plan.

The public and private family and child welfare agencies are used for field work in casework practice, since they provide the most general and fundamental work experience. Group work, recreation and community planning agencies are used for those interested mainly in group work. The student remains in the same agency for all First Year field work, and is supervised by a qualified member of the agency staff. The Department maintains a close relationship with the field work agencies through individual conferences between a Faculty member and the agency supervisor, and by group meetings. In this way the student's total development and his ability to relate classroom material to practical work can be observed.

The Degree of Master of Social Work

The Department of Social Work at the University of British Columbia, in line with the most recent trends in the profession, has developed a generic curriculum based on two years of graduate study. Students will find some opportunity for following their particular interests in casework or group work practice, administration and research in the Second Year. Those students who wish to specialize in casework or group work practice will find many settings in which to gain experience: family and child welfare, medical and psychiatric services, hospitals and clinics, public welfare, institutions, neighbourhood houses, public recreation, work with the handicapped, community centres, probation and court work.

1. Candidates for the M.S.W. degree (except as noted below) must have the B.S.W. degree, and should 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 which may include a qualifying examination.

4. Students accepted as candidates for the M.S.W. degree will be required to complete a minimum of one year of University study including nine units of lectures, 3 units of field work, and a thesis or research project to count for 3 units. At least Second Class standing is expected of all candidates for the Master's degree. 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. For some students block placements in advanced field work will be arranged during the summer preceding or following the Second Year of study. Candidates for the M.S.W. degree are expected to complete a minimum of 450 hours of field work, but in most instances 600 hours will be required.

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

6. Details relating to the format, presentation, and submission of the M.S.W. thesis are set out in the special bulletin, *Instructions Relating to M.S.W. Thesis*, obtainable from the Registrar. The candidate is required to submit four copies of the completed thesis, of which at least the first two must be on good bond paper. If the thesis is approved, two copies are bound for permanent deposit in the University Library, one is retained by the Department of Social Work, and the fourth is made available to the agency or agencies most directly interested in the subject of the research project.

The latest date for submission of thesis in time for graduation at the Spring Convocation is the last day of lectures in the Second Term: for graduation in the Autumn Congregation, the corresponding date is June 30th. To meet these dates, candidates must have submitted to their thesis adviser at least three-quarters of the thesis in provisional form one month before the last day of lectures in the Second Term, or by May 31st, whichever is appropriate.

Students who fail to complete their thesis by June 30th in their Second Year are required to apply for readmission to the degree in the First Term of the Session immediately following. Permission to proceed with the thesis for completion during this session is not automatic, but will depend on a review by the Department of the circumstances of the individual candidate.

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 examination on the thesis subject, and a written comprehensive examination, will provide the final evidence of the competence of the candidate.

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 on page 141.

1. Registration

Documentary evidence of graduation 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.

3. Preparatory Courses

Students who intend to proceed to the Teacher Training Course are required to take Psychology 100 as prerequisite to Educational Psychology, and must have fulfilled one of the following: (See also notes below).

- (a) They must have obtained at least 9 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, Russian, Spanish. Equivalent courses in the Faculty of Applied Science may be offered. Candidates offering History may substitute 6 units of one, or 3 units in each of two, of Economics, Political Science, Slavonic Studies, Sociology, and Geography, for 3 units of History.
- (b) They must have completed an Honours Course in any one or two of the subjects listed above.
- (c) They must have obtained, in their Third and Fourth Years, 9 units in one and 6 units in another of Mathematics, Physics, Chemistry and Biology (including Botany and Zoology), and in the other two subjects over their whole four years, a further 6 units in one and 3 in the other.
- (d) They must have obtained a B.S.A. degree which includes Mathematics 101, Physics 100 or 101, Chemistry 100 or 101, and Biology 100, and a further 9 units in one or more of these subjects.
- (e) They must have obtained a degree in Home Economics from a recognized university.
- (f) They must have obtained a degree in Physical Education from the University of British Columbia or its equivalent from a recognized university, including in the Third and Fourth Years at least 9 units in one of the subjects designated in (a).
- (g) They must have obtained a B.Com. with at least 9 units in the Third and Fourth Years in one of the subjects designated in (a) and present satisfactory evidence of proficiency in Typing and Shorthand.

Notes

Students who choose English as a major are advised to acquire some background in the social sciences. Those who offer a major in History are advised to take some work in Economics, Sociology, Political Science, and Geography, and one or more advanced courses in English. **It is strongly recommended that students choosing Mathematics or one of the sciences take at least one course in each of Biology, Physics, and Chemistry.**

Prospective teachers of Mathematics should consider the possibility of arranging their courses as follows: in the First and Second Years, Mathematics 101 and 200 respectively; in the Third Year, Mathematics 202 and 306; and in the Fourth Year, Mathematics 300 or 307.

EXAMINATIONS AND ADVANCEMENT

Examinations

1. Examinations in the Winter Session are held in December and April. In December they are held in all First and Second Year courses, and except where special exemption has been granted by Faculty, in all upper year courses. In April they are held in all courses except those final at Christmas. These examinations are obligatory for all students.

2. Applications for special consideration on account of illness or domestic affliction must be submitted in writing to the Dean not later than two days after the close of the examination period. In cases of illness, a medical certificate must be presented on the appropriate form which may be obtained from the University Health Service.

3. In any course which involves both laboratory work and written examinations, students will be required to make satisfactory standing in both parts. Results in laboratory work will be announced prior to the final examination, and students who have not obtained a mark of at least 50% will neither be permitted to write the examination nor to receive any credit for the course. If the course is repeated no exemption will be granted from the work in either part.

Standing and Credit

1. Candidates taking at least 15 units of work, and obtaining at least 50% in each subject, will be graded as follows: First Class, an average of 80% or over; Second Class, 65 to 80%; Passed 50 to 65%.

2. (a) A student taking 9 or more units in the Winter Session will receive credit for a course only if, as a result of the final examinations of that Session, he passes not only in that course, but in courses totalling at least 9 units. The passing grade for a course is 50%.

(b) A student taking less than 9 units in the Winter Session will receive credit for a course only if, as a result of the final examinations of that Session, he passes in all his courses. The passing grade for a course is 50%.

(c) A student in the Summer Session or in Extra-Sessional or Correspondence courses will receive credit for each course in which he obtains a grade of at least 50%.

3. Courses for which credit has not been obtained must be repeated, or permissible substitutes taken, in the next regular session attended. In the Winter Session the total of all courses taken may not exceed 18 units.

4. 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.

Supplementals

1. (a) In the Winter Session, a candidate will be granted a supplemental in a subject which he has taken during the Session provided (i) he has written the final examination and has obtained a final mark of not less than 35%; and (ii) he has obtained at least 9 units of credit in that Session. In any one session, no candidate will be granted supplementals in more than 6 units.

(b) In the Summer Session, a candidate will be granted a supplemental in a subject which he has taken during that session provided (i) he has written the final examination and has obtained a final mark of not less than 35%; and (ii) he has obtained 3 units of credit in that Session.

(c) In an Extra-Sessional or Correspondence course, a student will be granted a supplemental in a subject in which he has obtained a final mark of not less than 35%.

2. If a supplemental granted in a course is passed with a grade of at least 50%, credit will be given for the course.

3. In all but the final year a candidate who has been granted a supplemental may write it only once. If he fails, he must repeat the course or take a permissible substitute. In the final year he may write it twice (subject to the limitation in paragraph 3 under "Standing and Credit".)

4. Supplemental examinations, covering the work of both the First and Second Terms, will be held in August or September in respect of Winter Session examinations, and in 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.

Local centres for supplemental examinations in August will be arranged in British Columbia at the following centres: Cranbrook, Dawson Creek, Kamloops, Kelowna or Penticton, Ocean Falls, Prince George, Prince Rupert, Trail or Nelson, Victoria College.

A student wishing to write supplemental examinations at one of these centres must state in his application the centre chosen and must pay a fee of \$2.50 in addition to the regular fee of \$5.00 a paper for a supplemental examination.

5. Applications for supplemental examinations in respect of the Winter Session examinations, accompanied by the necessary fees (see Schedule of Fees), must be in the hands of the Registrar by August 1st.

Re-Readings

1. Any request for the re-reading of an answer paper must reach the Registrar within four weeks after the announcement of examination results and must be accompanied by a fee for each paper of \$5.00, which will be refunded only if the mark is raised.

2. Each applicant for a re-reading must state clearly why he believes the content of his paper to deserve a mark higher than it received; pleas on compassionate grounds should not form part of this statement and prospective applicants should remember that a paper with less than a passing mark has been read at least a second time before results are announced.

3. Re-readings will not be permitted in more than two papers (6 units) in the work of one academic year, and in one paper (3 units) in a partial course of 9 units or less or in the work of one Summer Session.

Unsatisfactory Standing

1. A student with standing defective in respect of more than 3 units, although he will not be permitted to register in a higher year, may be allowed to continue by registering in the lower year and by taking courses in accordance with Paragraph 3 under "Standing and Credit".

2. A student who twice in succession, fails to obtain credits in the Winter Session may, upon the recommendation of Faculty, be required by Senate to withdraw from the Faculty.

3. 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.

COURSES IN ARTS AND SCIENCE

The number of units assigned to a course is given in round brackets immediately following the course number. Thus 200 (3) under Anthropology indicates that Anthropology 200 is a three-unit course.

The hours assigned for laboratory, lectures, and tutorials in a course are indicated as follows:

- 2 lectures and 3 hours laboratory per week, both terms. [2-3; 2-3]
- 1 lecture and 2 hours laboratory per week, First Term. [1-2; 0-0]
- 1 lecture and 2 hours laboratory per week, Second Term. [0-0; 1-2]
- 2 lectures, 3 hours laboratory and 2 hours tutorial or discussion per week, both terms. [2-3-2; 2-3-2]
- 2 lectures, 3 hours laboratory, and 2 hours tutorial or discussion per week, either term. [2-3-2]

Anthropology

Anthropology 300 is the introductory and prerequisite course in this field, pending the organization of the general introductory course (200) described below. For additional available background material the following courses are recommended: Geography 201, Economics 200, Sociology 200, Psychology 210, Philosophy 304, Biology 304, Slavonic Studies 205.

Students intending to do advanced work in Anthropology should prepare to take Linguistics 319 and Zoology 300.

200. (3) Introduction to Anthropology.—A comparative study of cultural institutions in the primitive world; of social grouping; of economic and political life, art, religion, and the relationships between culture and the individual; brief considerations of the origins of man and culture, of the races of mankind and the meaning of race. Text-book: Hoebel, *Man in the Primitive World*. (May not be given in 1950-51). [3-0; 3-0]

300. (3) Social Anthropology.—Review of the archaeological evidence on human origins; the biological background of culture; a detailed study of primitive economics, religion, social and political organization. Text-book: Kroeber, *Anthropology*, 1948 edition. Mr. Hawthorn. [3-0; 3-0]

301. (3) Theory of Culture.—A consideration of the growth and nature of cultural institutions, with a detailed study of selected cultures. Text-book: Kroeber, *Anthropology*, 1948 edition. (May not be given in 1950-51). [3-0; 3-0]

400. (3) The Changing Primitive.—The impact of Western cultures upon the native, with especial reference to government programmes of welfare. Mr. Hawthorn. [3-0; 3-0]

401. (3) Indians of British Columbia.—The pre-European cultures of British Columbia; their present conditions, problems, modes of adjustment, problems of rehabilitation. Mr. Hawthorn. [3-0; 3-0]

402. (3) Peoples of the Pacific.—(Not given in 1950-51). [3-0; 3-0]

403. (3) Ethnology of the Haida, Kwakiutl, Tshimshian and Tlingit.—(Not given in 1950-51). [3-0; 3-0]

410. (3) Peoples of the Far East.—(Not given in 1950-51). [3-0; 3-0]

420. (3) Archaeology of British Columbia.—Theories on the prehistory of British Columbia. Methods and techniques employed in archaeological research. Each student will devote at least one afternoon a week to field and laboratory work and carry out the field study in archaeology. Mr. Borden. [2-3; 2-3]

Architecture

- 150. (2) As in Applied Science.
- 160. (2) As in Applied Science.
- 466. (3) As in Applied Science.

Bacteriology and Preventive Medicine

For Honours courses in Bacteriology and Preventive Medicine see pages 101 and 107.

For certain purposes, Dairying 304, 305, 407, and Agronomy 312, may be counted as courses in this Department.

201. (3) Introductory Bacteriology.—History of bacteriology; bacteria in nature; classification of bacterial forms; methods of culture and isolation; relation of bacteria to agriculture, industry, veterinary science, public health and sanitation. Text: Mackie and McCartney, *Handbook of Practical Bacteriology*, latest edition. Prerequisites: Mathematics 101, Chemistry 100 or 101, and Biology 100. Biology 100 may be taken concurrently. This course is prerequisite to Bacteriology 301. [1-4; 1-4]

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

202. (3) Bacteriology for Home Economic Students.—Growth of micro-organisms; principles of infection and immunity; home and community sanitation; hygiene of food preparation; certain industrial applications of bacteriology. Text: Swingle, *General Bacteriology*, 2nd edition. Prerequisites: Chemistry 210 and Biology 100. This course is reserved for Home Economics students. Such students intending to proceed to Bacteriology 301 must take Bacteriology 201. [1-4; 1-4]

301. (3) Immunology.—Protective reactions of the animal body against pathogenic micro-organisms; cellular and humoral immunity. Prerequisite: Bacteriology 201. [1-4; 1-4]

302. (3) Methodology of Bacteriological Research.—Seminars on literature of bacteriology and preventive medicine; execution of limited research problem; design of protocols with 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.

401. (3) Advanced Bacteriology and Immunology.—Nature and antigenic structure of bacteria and viruses; antigen-antibody reactions; theories of susceptibility and immunity; sensitization; preparation and assay of bacterial toxins, toxoids, and antitoxins. Text: Boyd, *Fundamentals of Immunology*, 2nd edition, 1947. Prerequisites: Bacteriology 201 and 301, with at least Second Class standing in both courses. This course must be taken by all students working for nine or more units credit in the Department. [2-2; 2-2]

402. (1½) Microbiological Physiology.—Physiology of bacteria, yeasts, and molds, including growth, nutrition, respiration, and other aspects of metabolism; microbial physiology in medicine, sanitation, and industry. Text: Anderson, *An Introduction to Bacteriological Chemistry*, latest edition. Prerequisites: Bacteriology 201 and 301 with at least Second Class standing in both courses; also Bacteriology 401, which may be taken concurrently. [2-2; 0-0]

403. (1½) Pathology of Infection.—History, techniques, and objectives of preventive medicine; conveyance of communicable infections, in relation

to prevention of disease; development of infections in the animal body. Prerequisites: Bacteriology 201 and 301 with at least Second Class standing in both courses; also Bacteriology 401, which may be taken concurrently. [0-0; 1-4]

404. (3) Reading Course in Bacteriology.—Critical discussion of an advanced problem, followed by written or oral examination. Prerequisites: Bacteriology 301, also Bacteriology 401 and one of Bacteriology 402 or 403, with which this course may run concurrently.

405. (1) Seminar.—Reviews of bacteriological problems by Bacteriology 302 and 304 students. Compulsory for Honours.

406. (3) Research Problem.—In final year of Honours, an investigation approved by Head of Department. The results form the graduating essay, to be reviewed by oral examination.

Biology

For Honours and major requirements in Biology and Botany see pages 101 and 107.

Biology 100 is prerequisite to all other courses in Biology and Botany, and to all courses in Zoology.

100. (3) 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, Nursing, Pharmacy, Fisheries, Home Economics. Principles of biology; interrelations of plants and of animals; life processes; the cell and division of labour; life-histories; relation to environment; dynamic biology. Text-book: Mavor, *General Biology*. Members of the Department. [2-2; 2-2]

304. (3) Basic Physiology.—Elementary human physiology. Course for Home Economics, Physical Education and Honours Psychology students. Text-book: Best and Taylor, *The Living Body*. Prerequisites: Biology 100, Chemistry 100 or 101. Mr. Black. [2-2; 2-2]

320. (3) Basic Ecology.—Primary methods and principles of ecology; bioecological view point. Laboratory and field exercises. References: Shelford, *Laboratory and Field Ecology*; Weaver and Clements, *Plant Ecology*; Clements and Shelford, *Bioecology*; Oosting, *The Study of Plant Communities*. Prerequisites: Botany 200, Zoology 200. Mr. Pillsbury. [2-3; 2-3]

330. (3) Principles of Genetics.—Development of genetics; animal, plant and human examples. Text-book: Sinnott and Dunn, *Principles of Genetics*. Prerequisite: Biology 100. Mr. Hutchinson, Mr. Brink, Mrs. Brink. [2-2; 2-2]

331. (2) Principles of Forest Genetics.—As Biology 330, adapted for Forestry. Department to be consulted. Prerequisite: Biology 100. Mr. Hutchinson, Mr. Allen, Mrs. Brink. [0-0; 2-4]

400. (3) General Physiology.—Nature of animal and plant life processes. Text-book: Mitchell, *General Physiology*. Laboratory Manual: Zoethout, *Laboratory Experiments in Physiology*. Prerequisites: Biology 100, Chemistry 100 or 101, Physics 100 or 101. Mr. Allardyce. [2-3; 2-3]

430. (3) Seminar in Genetics.—Review of advanced phases and more recent developments in genetics. Prerequisite: Biology 330. Two hours a week and essays. Mr. Hutchinson, Mr. Brink, Mrs. Brink.

431. (3) Research in Genetics.—An introduction to genetical methods and investigations. Students interested in plant breeding may elect Agronomy 500 as an equivalent of this course. For students majoring in

Genetics. Prerequisite: Biology 330. Mr. Hutchinson, Mr. Brink, Mrs. Brink. [2-5; 2-5]

448. (1-3) **Directed Studies**.—In special cases and with the approval of the Department a student in attendance may carry on directed studies to supplement another course in the Department.

449. (3) **Graduating Essay**.—Students should consult the Department during the Third Year.

500. (3) **General Physiology Problems**.—Physiological controls with particular reference to vitamins and hormones. Prerequisite: Biology 400. Mr. Allardyce. [2-2; 2-2]

501. (3) **General Physiology: Respiration and Metabolism**.—A comparative study. Prerequisite: Biology 400 or Zoology 404. Mr. Black. [1-5; 1-5]

502. (3) **General Physiology: Recent Advances**.—Seminar. Prerequisite: Biology 400. Mr. Allardyce. [1-4; 1-4]

530. (3) **Advanced Genetics**.—Prerequisite: Honours or a major in Genetics. The Department is to be consulted.

540. (3) **Advanced Cytology**.—Physical basis of genes and gene mutations; preparation, examination, interpretation, and analysis of euchromatic and heterochromatic phases; membranes; plastids, food bodies, vacuoles. Prerequisites: Biology 330, and either Botany 340 or Zoology 303. Mr. Hutchinson. [1-6; 1-6]

Botany

For Honours and major requirements see pages 101, 107.

Botany 200 is prerequisite to all other courses in Botany, and for Honours in Zoology.

200. (3) **General Botany**.—General perspective of the plant kingdom, physiological anatomy, ecological relations, and developmental trends. Text-book: Hill, Overholts, and Popp, *Botany*. Prerequisite: Biology 100. Mr. Taylor. [3-2; 3-2]

303. (2) **Dendrology**.—Identification and distribution of North American trees, designed particularly for Forestry students. Text-book: Harlow and Harrar, *Textbook of Dendrology*. Prerequisite: Botany 200. Mr. Taylor. [0-4; 0-4]

304. (3) **Introduction to Systematics of Vascular Plants**.—Text-book: Pool, *Flowers and Flowering Plants*. Prerequisite: Botany 200. Mr. Taylor. [1-4; 1-4]

310. (2) **Phylogenetics**.—The origin and development of plant groups. Prerequisite: Botany 200. Mr. Krajina. [2-4; 0-0]

312. (3) **Bryology**.—Mosses and liverworts. The systematic, anatomical and ecological phases. Prerequisite: Botany 200. Mr. Krajina. [1-4; 1-4]

315. (3) **Mycology**.—Taxonomy of fungi. Prerequisite: Botany 200. Mr. Dickson. [1-4; 1-4]

316. (2) **Plant Pathology (Elementary)**.—Basic concepts of plant disease and plant disease control. Text-book: Heald, *Introduction to Plant Pathology*. Prerequisite: Botany 200. Mr. Dickson. [0-0; 2-4]

318. (3) **General Forestry Pathology**.—Life histories, control, and economics of diseases in relation to forest trees and forest products in Western North America. Text-book: Boyce, *Forest Pathology*. Prerequisite: Botany 200. Mr. Buckland. [2-2; 2-2]

330. (2) **Plant Physiology**.—Introduction to physiological processes of plants. Photosynthesis, transpiration, absorption, enzymes, respiration,

plant hormones, and growth. Text-book: Meyer and Anderson, *Plant Physiology*. Prerequisite: Botany 200. Mr. Wort. [2-4; 0-0]

340. (2) Histology.—The structure and development of plant tissues and cells; methods of preparation; examination, and interpretation of tissues. Text-books: Eames and McDaniels, *Introduction to Plant Anatomy*; Sorensen, *Plant Microtechnique*. Prerequisite: Botany 200. Mr. Hutchinson. [0-0; 2-4]

341. (2) Microscopic Pharmacognosy.—Preparation; examination. In conjunction with Botany 340. Text-book: Wallis, *Practical Pharmacognosy*. Mr. Hutchinson. [0-0; 2-4]

411. (2) Phycology.—A basic course on Algae. References: Smith, *Freshwater Algae of the United States*; Fritsch, *The Structure and Reproduction of the Algae*, Vols. I, II. Prerequisite: Botany 200. Mr. Davidson, Mr. Hutchinson. [0-0; 2-4]

418. (3) Applied Forest Pathology.—Laboratory and field techniques in handling forest pathological problems. Text-book: Boyce, *Forest Pathology*. Prerequisite: Botany 318, 315 or 316. Mr. Buckland. [1-4; 1-4]

420. (3) Forest Ecology and Geography.—Interrelations of forest trees and their environment; forest types and regions. References: Weaver and Clements, *Plant Ecology*; Halliday, *A Forest Classification for Canada*; Oosting, *The Study of Plant Communities*; Daubenmire, *Plant Ecology*. Two lectures and one period of field and practical work a week. Field trips. Mr. Pillsbury. [2-3; 2-3]

421. (3) Forest Associations.—The basis of forest sociological units. Prerequisites: Botany 303 and Biology 320 or Forestry 250. Mr. Krajina. [2-3; 2-3]

430. (2) Synthetic Processes of the Plant; Anabolism.—A study of constructive metabolism and related processes—absorption, translocation, synthesis of carbohydrates, fats, proteins, and derivatives. References: Miller, *Plant Physiology*; Gortner, *Outlines of Biochemistry*. Prerequisites: Botany 330, Chemistry 300. Mr. Wort. (Given in 1951-52 and alternate years). [0-0; 2-4]

431. (2) Plant Enzymes and Catabolism.—Plant enzymes, digestion, and respiration. Prerequisites: Botany 330, Chemistry 300. Mr. Wort. (Given in 1950-51 and alternate years). [0-0; 2-4]

448. (1-3) Directed Studies.—In special cases and with the approval of the Department a student in attendance may carry on directed studies to supplement another course in the Department.

449. (3) Graduating Essay.—Students should consult the Department during the Third Year.

500. (1) General Botanical Seminar.—Required of all graduate students in the Department.

503. (3) Systematics of Woody Plants.—Before registration in this course students are required to collect at least 75 species of woody plants. Part of the laboratory mark for the course is assigned to this collection. Prerequisite: Botany 303 or 304. Mr. Taylor. (Given in 1950-51 and alternate years). [1-4; 1-4]

504. (3) Systematics of Flowering Plants.—Before registration in this course students are required to collect at least 150 species of flowering plants. Part of the laboratory mark for the course is assigned to this collection. Prerequisite: Botany 304. Mr. Taylor. (Given in 1951-52 and alternate years). [1-4; 1-4]

514. (1) History of Plant Pathology.—The history of the science from ancient times to the present. Text-book: Whetzel, *An Outline of the History of Phytopathology*. Prerequisites: Botany 315 and 316. Mr. Dickson. [1-0; 1-0]

516. (3) Plant Pathology (Advanced).—For Honours or graduate students. Technique, isolation, and culture work; inoculations; progress of plant diseases; detailed study of control measures. Text-book: Rawlins, *Phytopathological Methods*. Prerequisites: Botany 315 and 316. Mr. Dickson. [1-4; 1-4]

517. (1-3) Problems in Forest Pathology.—Research work of an original nature designed to meet the individual student's particular needs. Prerequisite: Botany 418 or equivalent. Hours in consultation with the Department. Mr. Buckland.

518. (3) Advanced Forest Pathology.—Detailed study of life histories and economics of forest tree diseases; pathology of forest products. Prerequisite: Botany 318 or equivalent. Mr. Buckland. [2-2; 2-2]

519. (1) Seminar on Plant Virus Diseases.—Required of all Honours and graduate students in plant and forest pathology. [1-0; 1-0]

520. (3) Problems in Plant Ecology.—Prerequisite: Biology 320 and 3 units additional in Ecology. The Department. [1-4; 1-4]

534. (2) Plant Microchemistry.—Isolation and identification of organic and inorganic substances in plant tissues, by microtechnical methods. Prerequisite: Botany 330. Desirable antecedent: Chemistry 300. Mr. Wort. (Given in 1950-51 and alternate years). [0-0; 2-4]

535. (2-3) Problems in Plant Physiology.—Recent advances in biophysical and biochemical aspects of plant life. Original investigation of a problem is expected. Prerequisites: Botany 330, Chemistry 300, Physics 100 or 101. Mr. Wort. (Given in 1951-52 and alternate years). [0-0; 2-4]

Evening and Short Courses in Botany

Open to all interested in the study of plant life of the Province. Illustrative material from the flora of British Columbia. Classes meet every Tuesday evening during the University session. A detailed statement is issued as a separate circular. Copies may be obtained on request from this or the Extension Department.

Chemistry

For Honours courses in Chemistry, see pages 101 and 107.

100. (3) General Chemistry.—Designed to follow Chemistry 91 and primarily for science and engineering students. Fundamental theories, periodic table, inorganic reactions, chemical calculations. Text-book: Laubengayer, *General Chemistry*. Prerequisites: University Entrance Chemistry 91, and Mathematics 101. The latter may be taken concurrently. [3-3; 3-3]

101. (3) General Chemistry.—For students with no previous chemistry. The basic topics of Chemistry 91 precede the material in Chemistry 100. Mathematics 101 must precede or be taken concurrently. Text-book: same as for Chemistry 100. [4-3; 4-3]

200. (3) Quantitative and Qualitative Analysis.—Principles of chemistry with special emphasis on analytical procedures; reactions of the common ions; ionic equilibria in solution. Text-books: Hamilton and Simpson, *Talbot's Quantitative Analysis*; Curtman, *Introduction to Semimicro Qualitative Analysis*. Prerequisite: Chemistry 100 or 101. [2-6; 2-6]

205. (3) Inorganic and Analytical Chemistry.—A course with less analysis than in Chemistry 200. Properties and reactions of inorganic compounds correlated by the Periodic Table, redox potentials and analytical procedures. Reference: Latimer and Hildebrand, *Reference Book of Inorganic Chemistry*. Prerequisite: Chemistry 100 or 101. Credit will not be given for both Chemistry 200 and 205. [2-3; 2-3]

210. (3) Elements of Organic Chemistry.—A general survey with reference to applications. Text-book: Lowry, Harrow and Apfelbaum, *An Introduction to Organic Chemistry*. Laboratory text-book: Boord, Brode and Bossert, *Laboratory Outlines and Notebook for Organic Chemistry*. Prerequisite: Chemistry 100 or 101. Credit will not be given for both Chemistry 210 and 300.

[2-3; 2-3]

300. (3) Organic Chemistry.—Fundamental principles as illustrated by the main classes of organic compounds in the aliphatic and aromatic series. Text: to be announced. Laboratory Manual: Wertheim, *A Laboratory Guide for Organic Chemistry*. Prerequisite: Chemistry 200.

[3-3; 3-3]

304. (3) Physical Chemistry.—Theory and chemical properties of gases, liquids and solids; thermodynamics; solutions of non-electrolytes and electrolytes. Text-book: to be announced. Prerequisites: Chemistry 200 (except for students taking Honours in Physics) and Mathematics 202. Mathematics 300 concurrently is recommended.

[2-3; 2-3]

305. (2) Same as Chemistry 304 with the omission of the laboratory.

[2-0; 2-0]

310. (3) (a) Advanced Quantitative Analysis; (b) Advanced Qualitative Analysis.

(a) The more difficult estimations in analysis of rocks and 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. Text-book: Vogel, *Quantitative Analysis*; or Treadwell-Hall, *Quantitative Analysis*, Vol. II. Prerequisite: Chemistry 200.

[2-6; 0-0]

(b) Detection and separation of the less common metals, particularly those that are important industrially. Text-book: Vogel, *Qualitative Analysis*; or Treadwell-Hall, *Analytical Chemistry*, Vol. I. References: Noyes and Bray, *Qualitative Analysis of the Rarer Elements*; McAlpine and Soule, *Qualitative Chemical Analysis*.

[0-0; 2-6]

350. (3) Introduction to Chemical Engineering.—As in Applied Science.

[3-3; 3-3]

407. (3) Advanced Physical Chemistry.—A continuation of Chemistry 304. Thermochemistry; chemical thermodynamics; elementary statistics; electrochemistry; atomic structure; kinetics of reactions; catalysis and surface chemistry. Text-book: Glasstone, *Text-book of Physical Chemistry*. Prerequisites: Chemistry 304; Mathematics 300, which may be taken concurrently.

[3-4; 3-4]

409. (1½) Qualitative Organic Analysis.—Systematic identification of organic compounds and functional group reactions. Text-book: Shriner and Fuson, *Identification of Organic Compounds*. Prerequisite: Chemistry 300.

[1-6; 0-0]

410. (1½) Organic Reactions.—Continuation of Chemistry 300. Alicyclic; carbocyclic and heterocyclic compounds, mechanism of organic reactions. Text-book: to be announced. Prerequisite: Chemistry 300.

[0-0; 2-3]

411. (1) History of Chemistry.—Survey of chemical knowledge from the earliest times to the present day, with emphasis on chemical theory. Note: this course is open only to students taking Chemistry 407 and 409.

[2-0; 0-0]

For Fourth Year or Graduate Students

412. (2) Physical Inorganic Chemistry.—Chemical properties of elements and their compounds from the point of view of simple atomic and molecular structure. Reference: L. Pauling, *Nature of the Chemical Bond*.

[2-0; 2-0]

425. (3) Outlines of Biochemistry.—General chemistry and reactions of cells and tissues. Text-book: to be announced. Prerequisites: Chemistry 300, or a satisfactory grade in Chemistry 210. [2-3; 2-3]

449. (3) Thesis.—Experimental, under the direction of a staff member.

458. (3) Electrochemistry.—As in Applied Science. [2-3; 2-3]

505. (1) Theory of the Chemical Bond.—Principles of quantum mechanics as applied to chemistry. The hydrogen molecule. Simple diatomic molecules. Hybrid orbitals and their relation to structural chemistry. Investigation of molecular structure by the method of molecular orbitals, as applied to polyatomic molecules. Reference: Eyring, Walter and Kimball, *Quantum Chemistry*.

509. (1) Seawater Analysis.—Standard methods for the chemical analysis of seawater; salinity, oxygen, carbondioxide, nutrient salts. [1-3; 0-0]

510. (1) Chemistry of Seawater.—Properties, reactions, and constitution of seawater. [0-0; 2-6]

512. (1) Colloid Chemistry.—Principles in the preparation and behaviour of disperse systems, including adsorption, catalysis, lyophobic and lyophilic systems.

515. (1) Advanced Electrochemistry.—Modern measurements of conductance, transport and electromotive force; Debye-Huckel interionic attraction theory; theoretical interpretations of activity coefficients; dissociation constants; electrode processes; polarography. Prerequisite: Chemistry 407. [1-0; 1-0]

517. (1) Chemical Thermodynamics.—First, second, and third laws; derivation of fundamental equations and their application to the gas laws; chemical equilibrium, theory of solutions, electrochemistry, and capillarity. Text-book: Glasstone, *Thermodynamics for Chemists*.

518. (1) Advanced Inorganic Chemistry.—Properties of the elements considered in relation to the Periodic Table. Includes a study of the less common elements. Prerequisites: Chemistry 200 and 304. Reference: Hopkins, *Chemistry of the Rarer Elements*.

519. (1) Radiochemistry.—Natural and artificial radioactive elements, nuclear reactions, trans-uranic elements, tracer techniques and applications. Text-book: Friedlander and Kennedy, *Introduction to Radiochemistry*. Prerequisites: Mathematics 202, Chemistry 407. The latter may be taken concurrently and Mathematics 302 is recommended.

520. (1) Molecular Structure.—Physical methods for elucidating molecular structure. Prerequisite: Chemistry 407.

521. (1) Statistical Mechanics.—Fundamentals are developed and applied to the calculation of thermodynamic functions from molecular spectra. References: Gurney, *Statistical Mechanics*; Glasstone, *Theoretical Chemistry*.

522. (1) 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*. Prerequisite: Chemistry 407.

523. (1) Chemical Kinetics.—Kinetic theory, chemical equilibria, collision phenomena and activation, chain reactions, heterogeneous processes, reactions in solution, aspects of modern theories of absolute reaction rates. Text-books: Hinshelwood, *The Kinetics of Chemical Change*; Moelwyn-Hughes, *Kinetics of Reactions in Solution*. Reference Texts: Steacie, *Atomic and Free Radical Reactions*.

525. (1) Physical Organic.—Theory of resonance and applications, role of structure in chemical reactions and chemical equilibrium, acid-base rela-

tionships and reaction mechanisms. Text-book: Hammett, *Physical Organic Chemistry*. Prerequisites: Chemistry 300, 407. Chemistry 407 may be taken concurrently.

526. (1) Physical Chemistry of High Polymers.—Nature and kinetics of vinyl and condensation polymerization; molecular weight determination; introduction to kinetic theory of rubber elasticity; relation between mechanical properties and gross molecular structure. Text-book: C. E. H. Bawn, *The Chemistry of High Polymers*. Prerequisite: Chemistry 407.

530-539. Advanced Organic Chemistry.—Individual discussions of selected subjects; courses offered in any year will be announced prior to the session.

531. (1) Stereochemistry.

532. (1) Heterocyclic Compounds and Alkaloids.

533. (1) Carbohydrates.

534. (1) Conjugated Systems and Aromatic Character.

535. (1) Polynuclear Hydrocarbons.

536. (1) Isoprenoid Compounds.

537. (1) Antibiotics.

540. (1) Organic Analysis.—Macro, semi-micro and micro methods of analysis. [0-3; 0-3]

541. (1) Intermediary Metabolism I.—Carbohydrate metabolism by cells and tissues. Text-book: Baldwin, *Dynamic Aspects of Biochemistry*. Prerequisite: Chemistry 425.

542. (1) Intermediary Metabolism II.—As in 541 except that fats and proteins will be considered. Text-book: Same as 541. Prerequisite: Chemistry 425.

548. Research Conference.—Attendance and presentation of a paper is required in each year of registration for the M.A. in chemistry. No unit value.

549. (6) Master's Thesis.—Experimental, under direction of a staff member.

Commerce

It will be noted that some of the courses are marked "Not given in 1950-51". These courses have been planned for future years and they will come into effect only as the growth of staff and facilities permit. Students planning their courses at the beginning of each year should consult the Department before registering so as to find out what new courses in their options may be available.

No student will be admitted to any Commerce course unless he has completed First Year Arts, or its equivalent, including Mathematics 101, English 100, 101, and a language.

251. (3) Fundamentals of Accounting.—Technique of account construction; preparation of financial statements; application of accounting principles to practical business problems; a consideration of corporation accounting; preliminary study of depreciation. Written assignments must be prepared for each class period, and one or two model sets of accounts are also required. Students may not register in Commerce 251 after the first two weeks without the permission of the instructor. 75 per cent. of the written assignments are required to qualify for the examination. Commerce 251 is a prerequisite to all other courses in Commerce. [3-0; 3-0]

352. (3) Accounting Analysis and Control.—More detailed examination of general accounting principles; analysis and interpretation of accounting statements with principles of valuation; study of accounting systems of

outstanding importance in British Columbia. Text-book: Johnson, *Intermediate Accounting*. Prerequisite: Commerce 251. [3-0; 3-0]

361. (3) Marketing.—Methods and channels of distribution of consumer and industrial goods; merchandising problems. Discussion of cases from actual business. Written reports on assigned cases. 75 per cent. of the written assignments required to qualify for the examination. Text-books: McNair and Hansen, *Problems in Marketing*; Phillips and Duncan, *Marketing, Principles and Methods*. [3-0; 3-0]

443. (3) Transportation Practices and Policies.—Management problems in railway, waterway, highway, and airway transportation; various regulations, documents, and rate structures of the different modes of transport. Reports are required. Assigned readings. Prerequisite: Economics 405. [3-0; 3-0]

453. (3) Advanced Accounting.—Study of financial problems of corporations, including consolidations, depreciation, and income determination in general. Text-book: Kerrenbrock and Simons, *Advanced Accounting*. Prerequisite: Commerce 352 with Second Class standing. [3-0; 3-0]

461. (3) Fundamentals of Advertising.—Principles and techniques in printed and oral advertising, comparative value of media, functions of advertising agencies, planning of advertising campaigns from the viewpoint of the business executive. Case method is used. Text-book: Borden, *Problems in Advertising*. Prerequisite: Commerce 361. [3-0; 3-0]

463. (3) Sales Management.—Prerequisite: Commerce 361. (Not given in 1950-51). [3-0; 3-0]

471. (3) Business Finance.—Problems of financing business concerns, including promotion, types of organization, provision of long-term and short-term capital, financial statement analysis, involvements, public policy towards corporations. Case method used where possible. Text-book: Guthmann and Dougall, *Corporate Financial Policy*. Assigned readings. [3-0; 3-0]

481. (3) Industrial Management. — Case method is used to determine organization and management of manufacturing concerns. Course covers control of raw materials, plant and equipment. Class discussion and written reports are of prime importance. Text-book: Folts, *Introduction to Industrial Management*. [3-0; 3-0]

491. (3) Commercial Law.—Principles of company law and 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. [3-0; 3-0]

533. (3) Foreign Trade Problems.—Methods, policies and routine practice in the serving of foreign markets, discussion of business cases. Field work and a major report required. Text-book: Horn, *International and Trade Practices*. References: *Commercial Intelligence Journal*, and assigned readings. [3-0; 3-0]

544. (1½) Airline Traffic Problems.—Study of the major airlines of Canada and the United States. Special consideration of the development of air express and air freight traffic in Canada. Actual business cases discussed. Major report required. Text-book: Frederick, *Commercial Air Transportation*. Prerequisite: Commerce 443. [3-0; 0-0]

545. (1½) Motor Highway Transport Problems.—Detailed consideration of the motor transport industry in Canada, emphasizing regulation, classification, and tariffs of motor carriers. Major report required. Assigned readings. Prerequisite: Commerce 443. [0-0; 3-0]

553. (3) Cost Accounting.—Application of accounting principles to the internal operations of a business to provide management control of labour, machines, materials, and overhead. Text-book: Blocker, *Cost Accounting*. Prerequisite: Commerce 352. (Second Class standing). [3-0; 3-0]

554. (1½) Auditing.—Duties and responsibilities of the auditor; study of auditing theory and practice, emphasizing internal control. Text-book: Hanson, *Auditing Theory and Its Application*. References: Smails, *Auditing*; Montgomery, *Auditing Theory and Practice*. Prerequisite: Commerce 352. (Second Class standing). [0-0; 3-0]

555. (1½) Municipal and Government Accounting.—Accounting principles and procedures for governmental bodies; controls obtained by use of funds and budgets; presentation of financial statements. Text-book: Chatters and Tenner, *Municipal and Governmental Accounting*. Assigned readings. Prerequisite: Commerce 352. (Second Class standing). [3-0; 0-0]

563. (1½) Retail Store Management (with major report). Prerequisite: Commerce 463. (Not given in 1950-51).

564. (1½) Advanced Advertising Problems.—Professional and technical aspects of advertising presented in lectures by visiting experts; panel discussions; major report on a current advertising problem of some firm. For students professionally interested in advertising. Assigned readings. Prerequisite: Commerce 461. [0-0; 3-0]

565. (1½) Market Analysis and Research.—Uses, methods and techniques of market analysis. Field work, entailing schedule construction, sampling, field testing, editing and tabulation required with major report. Assigned readings. [3-0; 0-0]

583. (3) Personnel Management and Labour Relations.—First Term—Current personnel policies and mechanisms, their practical application in industry. Second Term—Collective bargaining in industry with inter-relations of employee, management, and government. Major reports. Text-book: Pigors and Myers, *Personnel Administration*. Prerequisites: Commerce 481, Economics 325. [3-0; 3-0]

584 (1½) Production Practices and Controls.—Advanced study of methods used in planning and controlling factory operations; incentive wage systems; major report. Text-book: to be announced. Prerequisite: Commerce 481. [0-0; 3-0]

585. (1½) Industrial Procurement.—Principles and methods used in the purchase, handling, and storing of raw materials of industry; major report. Text-book: to be announced. Prerequisite: Commerce 481. [3-0; 0-0]

593. (3) Executive Problems.—Case course to correlate various courses of previous years to show the interrelation of the various aspects of a business and to give practice in solving its over-all problems. Periodic written reports. Prerequisites: Commerce 471, Commerce 491. [3-0; 3-0]

594. (3) Business Planning and Budgetary Controls and Income Tax.—A Fifth Year course dealing with the annual preparations and estimates for the planned over-all conduct of a business. Prerequisites: Commerce 471, Commerce 491. [3-0; 3-0]

599. (3) Thesis.—Students whose choice of courses does not entail two or more major reports in their Fourth and Fifth Years will be required to submit a thesis on some business topic chosen in consultation with the Head of the Department and with members of the staff. Where major reports are written in conjunction with the advanced courses they will be identified with the thesis requirement and if considered satisfactory will be granted due credit.

(The following course is not available to Commerce students.)

259. (1½) **Accounting and Food Control for Home Economics.**—Principles of bookkeeping, with application to problems of the dietitian. Construction and use of supplementary records and forms used in controlling food costs. Text-book: Radell, *Accounting and Food Control*. [0-0; 2-2]

(Courses 359, 369, 499 are available only to students registered in the Faculty of Pharmacy.)

359. (1) **Drug Store Accounting.**—Fundamental accounting methods and procedures with special attention to the small retail drug store. Text-book: Heckert and Dickerson, *Drug Store Accounting*. [2-0; 0-0]

369. (1) **Drug Store Merchandising and Management.**—Commercial problems common to average retail pharmacies, including store location and arrangement, stock control, display, and advertising. Text-book: Nolen and Maynard, *Drug Store Management*. [0-0; 2-0]

499. (3) **Advanced Drug Store Management.**—Forms of business organization, commercial law, marketing of drug products, advertising, problems of retail operations. Seminars with leaders from staff members and professional experts. [3-0; 3-0]

559. (2) **Industrial Accounting.**—Designed for students with scientific training. The course gives a firm foundation in accounting principles and the use of accounting in controlling and measuring operating results. Text-book: Specthrie, *Industrial Accounting*. Prerequisite: Economics 200. [2-0; 2-0]

(The following course is not available to Commerce students.)

569. (1) **Industrial Marketing.**—A general survey of the problems of distribution of basic materials to industry. [1-0; 1-0]

589. (1) **Industrial Problems.**—Survey of the problems of marketing, production and management in industry. Text-book and assigned readings to be announced. Prerequisite: Economics 200. [1-0; 1-0]

Economics

For Honours courses in the Department see pages 102, 107.

Economics 200 is a prerequisite for all other Economics courses except 100 and 140. Credit will not be given for both Economics 140 and 200.

100. (3) **Economic History of Europe.**—Influence of natural resources, climate, geography, discoveries, inventions, enterprise, investment, labour and government on the development of Europe from primitive times to the present day. Prerequisites: None. Text-book: Heaton, *Economic History of Europe*. Mr. Clark. [3-0; 3-0]

140. (3) **Introduction to Political Economy.**—A terminal course in fundamental economic concepts for students who do not propose to qualify for other courses in Economics. Nature of wealth; its production, accumulation, and exchange with particular reference to the framework, institutions and problems of the Canadian economy. Prerequisites: None. Text-book: Bladen, *An Introduction to Political Economy*. Mr. Merritt. [3-0; 3-0]

200. (3) **Principles of Economics.**—The agencies, institutions and processes involved in providing for society's material well-being; division of labour and exchange; roles of money, prices and profits; determinants of income, employment, and the standard of living. Prerequisites: First Year standing; Mathematics 101 (may be taken concurrently). Text-books:

Logan and Inman, *A Social Approach to Economics*; Burns, Neil and Watson, *Modern Economics*; and another to be announced. Mr. Crumb and Mr. Jamieson. [3-0; 3-0]

300. (3) Money and Banking.—The origin and development of money, credit, and banking and the economic functions performed by commercial, savings, agricultural, and central banks in the world's principal countries. Foreign exchange, international banks; determinants of purchasing power; central banks as instruments of economic control. Text-books: Thomas, *Our Modern Banking and Monetary Systems*. References: James, *The Economics of Money, Credit and Banking*; Crumb, *Lessons in Money and Banking*. Mr. Crumb. [3-0; 3-0]

301. (3) Advanced Economic Analysis.—Theoretical foundations of economics with particular reference to the determinants of value; indifference; the concept of equilibrium; factor compensation. Prerequisites: Second Class standing in Economics 200. Text-book: Boulding, *Economic Analysis*. References: Stigler, *The Theory of Price*; Kierstead, *Essentials of Price Theory*. Mr. Drummond or Mr. Crumb. [3-0; 3-0]

310. (3) International Trade.—The mechanism of international trade and finance with particular reference to exchange rate determination and trade policy. Price levels, purchasing power parity; government control of exchange rates; gold versus paper standards; protection and free trade; international cartels and monopolies; trade treaties and international agreements. Text-book: to be announced. Reference: Haberler, *The Theory of International Trade*. Mr. Drummond or Mr. Jamieson. [3-0; 3-0]

320. (3) Government Finance.—Role of government. Theories of justice in taxation; characteristics of a good tax system. Principal expenditures and revenues of federal, provincial and municipal governments. Constitutional financial problems. Valuation of property; income and property taxes; succession duties. Dominion-Provincial fiscal relations; public borrowing and deficit financing. Mr. Clark. [3-0; 3-0]

325. (3) Labour Economics and Labour Problems.—Labour problems arising out of the factory system and large-scale enterprise; insecurity, unemployment and discrimination; working conditions, hours and wages. History, structure and functions of trade unions; employers' policies and associations; collective bargaining and industrial conflict; labour legislation and political action. Text-book: Lester, *Economics of Labour*. Reference: Bakke and Kerr, *Union Management and the Public*. Mr. Jamieson. [3-0; 3-0]

330. (3) History of Economic Thought.—Contributions of classical scholars, churchmen, philosophers and business-men to the development of economic ideas; the Mercantilists, Physiocrats, Cameralists; the work of Adam Smith; the distinguishing characteristics and the modern counterparts of the Classical, Historical, Socialist, and Marxian economic doctrines. Immediate background and present emphases of economics. Text-book: Gray, *The Development of Economic Doctrine*. Mr. Clark. [3-0; 3-0]

335. (3) Statistics 1.—Averages; dispersion; skewness; the normal curve; chi-square; index numbers. Sampling; time series analysis; correlation. Applications to business problems, vital statistics, forestry and agriculture. Text-books: Mills, *Statistical Methods*; *Lessons in Lettering, Book I, Vertical Single Stroke*; Clark, *Laboratory Manual for Elementary Statistics*. Mr. Clark and Mr. Merritt. [3-2; 3-2]

401. (3) Business Cycles.—Analysis of the phenomena of recurrent periods of prosperity and depression. Theories of J. M. Keynes, D. H. Robertson, A. C. Pigou, F. Hayek, A. H. Hansen, J. A. Schumpeter,

R. G. Hawtrey, G. Haberler, Paul Sweezy, and others. Text-book: Haberler, *Prosperity and Depression*, Third edition. (May not be given in 1950-51).

[3-0; 3-0]

405. (3) Transportation.—Development of railway, highway, water, air and urban transportation agencies in Canada; theory and practice of rate-making; theory of the location of industry; governmental fixation of rates. Text-book: Jackman, *Economic Principles of Transportation*. Mr. Merritt.

[3-0; 3-0]

410. (3) Economic History of the United States and Canada.—Major economic developments and trends in the United States and Canada, from colonial times to the present. Text-books: Shannon, *America's Economic Growth*; Currie, *Canadian Economic Development*. Mr. Jamieson.

[3-0; 3-0]

435. (3) Statistics 2.—General theory of frequency curves; elementary theory of random sampling; advanced sampling problems; multivariate analysis. Recommended prerequisites: Second Class standing in Economics 335 and either Mathematics 200 or 202. Text-books: Smith and Duncan, *Elementary Statistics and Applications*, and *Sampling Statistics and Applications*. Mr. Drummond.

[2-2; 2-2]

440. (3) Honours Seminar.—Reports and group discussions under staff direction of important aspects of advanced economic study for Third Year Honours credit; credit requisite, Honours or graduate standing.

[2-0; 2-0]

441. (3) Honours Seminar.—Same as 440 for Fourth Year Honours and graduate credit; credit requisite, Honours or graduate standing.

[2-0; 2-0]

449. (3) Honours Essay. — Essay on some theoretical or institutional problem, to be selected in consultation with members of the departmental staff. Must be submitted in final form on or before the beginning of the examinations preceding the congregation at which the student expects to receive his degree.

500. (3) Contemporary Economic Theory.—The approach, major content and emphasis of contemporary economic thinking, with special reference to equilibrium, income analysis and employment theory. Prerequisites: Economics 301 or 400 and graduate standing. Text-books: Hicks, *Value and Capital*; Fellner and Haley, Editors, *Readings in the Theory of Income Distribution*. Mr. Crumb.

[3-0; 3-0]

540. (3) Master's Seminar.—Readings, consultations and reports on such phases of contemporary theory and institutional practices as may be designed to meet the needs of candidates for the Master's Degree in Economics. Credit requisite, graduate standing. May be held concurrently with the Honours seminars.

[2-0; 2-0]

549. (3) Master's Thesis.—A comprehensive treatment of some theoretical or institutional problem to be selected in consultation with the Departmental staff. Must be submitted in final form on or before the beginning of the examinations preceding the congregation at which the student expects to receive the degree.

Other Courses which Qualify for Economics Credit

Geography 201. (3): recommended for economic majors and Honours candidates as a foundational course shedding much light upon our economic institutions and arrangements.

Commerce 251. (3): recommended for Honours graduates contemplating careers as professional economists.

Commerce 471. (3): recommended for students interested in the financial organization of the economy.

Agricultural Economics 301. (3).

Agricultural Economics 500. (3).

Slavonic Studies 205. (3).

Slavonic Studies 312. (3).

Slavonic Studies 314. (3).

Education

Notes

1. Undergraduates who intend to proceed to the Teacher Training Course are required to take Psychology 100, and their attention is called to Philosophy 100, 304; Psychology 202, 301, 303; 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.

5. Psychology 301 may be counted as a course in Education.

Courses

500. (3) Principles of Education.

501. (3) Educational Psychology.

502. (3) School Administration and Law.

503. (1) Tests and Measurements.

504. (5) Methods.

1. **High School Subjects.**—Two of English, Social Studies, Latin, French, German, Mathematics, General Science, Agriculture, Geography, Home Economics.

2. **Additional Subjects.**—One of Art, Music, Health and Physical Education, Dramatics.

The Physical Education courses open are 504 and 506.

505. 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.

509. (3) High School Methods.—Methods of teaching two high school subjects. Not open to students who have taken the Teacher Training Course. One half credit for each subject.

510. (1½) Administration of School Systems.—Dominion participation in education; Provincial Department of Education; centralization and decentralization; school finance; local unit of administration.

511. (1½) Administration of the Elementary School.—Organization of elementary school; work of principal; participation of staff.

512. (1½) Administration of the Secondary School.—Programme of studies; administrative staff; guidance programme; co-curricular activities; construction of time table. Text-book: Koos and others, *Administering the Secondary School*.

513. (1½) Supervision.—Techniques for the improvement of instruction. Responsibilities of inspectors, supervisors, and principals.

520. (3) History of Education.—Development of educational theory from the time of ancient Greece to the present day.

521. (3) Philosophy of Education.—Current trends in educational philosophy; social implications of contemporary educational theories. Not open to students who have taken the Teacher Training Course.

522. (1½) The Secondary School.—Principles of secondary education. Modern developments of these in Canada and other countries.

523. (1½) Comparative Education.—Types and systems of schools, mostly in England, France, Germany, Russia, the United States, and Canada.

529. (3) Educational Psychology.—Understanding of the pupil, with special reference to the adolescent, the psychology of learning, the adjustment of learning situations to individual differences, and the evaluation of instruction. Not open to students who have taken the Teacher Training Course.

530. (3) Psychology of Learning.—Advanced course for students in Education and Psychology. Theories of learning; differential psychology. Prerequisite: Education 501 or 529, or equivalent.

531. (1½) Psychology of Childhood.—Mental, social, emotional, and physical characteristics of pre-school and elementary school pupils; their interests and problems; implications for organization and administration of school systems.

532. (1½) Psychology of Adolescence.—Junior and senior high school pupil as an individual and member of social groups; physical, mental, social, emotional, and religious development typical of adolescence.

533. (1½) Psychology of Exceptional Children.—Physical, mental, social, and emotional characteristics of exceptional children (gifted, backward, crippled, hard-of-hearing, etc.); suitable educational provisions.

534. (1½) Psychology of the School Subjects.—Educational psychology concerned with classroom subject-matter activities.

535. (3) Evaluation.—Basic principles; tests and other instruments for measuring instruction.

536. (1½) Individual Tests.—Administration, scoring, interpreting, and values of Revised Stanford Binet, Wechsler-Bellevue, etc.; nature of intelligence; constancy of the IQ, etc. First Term.

537. (1½) Standardized Group Tests.—Group tests of achievement, intelligence, personality, interests, aptitudes, and attitudes. Not for students who have taken Education 535. Second Term.

550. (1½) Introduction to Guidance.—Objectives: gathering and using information concerning students; counselling; articulation of different forms; contributions of teachers, principal, and specialists; analysis of typical guidance programmes.

551. (1½) Counselling Techniques.—For counsellors and teachers who are preparing for counselling.

560. (1½) Teaching in the Secondary School.—Modern techniques; socialized procedures; provision for individual differences through unit methods.

561 (1½) Diagnostic and Remedial Instruction.—Diagnostic point of view in education; causes of subject-matter disabilities; possible remedies, particularly in spelling, reading, and arithmetic.

565. (1½) Teaching of French.—Refresher course for both those who have and those who are working towards an Academic A certificate; includes practice in oral French.

570. (3) Educational Sociology.—Individual and social aims, the community and education, education and internationalism, social problems of administration and control.

580. (3) Problems in Education.—Investigation and report of a problem.

581. (1½) Methods of Educational Research.—Scientific method in education; discovering problems; types of research; standards in thesis writing; critical study of published research.

582. (1½) Educational Statistics.—Frequency distribution; measures of central tendency; measures of variability; normal probability curve and its applications; sampling; reliability; correlation, its meaning and application; partial and multiple correlation.

English

For Honours courses in English see pages 102 and 108.

Prerequisites

All students in the First Year are required to take English 100, 101. English 100, 101 or its equivalent in Senior Matriculation is prerequisite to English 200 or 205.

Students who have failed either part of English 100 and 101 will be required to repeat both parts. No further courses in English may be taken until both parts have been passed.

English 200 is prerequisite to English courses above 400 for all students proceeding to a B.A. degree.

Students not proceeding to a B.A. degree may offer English 205 instead of English 200 as a prerequisite to certain English courses in the 400 group.

Every student is required to own a good dictionary; e.g., "The Concise Oxford Dictionary", "The American College Dictionary", "Webster's Collegiate Dictionary", "The Winston Simplified Dictionary".

First Year

100, 101. (3) Literature and Composition.—Elementary study of the short story, the play, the essay, the simpler sorts of poetry. Elementary principles of composition. Themes and exercises are required. This course is not divisible, for purposes of credit, into two parts. Texts: *A Little Treasury of Modern Poetry*, ed. O. Williams; *Masters of the Modern Short Story*, ed. Havighurst; Shakespeare, *Antony and Cleopatra*; Shaw, *Saint Joan*; *Century Collegiate Handbook*, ed. Greever and Jones. [4-0; 4-0]

Second Year

200 (3) Literature.—From Chaucer to Browning. Essays are required. Texts: *The College Survey* (Shorter Edition), ed. Whiting, et. al.; Shakespeare, *Hamlet and Henry IV, Part I*; *Stories from Hakluyt*, ed. Wilson; Swift, *Gulliver's Travels*; Fielding, *Joseph Andrews*; Austen, *Pride and Prejudice*; Dickens, *Great Expectations*. [3-0; 3-0]

205. (3) English Composition and Literature.—Designed for students in the Faculty of Agriculture, and in Architecture, Commerce, Physical Education, Pharmacy, and Home Economics. Training in advanced composition, in research, and in the preparation of term papers and reports. Selected readings from various types of modern writing. Reports and essays are required. Texts: to be announced. [3-0; 3-0]

Third and Fourth Years

401. (3) Creative Writing.—Practice in imaginative writing, particularly the short story, familiar essay, and literary article. Enrolment will be limited. Applicants must write to Mr. Birney before September 1st. (Not given in 1950-51). [3-0; 3-0]

402. (3) Classics of European Literature.—(Not given in 1950-51).

405. (3) Poetics.—The imagination and the poetic process; the emotional element in poetry and the tests of value; the content of poetry and the nature of poetic truth; poetic form and its varieties, diction, imagery, tone-colour, and metrics. (Not given in 1950-51). [3-0; 3-0]

408. (3) Elizabethan Literature.—The lyric, the sonnet sequence, the pastoral, the prose romance, realistic prose and verse, literary criticism, the essay. Authors studied will include Sidney, Daniel, Drayton, Campion, Jonson, Bacon and Donne. The work of Spenser in detail. The King James version of the Bible and its influence will receive special attention. Texts: Hebel and Hudson, *Poetry of the English Renaissance*; *The Oxford Spenser*. [3-0; 3-0]

411. (3) The Drama to 1642.—Aristotle's theory of tragedy; certain influential Roman dramatists; miracle plays, morality plays, interludes; main emphasis upon Elizabethan drama, its development, culmination, and decline. Texts: Parks and Beatty, *The English Drama 900-1642*; *The Complete Works of Shakespeare*, ed. Kittredge; or the *New Cambridge Shakespeare*, ed. Neilson and Hill. [3-0; 3-0]

412. (3) Shakespeare.—A careful study of about six of the plays. [3-0; 3-0]

420. (3) The Drama Since 1660.—A survey of the chief developments of dramatic art from the Restoration to the present day. (Not given in 1950-51).

421. (3) Theatre Practice.—(a) Principles of acting, pantomime, interpretation of the role, acting scenes, participation in a play. (b) Breath control, tone quality, articulation, interpretation of the spoken line. (Given in 1950-51 and alternate years). [2-2; 2-2]

422. (3) History of the Theatre.—Western theatrical presentation from the Greek era to the present. Representative plays of important periods, with special emphasis upon the theatres, the art of the actors, scenic effects, styles of production, and dramatic theory. Students will participate in workshop presentations of plays. (Given in 1951-52 and alternate years). [3-0; 3-0]

425. (3) Seventeenth-century Literature.—Milton, with emphasis on *Paradise Lost*. The "metaphysical" school; mysticism; Puritanism and the arts; Baroque form; development of prose styles. Texts: *Poetical Works of John Milton*; Coffin and Witherspoon, *Seventeenth Century Prose and Poetry*. [3-0; 3-0]

426. (3) Eighteenth-century Literature.—From the Restoration to the end of the eighteenth century: the Age of Dryden, the Age of Pope, and the Age of Johnson. The significant authors are related to the broad cultural movements of the age. Text: to be announced. [3-0; 3-0]

427. (3) **The English Novel.**—From Richardson to Hardy. [3-0; 3-0]
428. (3) **American Literature to 1865.**—Emphasis is given to Franklin; Poe, Emerson, Thoreau, Hawthorne, and Melville. Canadian writings are included. Texts: Norman Foerster, *American Poetry and Prose* (3rd ed.); A. J. M. Smith, *The Book of Canadian Poetry* (rev. ed.). (Given in 1950-51 and alternate years). [3-0; 3-0]
429. (3) **American Literature Since 1865.**—Emphasis is given to Whitman, Clemens, James, Dickinson, Dreiser, Wolfe, Hemingway, and Eliot. Canadian authors are also studied. Texts: to be announced. (Given in 1951-52 and alternate years). [3-0; 3-0]
430. (3) **The Romantic Period.**—Chiefly Wordsworth, Coleridge, Byron, Shelley, and Keats. Text: Campbell, Pyre, and Weaver, *English Poetry and Criticism of the Romantic Movement*. [3-0; 3-0]
431. (3) **Victorian Poetry.**—Chiefly Tennyson, Browning, and Arnold. A few weeks devoted to later poetry. Text: Stephens, Beck, and Snow, *Victorian and Later English Poets*. [3-0; 3-0]
432. (3) **Victorian Prose.**—Mill, Ruskin, Carlyle, Newman, Arnold, Darwin, Huxley, and Butler. Texts: Mill, *Utilitarianism and Liberty*; Ruskin, *Unto This Last*; Carlyle, *Sartor Resartus*; *Heroes and Hero Worship*; *Past and Present*; Newman, *Apologia Pro Vita Sua*; *Idea of a University*, ed. Yardley; Arnold, *Representative Essays*, ed. Brown; *Literature and Dogma*; Darwin, *Origin of Species*, Chapter IV; Huxley, *Readings from Huxley*, ed. Rinaker; Butler, *Erewhon*. [3-0; 3-0]
433. (3) **Contemporary Literature.**—Outstanding writers of the present generation; literary developments in the essay, poetry, and fiction. Texts: Pence, *Essays of To-day*; Sanders and Nelson, *Chief Modern Poets of England and America*. [3-0; 3-0]
440. (3) **English Literature, 1100 to 1500.**—A study of the more important works in medieval English literature, with special emphasis on the work of Chaucer. [3-0; 3-0]
442. (2) **English Literature and Language, 700 to 1100.**—A survey of Old English Literature and an elementary study of the English language in Anglo-Saxon times. [2-0; 2-0]
443. (3) **Language.**—The vocabulary, syntax, accident, and phonology of English from the historical point of view. The development of modern English. [3-0; 3-0]
444. (1) **Bibliography.**—Sources and methods. [1-0; 1-0]
445. (3) **The Simpler Methods of Criticism and Investigation.** [3-0; 3-0]
448. (3) **Aesthetics.**—The problem of aesthetic value; the function of criticism. [3-0; 3-0]
449. (3) **Graduating Essay.**

Graduate Courses

500. (3) **History of Criticism.**—From Plato and Aristotle to the present. Emphasis upon English critics. [3-0; 3-0]
504. (3) **Poetic Drama.**—Dramatic form and blank verse technique from Marlowe to T. S. Eliot. [3-0; 3-0]

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. A student taking a B.Com. degree may be admitted to French 301 or 302 in lieu of French 300.

Attention of students is called to Linguistics 319.

For Honours courses in French see pages 103 and 108.

101. (3) Texts: Irvin and King, *Lectures intermédiaires*; Barton and Sirich, *Simplified French Review Grammar and Composition*. Prerequisite: University Entrance French or its equivalent. [3-0; 3-0]

202. (3) Texts: Flaubert, *Madame Bovary*; Cattànès & Robert, *Promenades littéraires et historiques*. Independent readings to include Buffum, *Stories from Balzac*. Composition in French based on the above readings, and from Barton and Sirich, *Simplified French Review Grammar and Composition*. Prerequisite: French 101 or its equivalent. One additional hour of conversational practice may be taken without credit. [3-0; 3-0]

203. (3) Instruction in the organization of work; training in speech and writing. Open to students preparing for Honours. Texts: Faguet, *Ce que disent les livres*; Hugo, *Prose et poésies*; Stendhal, *Le rouge et le noir*; Shields, *Parlons français*. [3-0; 3-0]

300. (3) Literature of the Age of Louis XIV.—History and social conditions; development of the literature. Texts: Schinz and King, *Seventeenth Century French Readings*; Corneille, *Le Cid*, or *Polyeucte*; Racine, *Iphigénie*, or *Andromaque*, or *Phèdre*; Molière, *Le Misanthrope*, or *Les Femmes savantes*, or *Le Tartuffe*. Essays based on the above. This course is obligatory for all students taking Third Year French. Prerequisite: French 202. 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 also take French 302. [3-0; 3-0]

301. (3) French Verse.—Forms of French verse and poetic diction from 1820. Exercises in scansion, rhythm, and harmony; analysis of language and composition. Texts: Berthon, *Nine French Poets*; Victor Hugo, *Oeuvres choisies*; Charles Marc des Granges, *Les poètes français 1820-1920*. Independent reading to include Vigny, *Eloa*; or Lamartine, *Joselyn*. See also, under "Summer Reading", Chateaubriand and Rivarol. For Honours students. [3-0; 3-0]

302. (3) 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. Texts: Coindreau and Loy, *Contes et nouvelles du temps présent*; Bond, *The Sounds of French*. [3-0; 3-0]

303. (3) Readings in the Social Sciences. — Reading and translation. Designed for Honours students in Economics, Political Science, and Sociology, and students expecting to take graduate courses in these subjects. Prerequisite: French 202. [3-0; 3-0]

400. (3) The Romantic Movement.—Romanticism, lyrical and social, in French literature; its significance in poetry and life. Texts: Victor Hugo, *Hernani*, *Ruy Blas*; Alfred de Vigny, *Chatterton*; Alfred de Musset, *Fantasio*. *On ne badine pas avec l'amour*. Independent readings include the plays of Marivaux, Voltaire, Sedaine, and Banville and the works of Chateaubriand and Bernardin de Saint-Pierre listed under "Summer Reading". References: Stewart and Tilley, *The Romantic Movement in French Literature*; Roger Picard, *Le Romantisme social*. Prerequisites: French 300 and 302. [3-0; 3-0]

401. (3) Literature of the Eighteenth Century.—History and social conditions, with emphasis on the "philosophe" movement, and the beginnings of Romanticism; interrelations of French and English thought and literature. Texts: Havens, *Selection from Voltaire*; Mornet, *Rousseau, Morceaux*

choisis; Fallex, *Diderot, Extraits*; Beaumarchais, *Le Barbier de Séville*. Prerequisites: French 300 and 301. [3-0; 3-0]

402. (3) **Educational and Administrative Institutions of Modern France.**—Oral and written practice, readings, and discussions. This course may be taken with French 400, but not in place of it. Prerequisite: French 302. [3-0; 3-0]

449. (6) **Graduating Essay.**—For Honours only.

Graduate Courses

501. (3) **The Middle Ages and XVIth Century.** — Texts: *Aucassin et Nicolette*; selected readings from Montaigne, Rabelais, and the poets of the Pléiade in *Anthologie littéraire de la Renaissance française*. [3-0; 3-0]

502. (3) **History of French Criticism.** — French literary criticism and theory, from the Pléiade to the present. Text-book: Vial-Denise, *Idées et doctrines littéraires*. [3-0; 3-0]

503. (3) **Contemporary French Literature.**—The poetic movement from Peguy to the Surrealists. Texts: Kra, *Anthologie de la nouvelle poésie française*; *Lectures expliquées* from Valéry, *Variété I*; Gide, *Pages de Journal*; Valéry Larbaud, *Amants, heureux amants*. Further readings to be specified. [3-0; 3-0]

549. (3-6) **Master's Thesis.**

Summer Reading

Upon entering the courses for the years stated, the student must satisfy the instructor that he has read the books mentioned below.

Third Year

1. Chateaubriand, *Atala, René*.
2. Madame de Staël, *De l'Allemagne*.
3. Rivarol, *Discours sur l'universalité de la langue française*.

Fourth Year

1. Marivaux, *Le jeu de l'amour et du hasard*.
2. Voltaire, *Contes*.
3. Voltaire, *Zaïre*.
4. Sedaine, *Le philosophe sans le savoir*.*
5. Bernardin de Saint-Pierre, *Paul et Virginie*.*
6. Banville, *Gringoire*.*

Note. Works marked with asterisk to be read by Honours students only.

Geography

Students intending to major or honour in Geography are required to take Geography 101 as prerequisite to all other courses in Geography. Geography 101 is one of the elective sciences on page 98, requirement in Note 4 (i) of the Calendar.

Note: Geology 305, Geology 412 and Slavonic Studies 205 are accepted as courses in Geography.

101. (3) **Elementary Physical Geography.** — Introductory course; the study of maps and map reading, land forms, processes of weathering, erosion, diastrophism, materials of the earth's crust, climate, and history of the earth; laboratory; elementary surveying and map making; interpretation of climatic, distribution and topographic maps; the study of common minerals, rocks and fossils. Text: Thompson, *Fundamentals of Earth Science*, 1947. Mr. Mackay. [3-2; 3-2]

201. (3) Human and Economic Geography.—An introductory course dealing with man and his occupations; the effect of physical environment upon the distribution of world population; the distribution of natural resources and problems of trade. Text: Bengston and Van Royen, *Fundamentals of Economic Geography*, 1950, or Case and Bergsmark, *College Geography*, 1949. Mr. Robinson. [3-0; 3-0]

202. (3) Weather and Climate.—Elementary study of weather phenomena; practical weather observations and recording; analysis of daily weather maps; climatic classification and description; distribution of climatic types. Additional work required of those wishing Third or Fourth Year credit. Text: Trewartha, *An Introduction to Weather and Climate*, 2nd edition, 1943. Mr. Chapman. [2-2; 2-2]

301. (3) Cartography and Map Reading.—Historical cartography, map projections, methods of showing relief, aerial photographs, distribution maps, statistical graphs and cartograms, and sources of maps; practical field mapping and methods of land utilization survey. Text: Raisz, *General Cartography*, 1948. Mr. Mackay. [2-3; 2-3]

303. (3) World Regional Geography.—Physical structure, resources, climate, population, transportation, and industry of the continents. Recommended for students taking only one course in Geography. Mr. Chapman. [3-0; 3-0]

306. (3) Natural Resources and World Affairs (Economic Geography).—Geographic basis of food supply, energy, natural resources, population, transportation, and trade. Mr. Warren, Mr. Griffith, Mr. Rowles. [2-2; 3-0]

307. (3) Human and Political Geography.—Influences of natural environment upon man; life and occupations of man in climatic regions such as the arctic, tropics, deserts, mountains; world population problems; boundary problems; development of geopolitics. Geography 201 should precede this course. Text: White and Renner, *Human Geography*, 1948, or Percy and Fifield, *World Political Geography*. Mr. Robinson. [3-0; 3-0]

406. (3) Geography of Asia.—Physical and human geography; topography, climate, resources, population distribution and industrial development. Special emphasis on the Soviet Union, India and Far East. Text: Cressey, *Asia's Lands and Peoples*, 1945. Mr. Mackay. [3-0; 3-0]

408. (3) Regional Geography of Europe.—Physical and human geography of Europe; climatic characteristics; development of resources; population; natural regions. Text: Shackleton, *Europe, A Regional Geography*, 3rd edition. Mr. Chapman. [3-0; 3-0]

409. (3) Geography of North America.—Regional geography with emphasis on Canada; physiography, climate, natural resources, population; primary industries. Text: Putnam, *Regional Geography of Canada*, 1950. Mr. Robinson. [3-0; 3-0]

445 (1½) Honours Seminar.—History, philosophy, scope and contents of geography; different fields of geography; professional opportunity. Required for all Third and Fourth Year Honours students. May be attended by senior majors without credit. [2-0; 2-0]

449. (3) Honours Essay.—Required for Fourth Year Honours students. Topic to be selected in consultation with the Department.

Primarily for Graduate Students

The following seminar courses are open to senior students with proper prerequisites and departmental permission.

501. (1½) Field Mapping and Cartographic Problems.—Field methods

with emphasis on population and land use mapping. The use of maps in research problems. Prerequisite: Geography 301. Mr. Mackay. [0-0; 2-2]

502. (1½) **Climatology**.—Advanced study in both theoretical and applied climatology. Prerequisite: Geography 202. Mr. Chapman. [2-2; 0-0]

503. (1½) **Problems in Canadian Geography**.—Research problems and discussion on certain geographic regions of Canada. Prerequisite: Geography 409. Mr. Robinson. [0-0; 2-2]

Geology

For Honours courses in Geology see pages 103, 108.

200. (3) **General Geology**. — Introductory course: "Physical Geology", including weathering, ground water, stream, glacier and wind action, the ocean and its work, earth structure, earthquakes, vulcanism, intrusions, metamorphism and mineral deposits; "Historical Geology" includes history of the earth and its life. Text: Longwell, Knopf, Flint, Schuchert, and Dunbar, *Outlines of Geology*, 1941. Students intending to continue in geology should purchase *Textbook of Geology*, Parts I and II, 1948, by the same authors instead of *Outlines of Geology*. Prerequisites: Chemistry 100 or 101 and Physics 100, 101, or 103 before or concurrently. Mr. Okulitch, Mr. White. [2-2; 2-2]

301. (1½) **Morphological Crystallography**.—Thirty-two crystal classes with reference to natural and artificial crystals; space lattices, symmetry elements, stereographic and gnomonic projections; optical activity, pyroelectricity and piezoelectricity in crystals. Prerequisites: Geology 200 or Second Class standing in Geography 101. Mr. Thompson. [2-2; 0-0]

302. (3) **Mineralogy**.—Elementary crystallography, physical, systematic, descriptive (and determinative) mineralogy of approximately one hundred rock-forming and ore minerals. Text: Dana, *Text-book of Mineralogy*, revised by Ford, 4th edition. Prerequisites: Geology 200, or Second Class standing in Geography 101. Mr. Warren, Mr. Thompson. [2-2; 2-2]

304. (3) **Structural Geology**. — Primary and secondary structures in rocks; practice in solving structural problems. Text: Lahee, *Field Geology*, 1941. Prerequisites: Geology 200; 302 concurrently. Mr. White. [3-0; 3-0]

305. (2) **Historical Geology**.—A brief study of the development of the geological sciences, and the historical geology of North America. Prerequisite: Geology 200. Mr. Gunning, Mr. Okulitch. [2-0; 2-0]

307. (1) **Petroleum and Natural Gas**.—Origin and occurrence of petroleum, natural gas and structural materials. Text: Bateman, *Economic Mineral Deposits*, 1942. Prerequisites: Geology 200; 302 concurrently. Mr. North. [1-0; 1-0]

308. (½) **Coal**.—Origin and occurrence of coal. Text: Bateman, *Economic Mineral Deposits*, 1942. Prerequisites: Geology 200; 302 concurrently. Mr. North. [1-0; 0-0]

406. (3) **Palaeontology**.—Invertebrate and vertebrate fossils, their classification, identification, and geological distribution. Text: Twenhofel and Shrock, *Invertebrate Palaeontology*. Prerequisites: Geology 200. Biology 100 and Zoology 200 are recommended. For students majoring or taking Honours in Zoology, a reading course in historical geology may be substituted for Geology 200. Mr. Okulitch. [2-2; 2-2]

407. (4) **Petrography**.—Systematic studies of (i) optical mineralogy and (ii) petrography, with an introduction to petrogenesis. Text: Tyrrell, *The Principles of Petrology*; Rogers and Kerr, *Optical Mineralogy*. Prerequisites: Geology 301, 302. Mr. Watson. [2-4; 2-4]

408. (3) Mineral Deposits.—Manner of occurrence, genesis, structure, and distribution of the principal metallic and non-metallic mineral deposits, with type illustrations. Text: Bateman, *Economic Mineral Deposits*, 1946. Prerequisites: Geology 302, 304; 403 or 407 must precede or accompany. Mr. Gunning. [3-0; 3-0]

409. (2) Mineralography.—Study and recognition of the opaque minerals by the reflecting microscope; practice in the cutting, grinding, and polishing of ore specimens, and micro-chemical methods of determination. Text: U.S. Geological Survey Bulletin 914, *Microscopic Determination of the Ore Minerals*; Edwards, *Features of the Ore Minerals*, 1947. Prerequisites: Geology 408 must precede or accompany this course. Mr. Warren, Mr. Thompson. [0-3; 0-3]

410. (1½) Field Geology.—Methods of observing, recording, and correlating geological facts in the field. The cost to each student may approach \$50. Text-book: Lahee, *Field Geology*, 4th edition, 1941. Prerequisites: Geology 302 and 304. Two hours a week in the Second Term and two to three weeks in the field at the close of examinations in the spring. Mr. White.

411. (3) Regional Geology.—Geology of Canada, and of the main geological features of the continental and oceanic segments of the earth. Text: *Geology and Economic Minerals of Canada*, Geological Survey of Canada, Economic Geology Series No. 1, 1947. Prerequisites: Geology 305; 304 must accompany or precede. Mr. Okulitch, Mr. White, Mr. North. [3-0; 3-0]

412. (3) Geomorphology.—For advanced students in geography and geology; a study of the processes, principals, and laws of land formation, types of land forms, and their distribution. Text: Hinds, *Geomorphology*, 1943. Prerequisite: Geology 304. Mr. North. [2-2; 2-2]

449. (3) Thesis.—Honours students must submit a graduating thesis on some subject approved by the Department.

520. (3) Sedimentation Seminar.—Text: Pettijohn, *Sedimentary Rocks*. Prerequisites: Geology 302 and 304. Mr. North. [2-2; 2-2]

521. (3) Problems in Palaeontology.—Seminar; alternates with 531. Prerequisite: Geology 406. Mr. Okulitch. [1-6; 1-6]

522. (1½) Advanced Mineralogy (Gems and Precious Stones).—Seminar; gem minerals and some of the more popular semi-precious stones. Text: Dana, *Text-book of Mineralogy*, revised by Ford, 4th edition; Smith, *Gemstones*. Prerequisites: Geology 301, 302. Mr. Warren, Mr. Thompson. [1-4; 0-0]

Note: Course 522 may be taken as an undergraduate course, subject to the approval of the Department.

523. (3) Advanced Mineralogy.—Seminar; some of the rarer minerals, particularly those of economic importance. Text: Dana, *Text-book of Mineralogy*, revised by Ford, 4th edition. Prerequisite: Geology 408. Mr. Thompson. [1-4; 1-4]

524. (3) Advanced Mineralography.—Study of some approved suite of ores, using polarized light, microchemistry, microphotography, "super-polisher", Geiger counter, etc. Text: U.S. Geological Survey Bulletin 914, *Microscopic Determination of the Ore Minerals*. Prerequisite: Geology 409. Mr. Warren, Mr. Thompson. [0-6; 0-6]

525. (3) Petrogeny.—Origin of igneous and metamorphic rocks. Seminar. Prerequisite: Geology 407. Mr. Watson. [2-2; 2-2]

526. (2-4) Mineral Deposits.—Seminar; character, origin, and structure of mineral deposits, with emphasis on ore deposits. Text: Lindgren, *Mineral Deposits*, 4th edition, 1933. Prerequisites: Geology 407, and 408. Mr. Gunning. [2-4; 2-4]

531. (3) Advanced Invertebrate Palaeontology.—Given in 1951-52, alternate with Geology 521. Selected groups of fossils, special problems of palaeontology, palaeontological techniques. Prerequisite: Geology 406. Mr. Okulitch. [1-6; 1-6]

German

For Honours courses in German see pages 103 and 108.

Attention of Third and Fourth Year students is called to Linguistics 319, page 159.

90. (3) Beginner's Course.—Greenfield, *An Outline of German Grammar*; Hagboldt, *Graded German Readers*, I-V, Alternate series. [4-0; 4-0]

100. (3) Texts: Russon, *Complete German Course*; Kastner, *Die verschwundene Miniatur*; Bruns, *Book of German Lyrics*. Second Term reader to be announced. Prerequisites: University Entrance or German 90. [3-0; 3-0]

101. (3) Scientific German.—Scientific German for students majoring in natural sciences; review of essentials in German grammar and composition. Text-books: Wild, *An Introduction to Scientific German*; Wild, *An Anthology of Scientific German*; Russon, *Complete German Course*. Prerequisites: University Entrance or German 90. [3-0; 3-0]

200. (3) Texts: Russon, *Complete German Course*; Werfel, *Jacobowsky und der Oberst*; Mann, *Tonio Kröger*; Keller, *Kleider machen Leute*; Bruns, *Book of German Lyrics*. Prerequisite: German 100 or 101 or the equivalent. [3-0; 3-0]

300. (3) The Classical Period.—Literature of the 18th century, with emphasis on Lessing, Goethe and Schiller. Text: Lessing, *Emilia Galotti*; Minna von Barnhelm; Nathan der Weise; Goethe, *Faust I*; Iphigenie; Schiller, *Die Jungfrau von Orleans*; Maria Stuart. [3-0; 3-0]

301. (3) The Novelle.—Development of the German Novelle, with emphasis on the 19th century. Texts: Fleissner, *Die Kunst der Prosa*; Röseler, *Deutsche Novellen des 19. Jahrhunderts*; Steinhauer, *Die Deutsche Novelle 1880-1933*; Coenen, *Auf höherer Warte*. Extensive independent reading will be expected. (Given in 1950-51 and alternate years). [3-0; 3-0]

302. (3) History of German civilization; intensive training in oral and written composition. Text: Jordan, *Deutsche Kulturgeschichte*. [3-0; 3-0]

303. (3) Survey of German literature to 1800.—Texts: to be announced. (Given in 1951-52 and alternate years). [3-0; 3-0]

400. (3) Nineteenth Century German Drama.—Text: Campbell, *German Plays of the Nineteenth Century*. [3-0; 3-0]

402. (3) Middle High German. — Text: Bachmann, *Mittelhochdeutsches Lesebuch*.

449. (3) Graduating Essay for the B.A.

500. (3) Lessing, Goethe, and Schiller.—Most important works. [3-0; 3-0]

501. (3) Nineteenth Century German Fiction.—Development of the German novel, with emphasis on 19th century. [3-0; 3-0]

502. (3) History of the German Language.—(Not given in 1950-51). [3-0; 3-0]

Greek

(Given by the Department of Classics)

For Greek in Honours courses see pages 101 and 107.

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 with at least Second Class standing, or Greek 101, or Senior Matriculation Greek.

90. (3) Beginners' Greek.—The elements of Attic Greek. Text-book: Crosby and Schaeffer, *An Introduction to Greek*. [4-0; 4-0]

101. (3) Introduction to Greek Prose Authors.—Text-books: White, *First Greek Book*, chap. XLIX-LXXX; North and Hillard, *Greek Prose Composition*; Robertson and Robertson, *The Story of Greece and Rome*, chap. I-XXXII. Text: Xenophon, *The First Four Books of Xenophon's Anabasis*, Goodwin and White. [4-0; 4-0]

202. (3) Greek Literature of the Classical Period.—Plato's account of Socrates' defence at his trial; a play of Aeschylus; practice in composition; brief survey of Greek literary history. Text-books: North and Hillard, *Greek Prose Composition*; C. M. Bowra, *Ancient Greek Literature*. Texts: Plato, *Apology*, Dyer and Seymour; Aeschylus, *Prometheus Vinctus*, Sikes and Willson. [4-0; 4-0]

Third and Fourth Years

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

303. (3) Greek Drama.—Development of Greek tragedy and comedy; scenic antiquities; representative plays of Sophocles, Euripides, and Aristophanes; Aristotle's discussion of tragedy. Texts: Sophocles, *Antigone*, Jebb and Shuckburgh; Euripides, *Heracles*, Byrde; Aristophanes, *Aves*, Hall and Gildart; Aristotle, *Ars Poetica*, Bywater. (Given in 1951-52). [3-0; 3-0]

305. (3) Epic and Lyric Poetry.—Selections from Homer's *Iliad* and from the Greek lyric anthology. Texts: Homer, *Iliad*, Monro, 2 vols.; *Greek Elegiac, Iambic, and Lyric Poets*, Harvard. (Given in 1950-51).

306. (3) Greek Historians.—Greek historical writing; selections from Herodotus and Thucydides. Texts: *Herodoti Historiae*, Hude; *Thucydides*, Jones, 2 vols. (Given in 1950-51). [3-0; 3-0]

310. (1½) Composition.—Obligatory for Honours students in the Third Year. [2-0; 2-0]

The following three courses (Greek 314, 315, 331) do not require a knowledge of the Greek language. Greek 314 and 315 may be taken by Second Year students.

314. (1) Greek Art.—Survey of architecture, sculpture and the minor arts from the Aegean period to the Hellenistic. [1-0; 1-0]

315. (2) Greek Epic and Tragedy.—Study, in translation, of the *Iliad*, the *Odyssey* and selected plays of Aeschylus, Sophocles, and Euripides. Collateral reading. Texts: *The Story of Achilles*, trans. W. H. D. Rouse; *The Story of Odysseus*, Rouse; *The Oresteia of Aeschylus*, G. Murray; *The Theban Plays of Sophocles*, Penguin Series; *The Medea of Euripides*, Murray; *The Hippolytus of Euripides*, Murray; *The Frogs of Aristophanes*, Murray. [2-0; 2-0]

331. (1½) Greek History.—Background and rise of Greek civilization; special emphasis on political, economic and cultural life of fifth and fourth centuries. For a complementary course in Roman history in Second Term see Latin 331. Greek 331 and Latin 331, if both are taken, count for 3 units of credit in History. Text-book: Trever, *History of Ancient Civilization*, Vol. I. [3-0; 0-0]

407. (3) Introduction to Greek Philosophy.—Beginnings of Greek philosophic inquiry; selections from two of the major works of Plato and Aristotle. Texts: Plato, *Respublica*, Burnet; Aristotle, *Ethica Nicomachea*, Bywater. (Given in 1951-52). [3-0; 3-0]

410. (1) Advanced Composition.—Obligatory for Honours students in the Fourth Year. [2-0; 2-0]

Primarily for Graduate Students

521. Aristotle's *Politics*.

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, Political Science, Sociology, and Geography. Economics 100, 200, 205, 330, Political Science 300, 325, 425, Sociology 200, Philosophy 300, 401, Psychology 201, and Geography 201 will be found especially helpful. **Attention, however, is called to the regulation Note 1, page 99, 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.**

Students who intend to major in History, or to enter the Teacher Training Course with a major in History must obtain credit in at least one course normally offered in the first two years in addition to the three courses required in the Third and Fourth Years.

For Honours courses in History see pages 103 and 109.

A reading knowledge of French, Russian, German or Spanish 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 or Russian is recommended.

First and Second Years

101. (3) Main Currents in Twentieth-Century History. — This course offers a background for contemporary world problems and is prerequisite to History Honours. If the World History course has been taken in Senior Matriculation, History 202 will be required for Honours. Text-books: Bennis, *Europe Since 1914*, or Chambers, Grant, and Bayley, *The Age of Conflict*; Schmitt, *Triple Alliance and Triple Entente*; Fox, *The Super-Powers*, (for upper year credit). (Extra work will be required from Third and Fourth Year students taking this course). Mr. Soward. [3-1; 3-1]

202. (3) The History of Canada.—Introductory general course required for Second Year Honours credit. If credit has already been given for History 202, History 203 must be taken for Honours credit. History 202 is prerequisite for History 404, 420, 426, 427, 430, 433, 533. Text-book will be announced. (Extra work will be required from Third and Fourth Year students taking this course). Mr. Tucker. [3-0; 3-0]

203. (3) Canada West of the Great Lakes.—Text-books: Howay, *British Columbia, the Making of a Province*; Sage, *Sir James Douglas and British Columbia*; Morton, *A History of the Canadian West to 1870-71*. (Extra work will be required from Third and Fourth Year students taking this course). Mr. Sage. [3-0; 3-0]

Third Year

Third Year courses may be taken in the Fourth Year and vice versa.

Although History 304 is primarily a Third Year course, Second Year students may be admitted.

Honour students must offer either History 304 or History 309.

304. (3) Mediaeval Europe, 500-1300.—A general outline of mediaeval history from the fall of the Roman Empire to the 13th century. Text-book: Thorndike, *History of Mediaeval Europe*. Miss Ormsby. [3-0; 3-0]

305. (3) The Expansion of Europe.—The history of European colonial expansion, and problems of colonial administration. Text-books: Muir, *Expansion of Europe*; Parry, *Europe and a Wider World, 1415-1715*; Townsend, *European Colonial Expansion Since 1871*; Walker, *Colonies*. Essays and reports will be assigned. (Given in 1950-51 and alternate years). Mr. Cooke.

[3-0; 3-0]

309. (3) British History to 1485.—Text-books: Trevelyan, *A History of England*; Hall and Albion, *A History of England and the British Empire*; Stephenson and Marcham, *Sources of English Constitutional History*; Adams, *Constitutional History of England*. Essays will be assigned throughout the session. Mr. Sage.

[3-0; 3-0]

310. (3) The Development of the British Empire to Responsible Government.—Empire history and colonial policy to the middle of the 19th century. Text-book: Williamson, *A Short History of British Expansion*. Essays and reports will be assigned. Mr. Cooke. (Given in 1950-51 and alternate years).

[3-0; 3-0]

311. (3) From Empire to Commonwealth.—Empire and Commonwealth history and problems from responsible government to the present. Text-book: Knaplund, *The British Empire, 1815-1939*. Essays and reports will be assigned. Mr. Cooke. (Not given in 1950-51).

[3-0; 3-0]

312. (3) 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*, or Craven and Johnson, *The United States*. Miss Ormsby.

[3-0; 3-0]

313. (3) The Rise of Modern Europe, 1300-1648.—A survey of the economic, political and cultural development of Europe from the later Middle Ages to the Peace of Westphalia. Text-books: Lucas, *The Renaissance and the Reformation*; Smith, *The Age of the Reformation*; Stearns, *Pageant of Europe*. Essays and reports will be assigned. Mr. Cooke.

[3-0; 3-0]

314. (3) Europe from Westphalia to Waterloo, 1648-1815.—A survey of the economic, political and cultural development of Europe in the 17th and 18th centuries. Text-books: Ergang, *Europe from the Renaissance to Waterloo*; Brunn, *Europe in Evolution*; Gottschalk, *The Era of the French Revolution*; Stearns, *Pageant of Europe*. Essays and reports will be assigned. Mr. Cooke. (Not given in 1950-51).

[3-0; 3-0]

316. (3) 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-book: Pirenne, *An Economic and Social History of Mediaeval Europe*, and *Mediaeval Cities and the Revival of Trade*. (Not given in 1950-51).

[3-0; 3-0]

320. (3) The History of China.—A survey of Chinese history and culture from ancient times to the present. Text-books: Latourette, *The Chinese, Their History and Culture*, or McNair, *China*. Essays will be assigned throughout the session. Mr. Ping-Ti Ho.

[3-0; 3-0]

333. (3) Third Year Honours Seminar.—Historical method and the use of reference books. Text-book: Rowse, *The Use of History*. Miss Ormsby, Mr. Cooke.

[2-0; 2-0]

404. (3) The French in North America.—A study of a culture, using the historical approach. Reading will be emphasized, and a reading knowledge of French is required. Mr. Tucker. [3-0; 3-0]

Fourth Year

415. (3) Europe, 1815-1914.—The political, social and economic history of the chief countries of continental Europe, with special attention to international relations. Text-books: Hays, *A Political and Cultural History of Modern Europe*, Vol. II; Hall and Davis, *The Course of Europe Since Waterloo*; Stearns, *Pageant of Europe*. Mr. Soward. [3-0; 3-0]

417. (3) Economic History of Western Europe Since 1500.—With special reference to Great Britain. Mr. Ping-Ti Ho. [3-0; 3-0]

418. (3) Britain Under the Tudors and Stuarts, 1485-1688.—An evaluation of the political, economic, social and cultural change of Britain in the period. Text-books: Innes, *England Under the Tudors*; Trevelyan, *England Under the Stuarts*. (This course will be offered in alternate years, beginning 1950-51). Mr. Davies. [3-0; 3-0]

419. (3) Great Britain Since 1686.—Text-books: Trevelyan, *British History of the Nineteenth Century*; Woodward, *The Age of Reform*; Hall and Albion, *A History of England and the British Empire*. Mr. Davies. [3-0; 3-0]

420. (3) The Evolution of the Canadian Constitution.—Text-book: Kennedy, *The Constitution of Canada*. Mr. Tucker. [3-0; 3-0]

424. (3) History of Latin America.—(Not given in 1950-51).

426. (3) Canada After 1867.—A survey of the main features of political and economic development of Canada after 1867, with some consideration of foreign policy. Text-books: Lower, *Colony to Nation*; Creighton, *Dominion of the North*. Miss Ormsby. [3-0; 3-0]

427. (3) Canadian-American Relations.—A survey of British or Canadian diplomatic relations with the United States, affecting Canada, since the American Revolution. Text-book: Brebner, *North Atlantic Triangle*. Mr. Tucker. [3-0; 3-0]

428 (3) 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. Text-books: Beard, *The Rise of American Civilization*; Parrington, *Main Currents in American Thought*. Miss Ormsby. (Not given in 1950-51). [3-0; 3-0]

429. (3) Eastern Europe from the Early Middle Ages.—(Not given in 1950-51).

433. (3) Fourth Year Honours Seminar.—Development of Canadian external policy since Confederation. Prerequisite: History 202. Text-book: Glazebrook, *A History of Canadian External Relations*. Mr. Soward. [2-0; 2-0]

449. (3) Graduating Essay in Honours.

For Graduate Students

525. (3) History of Historical Writing.—Text-books: Barnes, *A History of Historical Writing*; Shotwell, *An Introduction to the History of History*; Gooch, *History and Historians in the 19th Century*. Mr. Sage and other members of the staff. [3-0; 3-0]

533. (3) Master's Seminar.—The history of British Columbia. Mr. Sage.

549. (3) Master's Thesis.

The following courses will be accepted for credit in History. Credit (3 units) in History will be given for Greek 331 and Latin 331 only if both courses are taken.

Greek 331 (1½).

Latin 331 (1½).

Slavonic Studies 310 (3).

Slavonic Studies 330 (3).

Slavonic Studies 448 (3).

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. (1½). **Introduction to Foods and Nutrition.**—Principles of food preparation and of nutrition. Text-books: Bogert, *Nutrition and Physical Fitness*, 5th edition; Kansas State College, *Practical Cookery*, 21st edition, 1947.

[2-3; 0-0]

91. (1½) **Introduction to Textiles and Clothing.**—Basic principles of textile selection and clothing construction using commercial patterns. Text-book: Picken, *Modern Dressmaking Made Easy*, 1946.

[2-3; 0-0]

101. (1½) **Principles of Design.**—Study and application of fundamental art principles to problems in design. Text-book: Goldstein, *Art in Everyday Life*, 3rd edition.

[3-3]

102. (1½) **Textiles and Clothing.**—Basic textile fibres and fabrics; techniques of clothing construction applicable to wool, silk, or synthetic fabrics. Text-book: Hess, *Textile Fibres and Their Use*, revised edition. Prerequisite: Home Economics 91 or equivalent.

[1-3-1]

103. (1½) **Home Management.**—Activities in the home; development of standards, techniques, and skills, with emphasis on time and motion studies and use of variety of equipment. Text-books: Gross and Crandall, *Home Management in Theory and Practice*, 1947; R. Balderston, *Housekeeping Workbook*. Prerequisite: Home Economics 90 or equivalent.

[2-3]

200. (1½) **Dress Design and Construction.**—Development of foundation patterns and flat pattern design; consumer problem in clothing. Text-book: Hillhouse & Mansfield, *Dress Design Draping and Flat Pattern Making*, 1948. Prerequisites: Home Economics 101, 102.

[1-4-1]

201. (1½) **Food Management.**—Food buying, meal planning, table service; food preparation, food legislation; brands, grades. Text-book: Kansas State College, *Practical Cookery*, 21st edition, 1947. Prerequisite: Home Economics 103.

[2-6]

202. (1½) **Human Nutrition.**—Requirements of the normal adult; laboratory study of food values. Text-books: Taylor, *Food Values in Shares and Weights*, 1942; Chaney and Ahlborn, *Nutrition*, 4th edition, 1949. Prerequisite: Home Economics 103. Chemistry 210 must precede or be taken concurrently.

[0-0; 2-3]

300. (1½) **Household Equipment and Furnishings.**—House plans, furnishings, and equipment; problems of selection and care of equipment and furnishings. Text-book: Nickell and Dorsey, *Management in Family Living*. Prerequisites: Home Economics 103, Physics 100 or Physics 110.

[3-2; 0-0]

301. (1½) **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*. Prerequisites: Home Economics 103, Economics 140 or 200.

[0-0; 2-2]

302. (1½) Foods.—Preparation of various types of food presented from an experimental point of view. Text-book: Lowe, *Experimental Cookery*, 3rd edition. Prerequisites: Home Economics 201, Chemistry 210. [2-3; 0-0]

303. (1½) Family Nutrition.—Food requirements of the healthy family group. Text-book: Monsch and Harper, *Feeding Babies and Their Families*. Prerequisites: Home Economics 202; Chemistry 210; Biology 304 parallel or preceding. [2-3; 0-0]

304. (1½) Experimental Cookery.—Experimental procedure applied to food preparation. Each student will carry out and write a report on an experimental food problem. Text-book: Lowe, *Experimental Cookery*, 3rd edition. Prerequisite: Home Economics 302. [0-0; 0-6]

305. (1½) Advanced Nutrition.—Applied to all groups in a community. Reference: Sherman, *Chemistry of Foods and Nutrition*, 7th edition, 1945. Prerequisite: Home Economics 303. [0-0; 2-1]

400. (1½) Textiles.—Construction, finish and design of textiles; fibre identification. Physical and chemical testing of fabrics; consumer problems. Text-book: Hess, *Textile Fibres and Their Uses*, revised edition, 1946. Prerequisite: Chemistry 210. [2-3; 0-0]

401. (1½) Advanced Clothing.—Development of dress design by means of draping and tailoring; social significance of fashion, and garment industry. Prerequisite: Home Economics 200. [0-0; 2-4]

403. (1½) Interior Decoration.—Design principles applied to home furnishings; elements of interior decoration and history of interiors and furnishings. Text-book: Whiton, *Elements of Interior Decoration*. Prerequisite: Home Economics 101. [0-0; 2-4]

410. (1½) Advanced Foods.—Demonstration techniques and other means of presenting information to the public; discussion and demonstrations, radio talks. Prerequisites: Home Economics 304 parallel or preceding. Practice time: to be arranged. [1-3-2]

413. (1½) 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. Prerequisites: Home Economics 303, Biology 304. [0-0; 2-3]

414. (1½) Quantity Cookery.—Preparation of food in large quantities. Reference: West and Wood, *Food Service in Institutions*, 2nd edition. Prerequisite: Home Economics 302. [1-5; 0-0]

416. (1½) 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. Prerequisite: Home Economics 302. Field trips to be arranged. [3-0; 0-0]

417. (1½) 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. Prerequisites: Home Economics 416, Commerce 259. [0-0-0; 2-2-2]

420. (1½) Home Management.—Residence in home management house. Open only to Third and Fourth Year students.

421. (3) Child Development and Family Relations.—Physical, mental, social, and emotional development of infant and child; study of family relations. Open only to Third and Fourth Year students. [3-0; 3-0]

International Studies

For Honours courses in International Studies see page 104.

300. (3) The British Commonwealth and International Organization.—A survey of the growth of intra-Commonwealth cooperation since 1919, and an evaluation of the Commonwealth contribution to international security. Text-books: Carter, *The British Commonwealth and International Security*; Keith, *The Dominions as Sovereign States*. Mr. Davies. [3-0; 3-0]

310. (3) Far Eastern International Politics.—A survey of the diplomatic relations of China and Japan in the 19th and 20th centuries. Text-book: to be announced. Mr. Ho. [3-0; 3-0]

400. (3) The Great Powers and World Politics.—A study of the Great Powers and their international policies in the 19th and 20th centuries. Text-book: to be announced. Mr. Soward. [3-0; 3-0]

410. (3) Canadian External Policy Since Confederation.—For credit in the Department of History see History 433. Except by special permission this course is only open to Honours or Graduate students. Text-book: Glazebrook, *A History of Canadian External Relations*. Mr. Soward. [2-0; 2-0]

449. (3) Graduating Essay.

Latin

(Given by the Department of Classics)

For Latin in Honours courses see pages 101, 104, 107, 109.

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

90. (3) Beginners' Latin.—For students with no previous knowledge of Latin; for credit only to students who have not offered Latin for credit at University Entrance. Text-book: Collar and Daniell's *First Year Latin*, revised by Thornton Jenkins. [4-0; 4-0]

101. (3) Introduction to Latin Literature.—Selections from prose authors; selections from representative poets of the late Republic and early Empire; practice in composition; history of Rome. Text-books: Pilsbury, *Latin Prose Composition*; Robertson and Robertson, *The Story of Greece and Rome*, chap. XXXIII-LIV. Texts: *A Book of Latin Prose Selections*, Neville, Dale, Breslove, and Tracy; *A Book of Latin Poetry*, Neville, Jolliffe, Dale, and Breslove. [3-0; 3-0]

202. (3) Prose and Poetry of the Golden Age.—Prose of Cicero; the developed epic as represented by Vergil; history of Greece. Text-book: Robertson and Robertson, *The Story of Greece and Rome*, chapters I-XXXII. Texts: Cicero, *Catilinarian Orations*, Upcott; Vergil, *Aeneid VI*, Page. [3-0 3-0]

Third and Fourth Years

Courses 303, 304, 310, 331, 405, 406 are open to all students who have passed Latin 202 or its equivalent.

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

303. (3) Roman Comedy.—A study of typical plays of Plautus and Terence; brief history of Latin literature. Text-book: J. W. Mackail, *Latin Literature*, Texts: Plautus, *Menaechmi*, Moseley and Hammond; Terence, *Phormio* and *Heautontimorumenos*, in *The Comedies of Terence*, Ashmore. (Given in 1950-51). [3-0; 3-0]

304. (3) Prose and Poetry of the Silver Age.—Tacitus and Juvenal, history of Latin literature. Text-book: J. W. Mackail, *Latin Literature*. Texts: Tacitus, *The Annals, Books I-VI*, Allen; Juvenal, *Satires*, Duff. (Given in 1951-52). [3-0; 3-0]

310. (1½) Composition.—Obligatory for Honours students in the Third Year. [2-0; 2-0]

For the following course (331) a knowledge of Latin is not required.

331. (1½) Roman History.—Growth of Rome and development of its political institutions during the Republic; social and economic history of the Empire; transition from classical to mediaeval world. For a complementary course in Greek history in the First Term see Greek 331. For credit in the Department of History page 156. Text-book: Trever, *History of Ancient Civilization*, Vol. II. [0-0; 3-0]

405. (3) Latin Letter Writing.—Three different styles of letters by three masters. Texts: Cicero, *Selected Letters*, Pritchard and Bernard; Horace, *Epistles*, Wilkins; Seneca, *Select Letters*, Summers. (Given in 1950-51). [3-0; 3-0]

406. (3) General View of Latin Poetry.—A survey of Latin poetry from the earliest native verse into late Imperial and early Christian literature. Text: *The Oxford Book of Latin Verse*, Garrod. (Given in 1951-52). [3-0; 3-0]

410. (1) Advanced Composition.—Obligatory for Honours students in the Fourth Year. Prerequisite: Latin 310. [2-0; 2-0]

509. Methods in High School Latin.—This course is offered primarily for students in the Teacher Training Course and does not carry undergraduate credit.

Primarily for Graduate Students

521. (3) Cicero, *Select Letters*, 2 vols., How. [3-0; 3-0]

523. (3) Roman Comedy. [3-0; 3-0]

530. (3) Julius Caesar. [3-0; 3-0]

Linguistics

(Given by the Department of Classics)

The following course is intended, primarily, for Third and Fourth Year students who have completed Second Year language requirements or the equivalent.

319. (3) General Introduction to Modern Linguistic Science.—Origin of language, development of writing (ideograms, syllabaries, etc.), families of languages, classes of languages, linguistic change, semantics, dialects, slang. Text-book: E. H. Sturtevant, *Introduction to Linguistic Science*. Prerequisite: At least Second Class standing in any of the following courses: Anthropology 300, English 200, French 202, German 200, Greek 202, Latin 202, Russian 200, 203, Polish 210, Spanish 201. Mr. W. L. Grant. [3-0; 3-0]

Mathematics

For Honours courses in Mathematics see pages 104, 105, 109, 110.

101. (3) Algebra, Geometry, and Trigonometry.—Logarithms, theory of quadratic equations, permutations, combinations, binomial theorem, determinants, complex numbers; straight line, circle, parabola, ellipse, and hyperbola; elementary trigonometry. Text-book: Sisam, *College Mathematics*. Prerequisite: Mathematics 91. [4-0; 4-0]

Prerequisite: Mathematics V. (See note 6, page 98.) [4-3; 4-3]

Primarily for Second Year Students

Mathematics 101 is prerequisite to the following courses:

200. (3) Algebra and Geometry.—Mathematical induction, complex numbers, theory of equations, determinants; conics, polar coordinates, and solid analytic geometry. Text-book: Sisam, *College Mathematics*. [3-0; 3-0]

201. (3) The Mathematical Theory of Investments.—Theory of interest, annuities, debentures, valuation of bonds, sinking funds, depreciation, probability and its application to life insurance. [3-0; 3-0]

This course may not be counted in the units required for a major in Mathematics.

202. (3) Calculus.—Introduction to differential and integral calculus, with applications. Text-book: Sherwood and Taylor, *Calculus*, revised edition. [3-0; 3-0]

205. (3) Elementary Statistical Analysis.—Basic theorems of probability, standard tests, elements of statistical estimation. Enrolment in this course will be limited by available laboratory space. [3-2; 3-2]

Primarily for Third Year Students

300. (3) Calculus.—Differential and integral calculus with applications. Text-book: Sherwood and Taylor, *Calculus*, revised edition. Prerequisite: Mathematics 202. [3-0; 3-0]

302. (3) Differential Equations.—An introductory course with applications to geometry, mechanics, physics, and chemistry. Prerequisites: Mathematics 200 and 202 or Mathematics 300. [3-0; 3-0]

With the consent of the Department, Mathematics 300 and 302 may be taken concurrently.

306. (3) Topics in Algebra and Geometry.—Number systems of elementary algebra, and axioms of elementary geometry. Prerequisite: Mathematics 200. (May not be given until 1951-52 and in alternate years thereafter). [3-0; 3-0]

307. (3) Elementary Number Theory. — Properties of integers and primes, diophantine equations, quadratic residues, quadratic forms, special problems. Text-book: Uspensky and Heaslet, *Elementary Number Theory*. Prerequisite: Mathematics 200. (Given in 1950-51 and alternate years). [3-0; 3-0]

For Third Year Honours Students Only

At least Second Class standing in each of Mathematics 200 and 202 is prerequisite to the following courses:

320. (2) Differential Calculus.—Sequences, series; derivatives of functions of one and several variables, implicit functions; applications to the differential geometry of curves and surfaces. Problem sets will be assigned periodically throughout the year and marks obtained will be considered in determining final standing. Text-book: Hyslop, *Infinite Series*. [2-1; 2-1]

321. (3) Integral Calculus and Differential Equations.—Definition and properties of the single and multiple Riemann integral; systematic integration; line and surface integrals; elementary differential equations, with applications. Text-books: Gillespie, *Integration*; Ince, *Integration of Ordinary Differential Equations*. [3-0; 3-0]

322. (3) Algebra and Geometry. — n -dimensional vector spaces; linear systems, matrices, and determinants; quadratic forms, with applications to conics and quadrics. [3-0; 3-0]

Primarily for Fourth Year Students

For Honours students in Mathematics or in Mathematics combined with another subject, at least Second Class standing in each of Mathematics 320, 321, and 322 is prerequisite to each of the following courses. Other students may be admitted to Mathematics 401, 402, and 405 only with the consent of the Department.

400. (2) Modern Algebra.—The number systems of algebra and analysis. Introduction to groups, fields, linear vector spaces. [2-0; 2-0]

401. (3) Analysis.—Applications of power series; Fourier series; introduction to the theory of functions of a complex variable. Text-book: Phillips, *Functions of a Complex Variable*. [3-0; 3-0]

402. (3) Theory and Applications of Differential Equations.—Existence theorems, Laplace transforms, eigenvalue problems, numerical methods. [3-0; 3-0]

403. (2) Projective Geometry.—Systematic development of the geometry of the projective plane. [2-0; 2-0]

405. (3) Mathematical Statistics.—Statistical analysis, with emphasis on sampling theory and the testing of statistical hypotheses. Applications to problems in the sciences. Text-book: Hoel, *Introduction to Mathematical Statistics*. Prerequisites: Mathematics 300, or 320 and 321. [3-0; 3-0]

440. (1) Honours Seminar. — For Fourth Year Honours students in Mathematics or in Mathematics combined with a subject other than Physics. Standing will be determined by term work and a final comprehensive examination.

441. (1) Honours Seminar. — For Fourth Year Honours students in Physics and Mathematics. Standing will be determined by term work and a final comprehensive examination.

Courses for Graduate Students

It is hoped to offer four of the following courses in 1950-51. Students should consult the Department for further information.

501. (3) Theory of Functions of a Real Variable.

502. (3) Theory of Functions of a Complex Variable.

503. (3) Differential Geometry.

504. (3) Projective Geometry.

505. (3) Topics in Applied Mathematics.

506. (2) Advanced Differential Equations.

507. (2) Theory of Numbers and Algebraic Numbers.

508. (2) Theory of Rings.

509. (2) Modern Algebra.

511. (2) Topology.

512. (2) Theory of Groups.

549. (3-6) Thesis for Master's Degree.

649. Thesis for Ph.D. Degree.

Music

105. (3) Theory of Music I.—A study of the beginning of harmony, with ear training and early musical history. Prerequisite: University Entrance Music or its equivalent. The student should have familiarity with all intervals, triads, dominant 7ths and common rhythms; ability to sing major and minor scales from any degree; and sufficient knowledge of piano to play harmonic progressions. Mrs. Jean Coulthard Adams. [3-0; 3-0]

205. (3) Theory of Music II.—A study of 18th and 19th century harmony and advanced aural training. The Second Term will include a short course in early melodic styles as an introduction to the study of counterpoint. Prerequisite: Music 105. Mrs. Jean Coulthard Adams. [3-0; 3-0]

300. (3) Music Appreciation.—How to listen to music; analysis of structure and form. Mr. Harry Adaskin. [3-0; 3-0]

305. (3) Theory of Music III.—The study of 16th century counterpoint in several voices; harmony in relation to 18th and 19th century forms, and creative work in contemporary idioms. Prerequisite: Music 205. Miss Barbara Pentland. [3-0; 3-0]

405. (3) Theory of Music IV. — Further contrapuntal study including fugal writing of all periods; the study of 20th century materials, orchestration, and creative work in large forms. Prerequisite: Music 305, and a short composition submitted at the time of registration. Miss Barbara Pentland. [3-0; 3-0]

Philosophy

Courses numbered 300-500 are not open to Second Year students. Honours and graduate students in Philosophy may count Anthropology 300 and Slavonic Studies 310 or 412 as courses in Philosophy.

Philosophy 202, 205, 210 may be considered as Third or Fourth Year subjects.

For Honours courses in Philosophy, see pages 104 and 109.

100. (3) Introduction to Philosophy.—Problems of philosophy with emphasis upon proposed solutions of problems of today. [3-0; 3-0]

202. (3) Logic.—Fundamental problems of logic and scientific method emphasizing the application of the principles of correct thinking. [3-0; 3-0]

205. (3) General History of Philosophy.—Philosophy from the Greeks to the present. Primarily for General course students. Students who have taken Philosophy 100 may not enroll for this course without permission of the instructor. [3-0; 3-0]

210. (3) Ancient Philosophy.—Western philosophic thought from Thales to St. Augustine, with principal stress on Plato and Aristotle. Prerequisite: Philosophy 100 or 205 or equivalent. [3-0; 3-0]

302. (3) Ethics.—The development of ethical thought; a systematic discussion of some fundamental problems of ethics. [3-0; 3-0]

304. (3) Social Philosophy. — Historical survey, evaluation of present social institutions and processes in terms of the democratic ideal. [3-0; 3-0]

305. (3) Recent Philosophy.—Basic ideas of contemporary movements including idealism, realism, pragmatism, phenomenology, logical positivism, semantics and existentialism. Prerequisite: Philosophy 100 or 205 or equivalent. [3-0; 3-0]

310. (3) Mediaeval and Early Modern Philosophy.—Mediaeval thought from St. Augustine to the Renaissance; the rise of modern science, the resulting effect on general European thought, philosophical developments of the seventeenth and eighteenth centuries. Prerequisite: Philosophy 205 or 210 or equivalent. [3-0; 3-0]

402. (3) Symbolic Logic and Semantics.—Introduction to the elements of symbolic logic and to the general theory of signs. Prerequisite: Philosophy 202 or its equivalent. [3-0; 3-0]

410. (3) Modern Philosophy.—Intensive study of Kant's *Critique of Pure Reason*; a general critical survey of the philosophy of Kant and major phil-

osophers of the nineteenth century. Prerequisite: Philosophy 310 or its equivalent. [3-0; 3-0]

412. (3) Philosophical Problems.—Problems of methodology, knowledge, values, and social philosophy. Primarily for Fourth Year and Graduate students in science who have had no philosophy course. [3-0; 3-0]

Primarily for Graduate Students

500. (3) Metaphysics-Epistemology Seminar.—(Alternate years, not given 1950-51). [3-0; 3-0]

510. (3) Value-Theory Seminar.—(1950-51 and alternate years). [3-0; 3-0]

Physical Education

Physical Education Activity Courses.—Twelve units of Physical Education activity courses are required for graduation. A maximum of four units (normally 8 hours per week) should be taken in a single year.

Uniforms and Equipment

Men.—Major students are required to obtain the following: 1 pair regulation gray trousers, 2 white T shirts, 2 pairs blue shorts, 1 pair football boots, 1 pair white gymnasium or tennis shoes, 1 blue football jersey, 1 pair blue swimming trunks.

In addition the following are suggested: sweat suit, regulation blue dress sweater.

Women.—Major students are required to obtain the regulation uniform: tunic, shorts, blouse, sweat suit, white socks, white tennis shoes, dance sandals, dance uniforms.

ACTIVITY COURSES FOR MEN

Note

- (1) The following courses are required of all men: (a) 200, 300, 400; (b) 230, 330; (c) 240; (d) 350, 450; (e) 406.
- (2) Courses 208 to 218 inclusive and one course selected from 220 to 226 inclusive must be completed before the student enters his final year.
- (3) Courses numbered below 300 are intended for First or Second year students.

200. (1) Gymnastics.—Free standing exercises, tumbling, and apparatus. [0-2; 0-2]

208. (½) Baseball.—Fundamentals and rules of baseball and softball. [0-2; 0-0]

210. (½) Basketball.—Fundamentals, basic drills, rules. [0-2; 0-0]

212. (½) Football.—Fundamentals, basic drills, and formations. [0-0; 0-2]

214. (½) Rugby.—Basic skills, main rules; emphasis on playing. Text-book: Hollis and Sugden, *Rugby—Do It This Way*. [0-0; 0-2]

216. (½) Soccer.—Basic skills, main rules; emphasis on playing. Text-book: *Football Association Handbook*. [0-2; 0-0]

218. (½) Minor Games.—Volleyball, Group Games, and Relays. Rules, skills, teaching technique, practical teaching. [0-0; 0-2]

220. (½) Badminton.—Skills, court craft, rules, coaching, organization. [0-2; 0-0]

222. (½) Boxing and Wrestling.—Basic techniques and skills; practice in fundamentals. [0-0; 0-2]

224. (½) **Golf**.—Theory of swing, practical application, etiquette, and rules. [0-2; 0-0]
226. (½) **Tennis**.—Fundamentals, court procedure, rules. [0-0; 0-2]
230. (½) **Aquatics**.—Elementary swimming skills, strokes, entries, personal water safety. [0-1; 0-1]
240. (½) **Dance**.—Elementary square, ballroom, folk, modern for recreational groups. [0-1; 0-1]
300. (1) **Gymnastics**.—Progression in gymnastic tables, classification of exercises, mutual instruction. Tumbling, apparatus, and demonstration drills. Prerequisite: P.E. 200. [0-2; 0-2]
310. (¾) **Advanced Basketball**.—Team tactics and strategy; coaching and officiating techniques; rules, use and development of material. Prerequisite: P.E. 210. Two sections. [0-2; 0-2]
312. (¾) **Advanced Football**.—Offensive and defensive tactics; strategy and generalship; early season practice; use and development of materials; rules, coaching. Prerequisite: P.E. 212. [0-0; 0-2]
314. (¾) **Advanced Rugby**.—Organization, coaching methods, tactics and team strategy, rules and refereeing. Prerequisite: P.E. 214. [0-2; 0-0]
316. (¾) **Advanced Soccer**.—Organization, coaching methods, tactics and team strategy, rules and refereeing. Prerequisite: P.E. 216. [0-0; 0-2]
318. (¾) **Grass Hockey and Cricket**.—Basic skills, main rules, emphasis on playing. Not offered in 1950-51. [0-2; 0-0]
330. **Aquatics**.—Principles of water safety, springboard diving, water games and sports, personal safety and rescue methods including beach pool, lake, ice techniques. Prerequisite: P.E. 230. [0-1; 0-1]
340. (½) **Dance**.—Square and ballroom—with emphasis on teaching. [0-2; 0-0]
346. (1) **Skiing**.—Principles of teaching and coaching; officiating in ski tournaments. [1-0; 1-0]
350. (¾) **Track and Field**.—Fundamentals of sprinting, middle distance and distance running, high jumping, pole vaulting, and putting the shot. [0-1; 0-1]
400. (½) **Gymnastics**.—Teaching, techniques, and formations. Methods of promoting, judging, conducting competitions; pyramids. Prerequisite: P.E. 300. [0-2; 0-0]
402. (¾) **Advanced Tumbling and Apparatus**.—Single, dual activities; routines and combinations on all pieces of apparatus with special emphasis on beauty of combination, form, and free flowing movement. Prerequisite: P.E. 400. [0-0; 0-2]
406. (½) **Physical Education Workshop**.—Techniques of teaching, coaching, officiating. Supervised field work will be required. [0-1; 0-1]
430. (½) **Aquatics**.—Care of facilities, swimming pool, beach, camp water front; health and safety procedure in aquatics. Competitive swimming, coaching, training, and conditioning. Conduct of swimming galas and pageants. [0-0; 0-2]
450. (½) **Track and Field**.—Fundamentals of hurdling, broad jumping, throwing the javelin and discus, relay racing. Organization and conduct of a track and field meet. [0-1; 0-1]

Teacher Training

504. **Health and Physical Education Methods**.—Open only to students with Bachelor of Physical Education degree or equivalent. Four hours per week.

506. Introduction to School Health and Physical Education.—Theory and practical work in the health and physical education programme. No previous training required. Four hours per week.

ACTIVITY COURSES FOR WOMEN

Second Year

201. (1) Gymnastics.—Elementary fundamental exercises to provide a scientific method of conditioning the body; apparatus and tumbling; theory to include gymnastic terminology and starting positions. [0-2; 0-2]

211. (1) Team Games.—Fieldball, speedball, soccer, basketball, softball; fundamental skills and team tactics. Text-books: *Guide Books*. [0-2; 0-2]

221. (½) Individual Games.—Tennis, strokes and court tactics; archery, techniques and shooting. Text-book: Ainsworth, *Individual Sports For Women*. [0-1; 0-1]

231 (½) Aquatics.—Strokes, skills, water entries. [0-1; 0-1]

241. (1) Dance.—Elementary modern dance, history of dance, musical form and its application to the dance; elementary folk dance, Scandinavian, American, English; ballroom dancing. [0-2; 0-2]

Third Year

301. (1) Gymnastics.—Intermediate fundamental exercises; apparatus and tumbling; theory to include the anatomy, the value and the basic movements of the fundamental exercises. [0-2; 0-2]

311. (1) Team Games.—Fieldball, speedball, soccer, basketball, softball, fundamental skills and team tactics. Text-book: *Official Guides*. [0-2; 0-2]

321. (½) Individual Games.—Golf, woods, and irons; archery, techniques and shooting. [0-1; 0-1]

331. (½) Aquatics.—Strokes, water skills, water entries; theory and methods. [0-1; 0-1]

341. (1) Dance.—Intermediate modern dance, techniques, introduction to group composition; intermediate folk dance, Scandinavian, American, Scottish, European; character dances. [0-2; 0-2]

Fourth Year

401. (1) Gymnastics.—Advanced fundamental exercises; apparatus and tumbling; theory to include principles of varying exercises, progression in exercises, the gymnastic table, lesson and programme. [0-2; 0-2]

411. (1) Team Games.—Basketball, field hockey, softball, track and field, coaching and officiating. [0-2; 0-2]

421. (½) Individual Games.—Badminton, tennis; stroke fundamentals, strategy, tactics, umpiring; golf; archery. [0-1; 0-1]

431. (½) Aquatics.—Strokes. [0-1; 0-1]

441. (1) Dance.—Advanced modern dance, dance composition, production, and stagecraft; advanced folk dance, Scandinavian, English, Scottish, European, Mexican; national dances; character dances; ballroom dancing. [0-2; 0-2]

Teacher Training

504. Health and Physical Education Methods.—Open only to students with Bachelor of Physical Education or the equivalent. Four hours per week.

506. Introduction to School Health and Physical Education.—Theory and practical work in the health and physical education programme. No previous training required. Four hours per week.

COURSES IN THEORY FOR MEN AND WOMEN

260. (2) History of Physical Education and Recreation.—A survey of physical education and recreation from the ancient civilizations, with emphasis placed on present day curricula and methods. [2-0; 2-0]

360. (2) Principles of Physical Education.—A study of fundamental principles, aims, objectives to formulate the student's professional point of view; a study of competition, its history, basic principles, and its place in education. Theory and practice of first aid; standard course to qualify for Instructor's Certificate. [2-0; 2-0]

370. (3) Anatomy and Kinesiology.—A study of the anatomy of the various systems of the body with special emphasis on the skeletal muscular system; the application of muscular movements in various physical education activities. [3-0; 2-2]

460. (2) Physical Education Seminar.—A study of the problems relating to the organization and administration of physical education programmes. [2-0; 2-0]

470. (2) Health.—Nutrition, sex education, community health and sanitation, development of health services, mental health, safety. [2-0; 2-0]

471. (1) Individual Gymnastics, Massage, Athletic Injuries.—The orthopaedic examination, normal posture, postural faults, causes of postural faults and their correction; the place of individual gymnastics in the physical education programme; the theory and practice of massage; the treatment of athletic injuries. [1-0; 1-0]

Note: Biology 304 (Basic Physiology) counts as a course in Physical Education.

Physics

Note 1. Students who plan to take only one course in Physics, either to meet the calendar requirements for a science or to acquire some knowledge of the modern physical world, are advised to take Physics 103. All who propose to take an Honours course in science, or any professional course, must take either Physics 100 or 101. Home Economics students take 110.

Note 2. Physics 203 and 303 are suitable courses for those taking the General course or Teacher Training.

Note 3. For Honours courses in Physics see pages 105, 109, 110.

100. (3) Elementary Physics.—Principles of mechanics, properties of matter, heat, light, sound, electricity, and some of the more recent developments in physics. Primarily for Honours science and engineering students. Text-book: Stewart, *Physics, A Text-book for Colleges*. Prerequisite: University Entrance Physics 91. Mathematics 101 must precede or be taken concurrently with this course. [3-2; 3-2]

101. (3) Elementary Physics.—Principles of mechanics, properties of matter, heat, light, sound, electricity, and some of the more recent developments in physics. Text-book: Stewart, *A Text-book for Colleges*. Prerequisite: Mathematics 101 must precede or be taken concurrently with this course. [3-2-2; 3-2-2]

103. (3) A Survey of Physics.—Principles of physics in non-mathematical language, principles of mechanics, heat, light, sound, electricity and atomic structure. Students who have received credit for Physics 100 may not take this course. Text-book: White, *Classical and Modern Physics*. [3-2; 3-2]

110. (3) General Physics.—For students taking courses in the Department of Home Economics. Mechanics, molecular physics, heat, sound, light, electricity, and modern physics without stressing their mathematical

aspect. Nursing students may take this course in lieu of Physics 100. Prerequisite: if Mathematics 91 has not been taken for entrance to the University, Mathematics 101 must precede or be taken concurrently with this course. Text-book: Avery, *Household Physics*, revised edition. [3-2; 3-2]

200. (3) Mechanics, Heat and Molecular Physics.—Coplanar forces, Newton's Laws of Motion, friction, calorimetry, gas laws, and kinetic theory, radiation and conduction, entropy and second law of thermodynamics. Text-books: Duncan and Starling, *Dynamics*; Tyler, *Intermediate Heat*. Prerequisite: Physics 100 or 101. Mathematics 200 and 202 should be taken concurrently with this course, which is intended only for students majoring in science. [3-3; 3-3]

203. (3) General Physics.—For General course students. Prerequisite for Physics 303. Selected topics in classical and modern physics intended for a better understanding of the modern physical world. No credit for candidates for Honours in Physics. Prerequisite: Physics 100 or 101 or 103; Mathematics 91 or 101. [2-3; 2-3]

220. (3) General Physics.—Intermediate treatment of physics. Emphasis on biological and medical applications. Text-book: Semat, *Fundamentals of Physics*. Prerequisite: Physics 100. [3-2; 3-2]

Primarily for Third Year Students

300. (3) Electricity and Magnetism.—Fundamentals of magnetism and electricity, including basic A.C. circuit theory and electronics. Text-books: Suydam, *Fundamentals of Electricity and Magnetism*; Starling, *Electricity and Magnetism*. Prerequisite: Physics 100 or 101, Mathematics 202. [3-3; 3-3]

302. (2) Introduction to Mathematical Physics.—Application of differential equations and vector analysis to topics from free and forced vibrations, wave motion, potential theory, heat conduction. Text-books: Page, *Theoretical Physics*; Rutherford, *Vector Methods*. If credit has not been obtained in Mathematics 300 or 302, or 320 and 321, they should be taken concurrently with this course. [2-0; 2-0]

303. (3) Elementary Modern Physics.—Fundamental ideas underlying modern physics. For general science teachers and others interested in recent developments in physics. Electronic phenomena, radio and television, the nature of light and electromagnetic radiation, X-rays, the quantum theory, spectroscopy, relativity, radioactivity, cosmic rays, elementary particles. Text-book: Oldenberg, *Introduction to Atomic Physics*. Prerequisite: Physics 100 or 101 or 203. [2-3; 2-3]

304. (2) Thermodynamics.—More advanced discussion of the three fundamental laws of thermodynamics, with applications in physics and chemistry. Text-book: Zemansky, *Heat and Thermodynamics*. Prerequisites: Mathematics 202, Physics 200. [2-0; 2-0]

308. (3) Physical Optics.—Geometrical and physical optics; optical instruments, interference, diffraction, polarization, spectroscopy. Text-book: Monk, *Light, Principles and Experiments*. [2-3; 2-3]

310. (1) Light.—For students who have not taken Physics 308. Geometrical objects, optical instruments, photography, spectroscopy, photometry, thermal radiation, refractometers, interference, diffraction, polarized light. Text-book: Noakes, *Text-book of Light*. [1-0; 1-0]

331. (2) History of Physics.—Development of physics and of scientific thought for students of science. No credit for Honours students in Physics. [2-0; 2-0]

Primarily for Fourth Year Students

401. (2) Electricity and Magnetism.—Potential theory and introductory electromagnetic theory. Text-book: Slater and Frank, *Electromagnetism*. [2-0; 2-0]

402. (2) Atomic Physics.—Electrical discharge through gases, the electron, thermionic and photoelectric emission, Bohr Atom, special relativity, wave and particle concepts and wave mechanics, electron spin and electron distribution in atoms, atomic and molecular spectra, X-rays, molecular properties and chemical bonds. Text-books: Born, *Atomic Physics*; Stranathan, *Particles of Modern Physics*. Prerequisites: Physics 200 and 300, Mathematics 300, or 320 and 321. [2-0; 2-0]

403. (2) Statistical Theory of Matter.—Boltzmann statistics, fluctuations, Bose-Einstein and Fermi-Dirac statistics, applications. [2-0; 2-0]

405. (1) Theory of Elasticity and of Flow.—Mathematical theory of elasticity, propagation of waves, fundamentals of hydrodynamics and viscosity, conduction of heat. Text-book: Joos, *Introduction to Theoretical Physics*. Prerequisites: Mathematics 300, 302, 303 or 320, 321; Physics 200. [1-0; 1-0]

406. (2) Theoretical Mechanics.—Analytic and vector mechanics of particles and rigid bodies. Central forces, Lagrange's equations, Hamilton's principle and equations. Text-books: Page, *Introduction to Theoretical Physics*; Goldman, *Classical Mechanics*. If credit has not been obtained in Mathematics 300 and 302, or 320 and 321, they should be taken concurrently with this course. [2-0; 2-0]

407. (1) Introduction to Nuclear Physics and Cosmic Rays.—Concept of the nucleus; mass spectroscopy and binding energy; radioactivity; alpha, beta, and gamma rays; acceleration and detection of charged particles; discovery and properties of the neutron; nuclear reactions, fission; cosmic rays, mesons. Text-book: Stranathan, *The Particles of Modern Physics*. Prerequisites: Physics 200 and 300, Mathematics 300 or 320 and 321. [1-0; 1-0]

409. (2) Experimental Physics.—Advanced experiments in electricity, electronics, atomic and nuclear physics, practical work involving high vacuum technique, workshop practice, glass-blowing. Text-books: Hoag, *Electron and Nuclear Physics*; Strong, *Procedures in Experimental Physics*; Yarwood, *High Vacuum Technique*. [0-6; 0-6]

420. (3) Biophysics.—Basic problems of biophysics, biophysical instrumentation. Prerequisites: one of Physics 200, 220, 300, 330; Chemistry 304. [2-3; 2-3]

Primarily for Graduate Students

With the consent of the Head of the Department, Fourth Year students may select one or more units from the following graduate courses.

500. (1) Introduction to Quantum Mechanics.—A short non-mathematical survey alternative to 504 (credit will not be given for both) suitable for students other than those specifically listed under 504. Text-book: Heitler, *Elementary Wave-Mechanics*. [1-0; 1-0]

501. (1) Electromagnetic Theory.—Electromagnetic waves, guided transmission, classical theory of electrons. Prerequisite: Physics 401. [1-0; 1-0]

502. (1) Theory of Measurements.—Frequency distributions, interpolation, least squares. Text-book: Hoel, *Introduction to Mathematical Statistics*. [2-0; 0-0]

503. (1) Electronics.—Theory of electronic circuits in their application to physics. Rectification, power supplies, regulation, amplification, detection, feed-back, oscillators, saw-tooth generators, pulse techniques; differentiating, integrating and scaling circuits. [1-0; 1-0]

504. (2) Elementary Quantum Mechanics.—Quantum mechanics with applications to atomic problems. This new course, rather than 500, is recommended for those intending to work towards a Ph.D. degree, and particularly for those interested in theoretical physics, spectroscopy, or solid state. Text-book: Schiff, *Quantum Mechanics*. Prerequisite: Physics 402. [2-0; 2-0]

510. (2) Nuclear Physics.—Interactions of radiation with matter, radio-activity, nuclear reactions, nuclear properties. [2-0; 2-0]

511. (1) Magnetism and Dielectrics.—Classical and modern theory of diamagnetism and paramagnetism, and consideration of the special problems associated with the magnetization of ferro-magnetic substances and with ferro-electricity. Text-book: Stoner, *Magnetism*. [1-0; 1-0]

512. (1) Spectroscopy.—Atomic and molecular energy states. Text-books: Herzberg, *Atomic Spectra and Atomic Structure*; Herzberg, *Molecular Spectra and Molecular Structure*. Prerequisite: Physics 504. [0-0; 2-0]

513. (1) X-Rays and Crystal Structure.—White and characteristic X-rays, interaction with free electrons, atoms and molecules, crystal structure and structure analysis by X-rays, typical types of structure and chemical bonds, surface structure by electron diffraction. Text-books: Bragg, *The Crystalline State*; James, *The Optical Principles of the Diffraction of X-Rays*. [1-0; 1-0]

514. (1) Special Relativity Theory.—Relativistic kinematics, dynamics, connection with electromagnetic theory. Prerequisite: Physics 401. [1-0; 1-0]

515. (1) Electron Optics.—Electrostatic and magnetic electron optical systems, cathode ray and image tubes, electron multipliers, electron microscopes. [1-0; 1-0]

516. (1) Chemical Physics.—For physicists and chemists. Electrode processes, electronic and ionic processes in crystals (photoconductivity, colour-centres, luminescence, rectification), order-disorder phenomena. [1-0; 1-0]

520. (2) Advanced Quantum Mechanics.—Selected topics in relativistic quantum mechanics, second quantization, field theory. Prerequisites: Physics 504 and 514. [2-0; 2-0]

521. (1) Group Theory Methods in Quantum Mechanics.—Applications to atomic, molecular, crystal structure. Selection rules. Prerequisites: Physics 504 and 512. [1-0; 1-0]

522. (2) Advanced Spectroscopy.—Selected topics; determination of nuclear properties, microwave spectra. Text-books: Condon and Shortley, *The Theory of Atomic Spectra*; Herzberg, *Infra Red and Raman Spectra*. Prerequisite: Physics 512. [2-0; 2-0]

523. (1) Advanced Electronics.—Advanced treatment of specific problems, chosen from noise problems and sensitivity limits, micro-wave techniques, particle accelerators and pulse response of circuits. Prerequisites: Physics 503 or El. Eng. 465. [1-0; 1-0]

524. General Relativity Theory.—Prerequisite: Physics 514. [1-0; 1-0]

525. (1) Physics of the Solid State.—Quantum mechanical treatment of the electronic structure of solids. Prerequisite: Physics 504. [1-0; 1-0]

526. (1) Quantum Theory of Radiation.—Calculation of cross-sections for absorption, emission and scattering of photons, creation and annihilation of positrons. Theory of radiation damping. Text-book: Heitler, *The Quantum Theory of Radiation*. Prerequisites: Physics 501, 504 and 514. [1-0; 1-0]

527. (1) Theoretical Nuclear Physics.—Selected topics from current nuclear theory. Prerequisites: Physics 504 and 510. [1-0; 1-0]

528. (1) Cosmic Rays.—Hard and soft components, influence of earth's magnetic field, shower theory, mesons, nuclear interactions. Text-book: Montgomery, *Cosmic Ray Physics*. [1-0; 1-0]

531. (1) Biophysics.—Discussion of selected topics; partly in seminar form. [1-0; 1-0]

532. (1) Geophysics.—Reduction and interpretation of geophysical observations, reduction of gravity measurements, calculation of gravimetric

and magnetic fields of type bodies, propagation and reflection of earth vibrations. [1-0; 1-0]

536. (1) Introduction to Dynamic Oceanography.—Hydrostatics, geostrophic flow, continuity, eddy viscosity, and diffusion. [2-0; 2-0]

537. (2) Advanced Dynamic Oceanography.—A more intensive study of the dynamics of ocean and coastal currents. Prerequisites: Oceanography 500 and Physics 526. [0-0; 2-0]

538. (1) Hydrodynamics.—Systematic exposition of principles governing flow of fluids, ideal, and real, turbulent flow in the oceans. [1-0; 1-0]

539. (1) Waves and Tides.—Surface and internal waves, tides of the oceans, tidal currents. Prerequisite: Physics 536. [1-0; 1-0]

540. Methods in High School Physics.—This course is offered primarily for students in the Teacher Training Course and does not carry credit towards a B.A. degree.

549. Thesis for Master's Degree.

649. Thesis for Ph.D. Degree.

Polish

For single Honours in Slavonic Studies see page 106, for combined Honours page 110.

110. (3) Basic Polish.—Text-book: Coleman and Patkaniowska, *Polish Grammar*. Mr. Halpert. [4-0; 4-0]

210. (3) Polish.—Second course in the Polish language. Text-book: Coleman and Patkaniowska, *Polish Grammar*. Mr. Halpert. [3-0; 3-0]

320. (3) Polish Literature.—Lectures delivered in Polish. Selected readings of Polish classical literature with main stress on 19th century writers. Text-book: Kridl, *Literatura Polska*; Chlebowski, *Littérature polonaise au XIXe siècle*. Mr. Halpert. [3-0; 3-0]

Political Science

For Honours courses in Political Science see pages 105, 110.

Economics 200 is prerequisite for courses in Political Science, but may be taken concurrently with Political Science 300.

300. (3) Constitutional Government.—The nature, origin, and aims of the State; the organization of government in the United Kingdom and in the United States of America. Text-books: Ogg, *English Government and Politics*; Ogg and Ray, *Introduction to American Government*. Mr. Angus. [3-0; 3-0]

325. (3) Imperial Problems.—Problems of government within the British Empire. Readings to be assigned. (Not given in 1950-51). [3-0; 3-0]

330. (3) History of Political Thought.—Contributions of some of the great political thinkers to the theory of government, and conceptions of the state with emphasis on present-day political problems. Readings to be assigned. (May not be given 1950-51). [3-0; 3-0]

400. (3) The Government of Canada.—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: Dawson, *The Government of Canada*. Reference: *The Report of the Royal Commission on Dominion-Provincial Relations*. Mr. Angus. [3-0; 3-0]

425. (3) Problems of the Pacific.—Background to and contemporary importance of Pacific Area politics—economic relationships discussed at the conferences of the Institute of Pacific Relations. Readings to be assigned. (Not given in 1950-51). [3-0; 3-0]

435. (3) 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 recent conflict. References: Oppenheim, *International Law*; Brierly, *The Law of Nations*; MacKenzie and Laing, *Canada and the Law of Nations*. This course may not be taken for both Arts and Law Faculty credit. Mr. MacKenzie. [3-0; 3-0]

440. (3) Honours Seminar.—Reports and group discussions under staff direction of important aspects of advanced Political Science for Third Year Honours credit. Credit requisite: Honours or graduate standing. [2-0; 2-0]

441. (3) Honours Seminar.—Same as 440 but for Fourth Year Honours credit. Credit requisite: Honours or graduate standing. [2-0; 2-0]

449. (3) Honours Essay.—Essay on some theoretical or institutional aspect of political science to be selected in consultation with members of staff. Must be submitted in final form on or before the beginning of the examinations preceding the Congregation at which the student expects to receive the degree.

540. (3) Master's Seminar. — Readings, consultations and reports on such phases of contemporary political theory and practices as may be designed to meet the needs of candidates for the M.A. degree in Political Science. May be held concurrently with the Honours seminars. Credit requisite: graduate standing. [2-0; 2-0]

549. (3) Master's Thesis.—A comprehensive treatment of some institutional and theoretical problem in Political Science to be selected in consultation with the departmental staff. Must be submitted in final form on or before the beginning of the examinations preceding the Congregation at which the candidate expects to receive the degree.

Other Courses which Qualify for Honours and Graduate Credit in Political Science

History 309. (3).

History 419. (3).

International Studies 400. (3).

Slavonic Studies 308. (3).

Slavonic Studies 311. (3).

Slavonic Studies 330. (3).

Slavonic Studies 412. (3).

Psychology

Psychology 100 is a prerequisite for all courses in Psychology.

Courses numbered 300-500 are not open to Second Year students. Honours and graduate students in Psychology having the required prerequisites may count Biology 304, Education 530, and Anthropology 300 as courses in Psychology. Psychology 200, 201, 202 may be considered as Third and Fourth Year subjects.

For Honours courses see pages 105, 110.

100. (3) Introductory Psychology.—A scientific and practical study of the basic forms of human thinking, emotion, and activity. Text-book: Ruch, *Psychology and Life*, third edition. References: Dashiell, *Fundamentals of General Psychology*; Munn, *Psychology*. [3-0; 3-0]

200. (3) Experimental Psychology.—The application of scientific method, illustrations from performance of individual and group laboratory studies. Manual: Psychology 200 Laboratory Manual. Text-book: Smith, *Statistical Methods for Psychology and Education*. [2-3; 2-3]

201. (3) Social Psychology. — Personality development, motivation, beliefs and attitudes, language, institutional behaviour, leadership, propaganda, freedom and control, major social problems. Text-book: La Piere and Farnsworth, *Social Psychology*, third edition. Reference: Newcomb and Hartley, *Readings in Social Psychology*. [3-0; 3-0]

202. (3) Psychology of Adjustment.—Origins and modification of behaviour, varieties of adjustive behaviour, mental hygiene. Text-book: Shaffer, *The Psychology of Adjustment*. [3-0; 3-0]

300. (3) Business and Industrial Psychology.—The application of psychological principles to problems of business and industry. Organization of personnel department; scientific selection, training, and development of personnel; human relations. [3-0; 3-0]

301. (3) Psychology of Childhood and Adolescence.—Psychological development, prenatal through adolescence; determiners of psychological growth: motor, emotional, social, intellectual and language development. Implications for the control of behaviour arising from the study of development. References: Gesell and Ilg, *Child Development*; Blatz, *Understanding the Young Child*; Spock, *Pocket Book of Baby and Child Care*. [3-0; 3-0]

303. (3) Clinical Psychology and Counselling.—Problem behaviour; case studies; interview techniques; use of tests; projective methods; adjustment procedure; referrals. Text-book: Pennington and Berg, *An Introduction to Clinical Psychology*. Reference: Watson, *Readings in the Clinical Method in Psychology*. [3-0; 3-0]

304. (3) Statistics.—Statistical methods as applied to psychological investigations. References: Garrett, *Statistics in Psychology and Education*, third edition; Guilford, *Fundamental Statistics in Psychology and Education*; Walker, *Elementary Statistical Methods*. Prerequisite: Mathematics 101. [3-0; 3-0]

305. (3) Personality.—Theories of personality as represented by major psychological systems. Prerequisites: 6 units in Psychology, other than 100, including 201 or 202. [3-0; 3-0]

400. (3) Abnormal Psychology. — Understanding human nature by a study of abnormal behaviour and mental processes; field trips and case studies. Text-book: Thorpe and Katz, *The Psychology of Abnormal Behaviour*. Prerequisites: 6 units of Psychology other than 100; Fourth Year and Graduate students only. [3-0; 3-0]

403. (3) Mental Measurement and Psychological Tests.—The principles underlying the psychological measuring instruments: intelligence tests, personality inventories, and questionnaires, with practice in administration and scoring. Same as Education 536 and 537. Prerequisite: Psychology 304 or equivalent. [3-0; 3-0]

404. (3) Principles of Comparative Psychology.—Fundamental principles of the behaviour of man and the lower animals examined from the comparative point of view. Text-book: Maier and Schneirla, *Principles of Animal Psychology*. References: Moss, Ed., *Comparative Psychology*; Scheer, *Comparative Psychology*; Warden, Jenkins and Warner, *Comparative Psychology*. Prerequisite: Biology 100. [3-0; 3-0]

Primarily for Graduate Students

500. (3) History of Psychology Seminar. [3-0; 3-0]

501. (3) **Social Psychology Seminar.**—Prerequisite: Psychology 201, 304. [3-0; 3-0]
510. (0) **Research Methods Seminar.**—Obligatory for M.A. candidates. [2-0; 2-0]
520. (2) **Cerebral Localization.**—Function of the human brain; preparation for clinical examination of patients following lobotomies, head injuries, etc. Prerequisite: Biology 304 (with permission may be taken concurrently). [2-3; 0-0]
521. (1) **Problems of Cerebral Localization.**—Supervised study continuing Psychology 520. Prerequisite: Psychology 520. [0-0; 1-0]
530. (3) **Projective Techniques.**—Survey and application of projective techniques, major emphasis on Rorschach. Prerequisite: Psychology 400, 403. [3-0; 3-0]
540. (3) **Clinical Techniques.**—Supervised clinical experience in diagnostic testing, interviewing, and other techniques. Prerequisite: Psychology 400, 403. [0-3; 0-3]
541. (3) **Advanced Clinical Techniques.** — Diagnostic testing; emphasis upon application of projective techniques. Prerequisites: Psychology 530, 540. [0-3; 0-3]
549. (3-6) **Master's Thesis.**

Russian

For Honours in Slavonic Studies see pages 106 and 110.

Attention of Third and Fourth Year students is called to Linguistics 319, page 159.

100. (3) **Basic Russian.** — Text-book: Semeonoff, *New Russian Grammar*. [4-0; 4-0]

Note: Several sections of first year Russian are conducted on special lines for science students. Technical vocabulary and reading material are provided in mimeograph.

200. (3) **Russian.**—Second course in the Russian language. Text-book: Semeonoff, *New Russian Grammar*. [3-0; 3-0]

203. (3) **Russian Reading and Conversation.**—More advanced study of Russian morphology, syntax, composition. Scientific study of Russian phonetics. Text-book: Semeonoff, *New Russian Grammar*. Mimeographed notes will be provided. Mr. Sobell. [3-0; 3-0]

300. (3) **Nineteenth and Twentieth Century Russian Literature.**—Texts: Reading in Russian of selected works of Pushkin, Gogol, Tolstoy, Turgenyev, Gorky, Blok. Mr. Wainman and Mr. Barbashoff. [3-0; 3-0]

318. (3) **Early Russian Literature.**—Kievan and Muscovite texts studied with a view to appreciating early social and historical patterns; the Povest; the Byliny; Daniil Zatochnik; the Domostroj, Ivan-Kurbskij correspondence. Text-books: Gudzij, *Khrestomatija po drevnej russkoj literature*; Gudzij, *History of Old Russian Literature*; Tschizewskij, *Altrussische Literaturgeschichte*. Mr. Ferrell. [3-0; 3-0]

319. (3) **Old Church Slavonic.**—Origin of Old Church Slavonic; historical study of its morphology and syntax; Old Church Slavonic and Indo-European; reading and critical interpretation of earliest South Slav and Russian texts. Text-books: Vondrak, *Kirchenslavische Chrestomatie*; Diels, *Altkirchenslavische Grammatik*. Mr. Ferrell. [3-0; 3-0]

400. (3) History of Russian Literature.—Lectures delivered in Russian. References: Pypin, *Istoriya Russkoi Literatury*; Sakulin, *Novaya Literatura*. Mr. Barbashoff and Mr. Ferrell. [3-0; 3-0]

401. (3) The History of the Russian Language. — Texts: Shakhmatov, *Kurs III* (U.B.C. Library mimeographed copy); Bulakhovskij, *Istoricheskiy kommentarij k literaturnomu russkomu yazyku*; Durnovo, *Ocherk istorii russkogo yazyka*; Obnorsky, *Immenoe sklonenie*. Mr. Ferrell. [3-0; 3-0]

402. (3) Introduction to Comparative Slavonic Philology, Part I.—Comparative study of morphology and phonetics of Eastern, Western, and South Slavic. Mimeographed notes will be provided. References: Meillet, *Le slave commun*; Niederle, *Slovanske starozitnosti*; Broch, *Ocherk fiziologii slavjanskoi rechi*. Mr. Sobell and Mr. Dolar-Mantuani. [3-0; 3-0]

502. (3) Comparative Slavonic Philology, Part II.—A further examination of morphemes, accentology and advanced studies in etymology and semantics; a research theme will be assigned to each student. Mimeographed notes will be provided. Mr. Sobell and Mr. Dolar-Mantuani. [3-0; 3-0]

Note: Courses 401, 402 and 502 are essential for students wishing to do research work in the field of comparative Slavonic linguistics, philology and scientific structural analysis.

449. (3) Essay for the Bachelor's Degree.

549. (3) Thesis for the Master's Degree.

Slavonic Studies

(Area Studies of Central and Eastern Europe and Soviet Asia)

For Honours see pages 106 and 110.

Note: Knowledge of Russian is not required in the following courses. See special notice on reverse of front cover of Calendar. International Studies 400 and History 415 count for credit in Slavonic Studies.

205. (3) Economic History and Geography of U.S.S.R. and Eastern Europe.—Study of land, people, natural resources, industry and agriculture, systems of transportation and routes of foreign trade of Russia—Soviet and Tzarist—and of other countries of Eastern Europe. Text-books: Seton-Watson, *Eastern Europe Between Wars*; selected parts from Balzak, Vasjutin, and Feigin, *Economic Geography of the U.S.S.R.* Mr. Ronimois. [3-0; 3-0]

306. (3) Slavonic Literature in Translation.—Literary achievements of the Slavonic peoples, with stress on the important works of 19th and 20th century Russian writers. Text-books: Simmons, *Outline of Modern Russian Literature*; Hare, *Russian Literature*. Selected sections from Pushkin, Gogol, Turgenev, Tolstoy, Dostoyevsky, Gorky, Kataev, Sholokhov, Pilnyak, Simonov. Mr. Wainman. [3-0; 3-0]

308. (3) Expansion of Russia.—Growth of Russian Empire; transition period of the Revolution; consolidation of power of the Communist Party in present day Union of Soviet Socialistic Republics. Text-book: Pares, *History of Russia*. References: Vernadsky, *History of Russia*; Skrine, *Expansion of Russia*; Robinson, *Rural Russia under the Old Regime*. [3-0; 3-0]

310. (3) Culture of the Slavonic Peoples.—Cultural history and ethnography. Text-books: Pares, *History of Russia*; Rose, *Poland*. Mr. Sobell. **Note:** Not given 1950-51. Students desiring to study this subject substitute Slavonic Studies 311. [3-0; 3-0]

311. (3) **Central Europe.**—Ethnography; geographical, natural and economic features; cultural history of Central European Slavonic nations; impact of the Western and Eastern civilizations and the extent of their political and sociological influences; historical changes in pattern of life of peoples of Poland, Bohemia, Hungary and the Hapsburg Monarchy; the German problem; policies and tasks of today; future outlook for this vital middle region between Soviet Russia and the Atlantic Democracies. References: Rose, *Poland*; Strakhovsky, *Handbook of Slavic Studies*; Masaryk, *The Slavs Among the Nations*; Cross, *Slavic Civilization through the Ages*. Mr. Rose. [3-0; 3-0]

312. (3) **Structure and Organization of the Soviet Economy.**—Study of Soviet agriculture, industry, commerce, systems of banking, state revenues, ownership and economic administration. Analysis of planning of agricultural deliveries, industrial production, prices, money and credit, taxation and distribution of labour. Text-book: Baykov, *The Development of the Soviet Economic System*. Mr. Ronimois. [3-0; 3-0]

314. (3) **Theoretical Analysis of Soviet Planning.**—Extension of economic analysis to economic life under various degrees of control; Soviet forms of investment, exchange, costs and profits, capital formation and personal income; structural deficiencies of the Soviet forms of control. Text-book: Ronimois, *Soviet Economic Life and the General Categories of Economic Analysis*. Prerequisite: Economics 200. Mr. Ronimois. [3-0; 3-0]

330. (3) **The German-Slav Conflict During Ten Centuries.**—Mediaeval picture; German advance east and south; Germans and Czechs 1400-1620; Prussians and Poles 1700-1914; Czech revival; problem of Austria-Hungary; the Mitteleuropa design; First World War; rise of Hitler to power; Nazi plans and practice; Second World War; the Nemesis of 1945. References: Dvornik, *The Making of Central Europe*; Seton-Watson, *History of the Czechs and Slovaks*; Wojciechowski, *Poland's Place in Europe*. Mr. Rose. [3-0; 3-0]

412. (3) **The Theory of the Soviet State.**—The Russian background; Soviet form of society; its philosophy, development and interpretation in the light of the logic of economic planning on the one hand and of the official dogma on the other. Text-book: Kelsen, *The Political Theory of Bolshevism*. Mr. Ronimois and members of the Department. [3-0; 3-0]

448. (3) **Seminar on Nationalism in Central and Eastern Europe.**—Meaning of the term; growth since the Middle Ages; political uses of nationalism; Napoleonic wars; Romanticism in literature and life; re-awakening of South Slavs, Czechs and Slovaks; the case of the Ukrainians; Polish struggle for liberation; Messianism; Russian nationalism and the trilogy of Uvarov; impact of cosmopolitanism; Marx, Comte and the Western thinkers; self-determination and its consequences. References: Macartney, *National States and National Minorities*; Seton-Watson, *The Slav Question*. Mr. Rose. [3-0; 3-0]

449. (3) **Essay for the Bachelor's Degree.**

549. (3) **Thesis for the Master's Degree.**

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 of Social Work. Advanced courses normally taken in the Second Year are marked with an asterisk.

Courses in other departments which may be taken for credit by some students in the Second Year are as follows: Anthropology 400 (Cultural

Contact and Change), Architecture 466 (Housing and Planning), Economics 320 (Public Finance), Geography 307 (Human and Cultural Geography), Psychology 403 (Mental Measurement and Psychological Tests).

499. (3) Introduction to Social Work.—Survey of the field of social work, and the functions of professional social workers. Historical background and current practice. Presentation through lectures, visits to agencies, films, discussion, forums. Prerequisite: Fourth Year standing or permission of the Department of Social Work. Mr. Whiten. [3-0; 3-0]

501. (1½) Social Case Work 1.—Philosophy and methods of social case work; helping the individual with problems of social adjustment through the skills of interviewing, socio-personal diagnosis and treatment, the use of personal and community resources. A wide range of cases from actual practice is used for study. Mrs. Exner and others. [3-0; 0-0]

502. (1½) Social Case Work 2.—A continuation of 501. Application of increasing insight and skills in case work with children, families, and adults of all ages. Includes meeting need for financial assistance; foster placement; adoption; services in connection with employment and illness; socio-personal adjustment; help with marital, parent-child and other intra-family problems. Mrs. Exner and others. [0-0; 3-0]

503. (1½) Public Welfare 1.—The development of the field of public welfare demonstrated particularly in child welfare programmes. Miss Smith. [3-0; 0-0]

504. (1½) Medical and Psychiatric Information 1.—The diseases and disorders of the mind and various systems of the body; their relationship with social problems. The social worker's application of this knowledge; effective work with mentally ill, physically ill, or handicapped persons. Miss Johnson and lecturers. [3-0; 0-0]

*** 505. (1) Social Case Work 3.**—Discussion of case work material from various fields of practice with emphasis on greater understanding of behaviour and on the development of skill in treatment. Miss Wolfe. [2-0; 0-0]

*** 506. (1) Social Case Work 4.**—Continuation of 505. Miss Wolfe. [0-0; 2-0]

507. (1½) Social Group Work 1.—Historical development of group work, relation to other methods in social work, present agency settings, trends. Analysis of groups, group process, individual and group behaviour; group-work process, focusing on the role of the group worker in relation to the individual member, the group, the community. Miss Thomas. [3-0; 0-0]

508. (1½) Medical and Psychiatric Information 2.—A continuation of Social Work 504. Miss Johnson and lecturers. [0-0; 3-0]

509. (3) Beginning Field Work.—Practice work under supervision in various social agencies. [see above]

*** 510. (3) Advanced Field Work.**—Supervised practice work during the Second Year required for the Master's degree. [see above]

511. (½) Community Organization.—The problems of identifying social needs in the community and of developing programmes to meet them. The function of coordinating agencies in the community; the place of the professional social worker in social planning. [3-0; 0-0]

512. (1½) Community Resources.—The observation of, orientation to and use of social, medical, and recreational agencies in the community. A special course designed for students who will be taking a block placement in field work in the January to April term. [3-0; 0-0]

513. (1½) Public Welfare 2.—Principles and policies of public welfare exemplified in public welfare and assistance legislation; social security principles; treatment of the adult offender; mental hygiene programmes; housing policies; vocational rehabilitation services; administration and financing. Mr. Dixon. [0-0; 3-0]

517. (1½) Social Group Work 2.—Examination of principles and practices of the social group worker developing relationships and use of programme as a tool. Beginning differentiations in approach to individuals and groups. Miss Thomas. [0-0; 3-0]

518. (1½) Development of Personality.—An understanding of the "person as a whole" in his various phases of development. The psychosomatic and analytic approach to the individual pattern of life with its manifest as well as its unconscious motivation. Dr. Lindenfeld. [3-0; 0-0]

520. (1) Social Research 1.—The development and special character of research in the social sciences. Research methods relevant to social work; case study, historical methods, the social survey, etc. Basic statistical techniques, including practical work. Mr. Marsh. [0-0; 3-0]

*** 540. (1) Medical and Psychiatric Information 3.**—A series of clinics (in which doctors, nurses, administrators and social workers participate) based on a group of mental and physical disorders selected for their social implications. Inter-agency and inter-professional relationships as they affect the medical, social and administrative aspects of these illnesses. Miss Johnson. [2-0; 0-0]

*** 545. (1) Social Work and the Law.**—Principles of law with which the social worker should become familiar; structure of the court system; problems of judicial administration and law which particularly affect persons with low incomes. [2-0; 0-0]

*** 546. (1½) Administration of Social Agencies.**—Basic principles of administration and organization. Finance, personnel practices, public relations, office procedures. Miss Smith. [0-0; 3-0]

*** 559. (1) Probation Methods.**—Probation, its definition, legal provision and extent in Canada; probation and parole; casework in probation; work of probation officers; pre-sentence reports; historical development of probation. Modern principles of penology. Mr. Stevens. [2-0; 0-0]

*** 560. (1) Legal Protection of the Child.**—The administration of statutes designed to protect the child, from the standpoint of health, education, employment, dependency, and general welfare. [0-0; 2-0]

*** 563. (1½) Social Group Work 3.**—Advanced social group work practice. Intensified understanding of individual and group behaviour. The group worker as a skilled leader in leisure-time agencies, "sheltered" groups, near-delinquent groups, institutional and hospital settings. Integration of understanding of psychological needs with use of programme media at intensive levels. Specialized problems of certain age and ethnic groups. Miss Thomas. [3-0; 0-0]

*** 565. (1) Methods in Community Organization.**—An advanced course in methods and techniques of community organization.

*** 568. (1½) Public Welfare 3 (Social Insurance).**—Nature and development of social insurance; principles of existing systems; place of social insurance in a comprehensive social security programme; function of the social worker in the administration of social insurance. Existing and proposed schemes of workmen's compensation, disability insurance, unemployment insurance, health insurance, old age and survivors' insurance, and family allowances. Mr. Dixon. [3-0; 0-0]

* 569. (1) **Seminar in Public Assistance Practice.**—Discussion of case studies from public assistance programmes. Administrative, case work, community aspects.

* 570. (1) **Seminar in Foster Care Programmes.**—Institutional and foster home care for children. Mrs. Exner. [0-0; 2-0]

* 572. (1) **Behaviour Problems of Children.**—Case studies and discussion of children having difficulties adjusting themselves at home, in the foster home, at school, in the community. Dr. Lindenfeld. [0-0; 2-0]

* 573. (1) **Seminar in the Problems of Old Age.**—Discussion of case studies involving problems of assistance, housing, medical care, social relations. [0-0; 2-0]

* 575. (1½) **Seminar in Supervision.**—Discussion centering on the psychological factors in the supervisory situation, the educational aspects of supervision, and the handling of evaluations and individual and group conferences. Miss Wolfe. [0-0; 3-0]

* 580. (1) **Social Group Work 4.**—Continuation of 563. Cooperative, intensive work between social group worker and caseworker. Understanding of work with groups under psychiatric direction. Miss Thomas. [0-0; 2-0]

* 581. (1½) **Seminar in Advanced Case Work.**—Discussion of advanced problems in case work. Administrative and community aspects. [0-0; 2-0]

* 582. (1½) **Public Welfare 4.**—Public administration in modern society; its development in Canada. Principles of organization; the function of the executive; public welfare departments at national, provincial and local levels; personnel; functions of research; fiscal administration; supervision; public relations. Mr. Dixon. [0-0; 3-0]

* 583. (1½) **International Welfare.** — Comparative programmes; international cooperation in social welfare. [0-0; 2-0]

* 584. (1½) **History of Social Welfare.**—A study of the backgrounds of present day social agencies and programmes, particularly the history of the English Poor Laws, how they affected the development of public welfare, and the rise of voluntary agencies and reform movements in Europe, England, and North America. Miss Smith.

* 585. (3) **Social Research 2.**—Formulating and planning of social welfare studies; the analysis of material; the writing of reports. Seminars supplemented by individual consultations. Mr. Marsh. [3-0; 3-0]

Sociology

The prerequisite for Third and Fourth Year courses in Sociology is either Economics 200 or Sociology 200. The prerequisite may be taken concurrently with the advanced courses.

For Honours courses in Sociology see pages 106, 110.

200. (3) **Introduction to Sociology.** — The significance of geographic, biological, psychological, and cultural factors in the rise, growth and functioning of groups; the interrelations of fundamental principles and of the institutions of the local community; social problems. Text-books: La Piere, *Sociology*; Cuber, *Sociology*. Third and Fourth Year students taking this course will be required to do an essay and additional reading. Mr. Topping. [3-0; 3-0]

300. (3) **Criminology.**—Analysis of contemporary findings on causation in juvenile delinquency and adult crime; reformist programmes and current treatment. Text-books: Barnes and Teeters, *New Horizons in Criminology*; Reckless, *The Crime Problem*. Mr. Topping. [3-0; 3-0]

335. (3) Ethnic and Status Groups.—Organization, acculturation, and differentiation of ethnic groups; segregation, discrimination; social stratification; status; selective immigration, assimilation, ethnic pluralism. Readings to be assigned. (Not given 1950-51). [3-0; 3-0]

400. (3) The Dynamic Family.—Genetic rise of family; function; social change; disintegration; rehabilitation and facilitation. Text-books: Burgess and Locke, *The Family*; Nimkoff, *Marriage and the Family*. (Not given 1950-51). [3-0; 3-0]

425. (3) The Urban Community.—Ecology of the city; personalities; problems; control. Text-book: Gist and Halbert, *Urban Society*, third edition. (Not given 1950-51). [3-0; 3-0]

426. (3) The Rural Community.—Comparative study of rural communities with special emphasis on population elements, structure, ecological organization, process and function. Text-books: Lands, *Rural Life in Process*; Nelson, *Rural Sociology*. (Not given 1950-51). [3-0; 3-0]

430. (3) Social Problems and Social Policy.—Significant modern Canadian social problems with suggested solutions. Readings to be assigned. Mr. Topping. [3-0; 3-0]

435. (3) Sociological Theory.—The central trend of sociological theory with special emphasis on recent developments. Text-book: Gurvitch and Moore, *Twentieth Century Sociology*. (Not given 1950-51). [3-0; 3-0]

440. (3) Honours Seminar.—Reports and discussions under staff direction of advanced sociological theory and practice for third year Honours credit. Credit requisite: Honours or graduate standing. [2-0; 2-0]

441. (3) Honours Seminar.—Same as 440 for fourth year Honours credit. Credit requisite: Honours or graduate standing. [2-0; 2-0]

449. (3) Honours Essay.—Comprehensive essay on some theoretical or institutional problem to be selected in consultation with the departmental staff. Must be submitted in final form on or before the beginning of the examinations preceding the Congregation at which the candidate expects to receive his degree.

540. (3) Master's Seminar.—Readings, consultations and reports on such phases of contemporary theory and institutional practice as may be designed to meet the needs of candidates for the Master's degree in Sociology. May be held concurrently with Honours seminars. Credit prerequisite: graduate standing. [2-0; 2-0]

549. (3) Master's Thesis.—An original and comprehensive treatment of some theoretical or institutional sociological problem to be selected in consultation with the departmental staff. Must be submitted in final form on or before the beginning of the examinations preceding the Congregation at which the student expects to receive the degree.

Other Courses which Qualify for Honours or Graduate Credit in Sociology

Anthropology.—All courses in Anthropology qualify for credit in Sociology.

Home Economics 421. (3).

Psychology 201. (3).

Philosophy 304. (3).

Social Work 499. (3).—Introduction to Social Work; accepted without qualification for General, Honours, or Graduate students.

Geography 201. (3).

- Geography 307. (3).
 Architecture 466. (3).
 Slavonic Studies 311. (3).
 Slavonic Studies 330. (3).

Spanish

For the terms under which Spanish may satisfy the language requirements, see pages 97-99. For Honours courses in Spanish see pages 106 and 110.

90. (3) **Beginners' Course.**—Grammar, composition, translation, conversation. Texts: Kasten and Neale-Silva, *Lecturas Escogidas*; Brenes and Patterson, *Conversemos*; McSpadden, *Spanish Usage for Beginners*. [4-0; 4-0]

101. (3) Review of grammar; composition, translation, conversation.

[3-0; 3-0]

201. (3) Study of modern authors; assigned themes in Spanish; conversation. Texts: Mitchell, *Intermediate Spanish Composition*; Kasten and Neale-Silva, *Lecturas Amenas*; Adams, *Espana, Introduccion a Su civilizacion*.

[3-0; 3-0]

301. (3) **The Golden Age.**—Spanish literature of the sixteenth and seventeenth centuries.

[3-0; 3-0]

302. (3) **Modern Authors.**—Study of leading representatives of Neo-Classic, Romantic, Realistic, Naturalistic and Modernist trends and the age in which these authors lived. Texts: to be announced. (Given in 1951-52, and in alternate years).

[3-0; 3-0]

304. (3) **Advanced Conversation and Composition.**—Practice in pronunciation, conversation, and brief talks; study of model passages from contemporary writers; directed and free composition on aspects of Hispanic life and culture. (Given in 1950-51, and alternate years).

[3-0; 3-0]

320. (3) **Contemporary Spanish Poetry.**—This course will deal mainly with the poetry of Juan Ramón Jiménez, Antonio Machado, Pedro Salinas, Jorge Guillén, Federico García Lorca and Rafael Alberti. (May not be given 1950-51).

[3-0; 3-0]

401. (3) **The History of the Spanish Language.**—Text-book: Spaulding, *How Spanish Grew*.

[3-0; 3-0]

402. (3) **Cervantes, Don Quijote.**—Reading and interpretation of the *Quijote*, with lectures and special reports. Text: Cervantes, *El Ingenioso Hidalgo Don Quijote de la Mancha*. (Given in 1951-52, and in alternate years).

[3-0; 3-0]

403. (3) **Commercial Spanish.**—(Not given in 1950-51).

[3-0; 3-0]

404. (3) **Spanish American Authors.**—Study of representative writers who depict Spanish American thought, and life, consideration of literary trends, and of historical and geographical factors. Text: Hespelt and others, *An Anthology of Spanish American Literature*. (Given in 1950-51, and in alternate years).

[3-0; 3-0]

412. (1) **Cervantes in English.**—Reading and interpretation of *Don Quixote* for students who do not read Spanish. Not open to students enrolled in Spanish 402. Text: Cervantes, *Don Quixote*, trans. Samuel Putnam. (Given in 1951-52, and in alternate years).

[1-0; 1-0]

501. (3) **Directed Studies.**—In special cases and with the approval of the Department a student in attendance may carry on directed studies to supplement another course in the Department.

449. (3-6) **Graduating Essay for the B.A. Degree.**

549. (3-6) **Master's Thesis.**

Zoology

Biology 100 is prerequisite to all courses in Zoology.

For Honours courses in Zoology see page 106.

Students majoring or taking Honours in Zoology may take Biology 330, 400, 431, Agronomy 421, Mathematics 405, 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 200 and may be taken concurrently with Geology 406.

The attention of students is called to the possibility of specialization in certain fields of applied zoology. Students desiring to enter any of the following fields should consult with the Head of the Department.

Fisheries

Students desiring training in various fields related to Fisheries may obtain instruction by a judicious selection of courses offered in various departments of the University. The following programmes are now available and special graduate courses in Fisheries and Fisheries Technology may be arranged to suit the needs of certain students. Those interested may obtain advice from Mr. Hoar.

- a. **Biological Research.**—Students are advised to take the Honours course in Zoology followed by graduate work leading to the Master's degree. Pertinent courses are: Zoology 307, 403, 404, 406, 412, 413, 501, 504, 508, Agronomy 421, Botany 411, Mathematics 405.
- b. **Commerce.**—Students in Commerce may elect a Fisheries Option during their Fourth and Fifth Years (see page 113).
- c. **Food Technology.**—Students may take the course in Food Technology in the Faculty of Agriculture and choose courses in Zoology as electives. These courses may include Zoology 200, 307, 403, 405, 411. The programme will provide training for positions in fisheries food technology either with the industry or the government fisheries experimental stations.

Wildlife Management

Courses of study permitting a student to enter this field of applied zoology can be obtained either through the B.A. degree or the B.S.F. degree. In both instances the Master's degree is essential and students should not attempt to enter the field unless they can meet the academic requirements for it.

The course of study in Arts and Science begins in the Second Year and is predicated upon a First Year course including Biology 100, Chemistry 100 or 101, a language, English 100 and 101, and Mathematics 101. For details of the course of study in Forestry see under "Applied Science".

Economic Entomology

A student may specialize in one of the following fields:

- a. **Agricultural Entomology.**—A suitable training may be gained within either the B.A. Honours course or the B.S.A. Honours. Students in the B.A. course who have not had general farming experience should include as prerequisites, Animal Husbandry 215, Agronomy 202, Horticulture 213 and 317. Students in the B.S.A. course who intend to major in Entomology must have passed Zoology 200. Zoology 302, 305, 401 and 404 should be included in the course of study.

Students entering these fields must be prepared to continue to at least the Master's degree at this or another university.

- b. **Food Technology.**—Students in the Food Technology programme in the Agriculture Faculty who will come in contact with insects of field and vegetable crops and pests of stored products are advised to take Zoology 302 and 305; Zoology 200 is not prerequisite in this instance.
- c. **Forest Entomology.**—Students in Applied Science studying for the B.S.F. degree, or Honours students in Zoology may elect to specialize in forest entomology. Minimum requirements are as follows:
 B.S.F. students: Zoology 200, 302, 308, 402; Zoology Honours students: Zoology 302, 306, 308, 400, 402, 404, 408; Biology 330; Chemistry 300; Forestry 160, 350, 360.

Students expecting to gain permanent employment in this field must be prepared to proceed to at least the Master's degree.

200. (3) General Zoology.—Structure, classification, life histories, and biology of animals.

This course is prerequisite to other courses in Zoology except in the case of students in Agriculture and Forestry who wish to take courses in entomology but do not intend to major in it.

Text-book: Storer, *General Zoology*. Mr. Adams. [2-3; 2-3]

300. (3) Comparative Anatomy of Vertebrates.—Phylogeny and comparative anatomy of vertebrates and protochordates; dissection of representative forms. Text-book: Adams and Eddy, *Comparative Anatomy*. Laboratory Manual: Breland, *Manual of Comparative Anatomy*. Mr. Cowan. [2-3; 2-3]

301. (3) Invertebrate Zoology. — Anatomy, taxonomy, life histories of invertebrates with special reference to marine forms. Text-book: Parker and Haswell, *A Textbook of Zoology*, Vol. 1, 6th edition. Mr. Clemens. [2-3; 2-3]

302. (3) Introduction to Entomology.—Morphology, classification, life histories and interrelations of insects; determination of common forms.

A collection of at least one hundred insects representative of all common orders must be made before starting this course. Leaflets describing the making of such collections should be obtained from the office of the Department of Zoology.

Text-book: Matheson, *Entomology for Introductory Courses*. Laboratory Manual: Matheson, *A Laboratory Guide to Entomology*. Mr. Spencer. [2-3; 2-3]

303. (3) Histology.—Tissues and microscopic anatomy of animals with especial reference to mammals; methods in histology, fixing, embedding, sectioning, staining. Text-book: Clark, *The Tissues of the Body*, 2nd edition. Mr. Ford. [2-3; 2-3]

304. (3) Comparative Vertebrate Embryology. — Text-book: McEwen, *A Textbook of Vertebrate Embryology*. Mr. Ford. [2-3; 2-3]

305. (2) Economic Entomology.—Relation of insects to man, his crops, and domestic animals; bionomics and control of economic forms; natural control.

Students taking this course must have a collection of at least fifty species of insects of economic importance.

Text-book: Metcalf and Flint, *Destructive and Useful Insects*, 2nd edition. References: Wardle and Buckle, *The Principles of Insect Control*; Wardle, *The Problems of Applied Entomology*. Prerequisite: Zoology 302. Mr. Spencer. [0-0: 3-3]

306. (3) Biology of the Vertebrates.—The vertebrates, chiefly of British Columbia; identification of species; observational methods of study of behaviour and habitat relations; systematics, distribution, and speciation; methods of preservation for museum study. Laboratory Manual: Pettingill, *A Laboratory and Field Manual of Ornithology*. Mr. Cowan. [1-4; 1-4]

307. (2) Biology of Fishes.—Classification, identification, life histories, ecology of fishes. Text-books: Norman, *A History of Fishes*; Clemens and Wilby, *Fishes of the Pacific Coast of Canada*; Carl and Clemens, *The Fresh-water Fishes of British Columbia*. Mr. Hoar. (Given in 1951-52, and alternate years). [2-3; 2-3]

308. (3) Principles of Forest Entomology.—Insects in relation to forestry; historical and biological accounts of important species, their recognition, damage, economic significance; outbreaks; population sampling and forecasting; natural and applied control. Mr. Graham. [2-2; 2-2]

400. (2) History and General Principles of Biology.—Lectures and seminars dealing with the principles and most recent advances in biology. Mr. Clemens. [2-0; 2-0]

401. (2) Practical Entomology.—Habitat studies of local representatives of all insect orders; collecting, preserving, mounting, dissecting, sectioning equipment and technique; clearing methods; meteorological instruments and records; rearing methods and equipment; elements of insect photography. Students will rear certain insects under natural and controlled conditions. References: Peterson, *Manual of Entomological Equipment and Methods*, Parts I and II; Kingsbury and Johannsen, *Histological Technique; The Meteorological Observer's Handbook*, 1939; *Culture Methods for Invertebrate Animals*; Shelford, *Laboratory and Field Ecology*. Prerequisite: Zoology 302. Mr. Spencer. [2-4; 0-0]

402. (3) Applied Forest Entomology.—Planning and conducting investigations and control projects on forest insects; population surveys; sampling; evaluation of population status and trend; methods in studying biometrics; population dynamics; organization and analysis of data; control operations. Mr. Graham. [2-2; 2-2]

403. (2) Fisheries Economics and Management.—Canadian fishing industry and its research problems; populations of important food fishes and factors affecting them; estimations of growth rates, mortality rates and fishing intensity. Prerequisite: Agronomy 421 or equivalent. Mr. Hoar. (Given in 1950-51 and alternate years). [1-2; 1-2]

404. (3) Experimental Zoology. — Relations of temperature, pressure, light, humidity, salinity, gases, etc., to animals and animal populations. Text-book: Heilbrunn, *Outline of General Physiology*. Mr. Hoar. [1-4; 1-4]

405. (1½) Fisheries Technology.—Handling, preparation, and preservation of fish. Practical work under the direction of the staff of the Pacific Fisheries Experimental Station in its laboratories. Course is open to students in the Commerce-Fisheries option and in Food Technology. Mr. Carter, Mr. Hoar. [1-4; 0-0]

406. (3) Parasitology.—Classification, morphology, life histories of animal parasites affecting domestic and wild animals and man. Text-book: Chandler, *Introduction to Parasitology*, 8th edition. Laboratory Manual: Cable, *An Illustrated Laboratory Manual of Parasitology*. Mr. Adams. [2-3; 2-3]

407. (3) Insect Morphology and Taxonomy. — External morphology, wing venation, systematics and taxonomy.

Students must present a collection of at least three hundred insects representing all orders.

Text-book: Snodgrass, *Principles of Insect Morphology*. References: Mac-

Gillivray, *External Insect Anatomy*; Comstock, *The Wings of Insects*; Ferris, *The Principles of Systematic Entomology*; Blatchley, *Coleoptera of Indiana*; Brues and Melander, *Classification of Insects*; Viereck, *Hymenoptera of Connecticut*. Prerequisite: Zoology 302. Mr. Spencer. [2-3; 2-3]

408. (1) Biological Methods and Procedures.—Scientific method of inquiry, organization of research material, use of literature, rules of nomenclature, preparation of manuscripts and illustrative material. Mr. Clemens, Mr. Spencer, Mr. Cowan, Mr. Hoar. Required of all Honours and Graduate students. [2-0; 0-0]

409. (1½) Principles of Wildlife Biology and Conservation.—Biological principles in conservation of economically important birds and mammals. Text-book: Leopold, *Game Management*. Prerequisite: Zoology 306. Mr. Cowan. [2-0; 0-0]

410. (1½) Biology and Management of Upland and Farm Game.—Identification, biology, ecology of the gallinaceous birds, factors affecting status, management techniques, field study. Text-book: Trippensee, *Wildlife Management*. Prerequisites: Zoology 306 and 409. Mr. Hatter. [0-0; 1-3]

411. (1½) Technology of Marine Products.—Advanced course in fisheries food technology. Practical work and special lectures at the Pacific Fisheries Experimental Station. Course open to students in Food Technology. Prerequisite: Zoology 405. Mr. Carter. [0-0; 2-2]

412. (3) Comparative Physiology.—Comparative animal physiology, with particular reference to invertebrates and cold-blooded vertebrates. Text-book: Scheer, *Comparative Physiology*. Prerequisite: Chemistry 425, which may be taken concurrently. Mr. Hoar. (Given in 1950-51, and alternate years). [1-4; 1-4]

413. (2) Limnology.—Physical, chemical and biological factors of lakes and streams in relation to productivity. Text-books: Welch, *Limnology*; Ward and Whipple, *Freshwater Biology*. Prerequisites: Zoology 301, 307. Mr. Larkin. [0-0; 2-4]

449. (3) Graduating Essay.—Honours Students in their final year are required to undertake an investigation approved by the Head of the Department. An essay embodying the results of their work must be presented and will be critically reviewed at an oral examination.

Courses for Graduate Students

500. Special Advanced Course.—A special advanced course correlated with the work for the major thesis may be arranged for a graduate student upon the approval of the Head of the Department of Zoology. The credit shall not be more than 3 units.

501. (2) Marine Zoology.—Life histories, ecology and systematics of marine animals. Mr. Clemens. [1-3; 1-3]

502. (3) Insect Internal Anatomy and Physiology.—Text-books: Snodgrass, *Principles of Insect Morphology*; Wigglesworth, *The Principles of Insect Physiology*. Prerequisites: Zoology 302, 407, Chemistry 300. Mr. Spencer. [2-3; 2-3]

503. (1½) Biology and Management of Forest and Wilderness Game.—Biology, ecology, management of the large ungulates, carnivores and fur bearers of Canada. Prerequisite: Zoology 409. Mr. Cowan. [0-0; 2-0]

504. (2) Advanced Experimental Zoology.—Lectures, seminars and directed research in the environmental physiology of fishes and game animals. Prerequisites: Zoology 404, 412. Mr. Hoar. (Given in 1951-52 and alternate years). [1-3; 1-3]

505. (3) Vertebrate Morphogenesis.—Development of animals, tracing of causal factors in embryogeny, regeneration. Text-book: Weiss, *Principles of Development*. Mr. Ford. [2-2; 2-2]

506. (3) Advanced Parasitology.—Seminars and laboratory work mainly on parasitic protozoa and helminths; taxonomy, identification, life cycle studies, physiological requirements of parasites, culture methods and other laboratory techniques. Mr. Adams. [1-4; 1-4]

507. (3) Forest Insect Ecology.—Forest insects in relation to environment and living associations; macro- and micro-climatic influences on development, fecundity, survival, dispersal, geographic distribution; forest influences on food supply; insect influences on forest; inter- and intra-specific competition; succession of species; predation and parasitism; population dynamics, outbreak cycles; adaptations; evolution of new strains. Prerequisite: Zoology 308. Mr. Graham. [2-2; 2-2]

508. (2) Population Dynamics.—Characteristics of growth and fluctuation of animal populations, the physico-chemical and biotic factors, interspecific relations and mathematical expressions, relation of population fluctuation to evolution. Some knowledge of statistics required. Mr. Larkin. [2-0; 2-0]

509. (1½) Biology and Management of Waterfowl.—North American waterfowl problems: life histories, distribution, food habits, environmental requirements of economically important species; management techniques, problems in conservation and related theoretical considerations. Prerequisites: Zoology 306 and 409. Mr. Hatter. [1-3; 0-0]

510. (1) Fishculture.—Principles of development and nutrition of fish in relation to natural and artificial propagation, e.g. egg collecting techniques, hatchery procedures, young fish diets, young fish distribution, stream improvements. Prerequisites: Zoology 307, 404. Mr. Larkin. [0-0; 2-0]

511. (1) Introduction to Biological Oceanography.—Biology of the sea related to physical and chemical conditions. Prerequisites: Oceanography 500, Physics 536. Mr. Cameron. [0-0; 2-0]

512. (2) Advanced Biological Oceanography.—Collection, identification, enumeration of marine plankton; correlation of distribution with environment. Prerequisites: Oceanography 500, 501; Chemistry 509; Physics 536; Zoology 511. Mr. Cameron. [1-3; 1-3]

549. (6) M. A. Thesis.

649. Ph.D. Thesis.

1950-51

THE
FACULTY
OF
APPLIED SCIENCE

(ARCHITECTURE; ENGINEERING; FORESTRY;
NURSING AND HEALTH)

1930-1951

1950-51

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 training is the best yet devised for a large and increasing proportion of the administrative, supervisory, and technical positions. Consequently the undergraduate course is made broad and general rather than narrow and highly specialized.

A course of this kind 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 not only gives 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 practice engineering.

Students in Engineering 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.

In order to practice forestry in the Province of British Columbia it is necessary to be registered as a member of the Association of British Columbia Foresters. A forestry graduate (B.A.Sc. in Forest Engineering or B.S.F.) from the Faculty of Applied Science, University of British Columbia may become registered after he has completed two years of forestry work and has submitted a satisfactory thesis.

Admission

The general requirements for admission to the University are given on pages 38-41.

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 in an approved university.

Required subjects are:

English 100 and 101

Mathematics 101

Chemistry 100 or 101

Physics 100* or 101*

Language: one of the following—Latin 101, French 101,
German 90, 100, 101, Russian 100.

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 207 and 211.

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 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 Architecture or whether he might prefer to proceed in other courses without loss of time.

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., of B.A. and B.Arch., or of B.A. and B.S.F., should consult the section "Double Degrees".

Students intending to enter Applied Science are advised to present Chemistry 91, Mathematics 91, and Physics 91 for University Entrance.

Degrees

The degrees offered students in this Faculty are:

Bachelor of Applied Science (B.A.Sc.). (See page 191).

Bachelor of Science in Forestry (B.S.F.). (See page 199).

Bachelor of Architecture (B.Arch.). (See page 212).

*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 or 101.

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.

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

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 193) 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.

*The curriculum described in the following pages may be changed from time to time as deemed advisable by the Senate.

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 approach to 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 215.

Courses

First and Second Years

The work of both years is the same in all curricula, except those in Nursing and Health, Forestry, Forest Engineering, and Architecture.

No student with defective standing will be admitted to First or Second Year Applied Science.

In First Year Nursing D, students are required to present an essay as indicated on page 235.

Two activity courses in Physical Education are required of all students in First Year Applied Science, except ex-service personnel and members of military units operating on the campus. For details of requirements see page 115 in the Faculty of Arts and 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. The essays shall be handed in to the Dean not later than November 15th.

First Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Math. 150 Trigonometry and Geometry.....	230	2	.....	2	.....
Math. 151 Algebra and Calculus.....	231	2	.....	2	.....
Math. 152 Calculus.....	231	2	.....	2	.....
M.E. 152 Drawing.....	231	.....	3	.....	3
Physics 150 Mechanics.....	236	3	3	.....	.....
Physics 151 Heat.....	236	.....	.....	3	3
*Chem. 150 Qual. Analysis.....	220	1	3	1	3
C.E. 150 General Engineering.....	221	1	.....	1	.....
C.E. 155 Graphical Statics.....	221	.....	2	.....	2
C.E. 160 Engineering Problems 1.....	221	.....	4	.....	4
English 150 Composition.....	226	2	.....	2	.....
†For. 151 Profession of Forestry.....	226	1	.....	1	.....
†For. 252 Forest Botany.....	226	2	2	2	2

Second Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Eng. 298 Essay.....	192	.....	.....	.....	.....
Math. 250 Calculus.....	231	3	.....	3	.....
Math. 251 Geometry.....	231	2	.....	2	.....
*Chem. 250 Quan. Analysis.....	220	1	3	1	3
Physics 250 Electricity.....	236	2	3	2	3
C.E. 250 Field Work and Mapping.....	222	.....	4	.....	4
C.E. 251 Surveying 1.....	222	2	.....	2	.....
C.E. 255 Descriptive Geometry.....	222	.....	3	.....	3
C.E. 260 Mechanics and Engineering Problems 2.....	222	2	3	2	3
Geol. 200 General Geology.....	149	2	2	2	2
English 250 Technical Writing.....	226	1	.....	1	.....
†For. 250 Silvics.....	226	.....	.....	1	2
†For. 251 Fire Protection.....	226	1	2	1	2
†For. 253 Forest Soils.....	226	1	2	.....	.....

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, Fourth Year Geological Engineering, or Fourth Year Agricultural 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 illustration.

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.

‡Architecture students should consult page 212.

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 acknowledgement 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 1st. **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 approved 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

For courses in First and Second Years see page 193.

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
A.E. 398 Essay.....	193	.....	.....	.....	.....
M.E. 352 Mechanical Drawing.....	231	At end of 2nd Term, 2nd Year			
C.E. 355 Strength of Materials.....	222	2	3*	2	3*
C.E. 357 Materials Testing.....	222	.....	3*	.....	3*
C.E. 360 Hydraulics.....	222	1	2	1	2
M.E. 356 Machine Shop Practice.....	231	.....	2	.....	2
M.E. 361 Kinematics of Machines.....	231	3	2	.....	.....
M.E. 371 Applied Thermodynamics.....	232	2	3	2	3
A.E. 350 Agricultural Power.....	216	2	3	2	3
A.E. 351 Machinery.....	216	2	3	2	3
Agric. Econ. 300 Farm Management.....	216	2	2	2	2
Agron. 211 Soils.....	216	2	2	2	2

*Alternate weeks.

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
C.E. 475 Engineering Economics.....	224	1	1	1	1
E.E. 451 Electrical Circuits.....	225	2	2	2	2
M.E. 363 Machine Design.....	231	.....	.....	3	2
M.E. 365 Dynamics of Machines.....	231	2	.....	2	.....
M.E. 477 Heating and Ventilating.....	232	2	.....	2	3
Met. 351 Physical Metallurgy.....	233	2	.....	2	.....
Met. 352 Metallography.....	233	.....	3*	.....	3*
A.E. 450 Agricultural Buildings.....	216	1	4	1	4
A.E. 451 Adv. Agric. Engineering.....	216	2	2	2	2
A.E. 456 Shopwork.....	216	.....	3*	.....	3*
A.E. 460 Irrigation and Drainage.....	216	2	3	2	3
A.E. 470 Rural Electrification.....	216	2	3	.....	.....
A.E. 499 Thesis.....	216	.....	3	.....	3

2. Chemical Engineering

For courses in First and Second Years see page 193.

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Chem. 398 Essay.....	193	.....	.....	.....	.....
M.E. 352 Mechanical Drawing.....	231	At end of 2nd Term, 2nd Year			
C.E. 355 Strength of Materials.....	222	2	3*	2	3*
C.E. 357 Materials Testing.....	222	.....	3*	.....	3*
Math. 350 Differential Equations.....	231	3	.....	3	.....
Met. 351 Physical Metallurgy.....	233	2	.....	2	.....
Met. 352 Metallography.....	233	.....	3*	.....	3*
Physics 360 Light.....	236	1	.....	1	.....
Chem. 300 Organic.....	133	3	3	3	3
Chem. 304 Physical Chemistry.....	133	2	3	2	3
Chem. 350 Introduction to Chemical Engineering.....	220	3	.....	3	.....
Chem. 351 Industrial Stoichiometry.....	220	2	.....	2	.....
Chem. 352 Advanced Quantitative Analysis.....	220	1	2	1	2
Chem. 360 Chem. Eng. Laboratory.....	220	.....	3	.....	3

*Alternate weeks.

NOTE.—For courses for graduate students, see page 221.

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Chem. 498 Summer Reading.....	221	.....	.....	.....	.....
E.E. 451 Electrical Circuits.....	225	2	2	2	2
Chem. 407 Physical Chemistry.....	133	3	3	3	3
Chem. 450 Chem. Eng. Theory.....	220	3	.....	3	.....
Chem. 451 Chem. Eng. Thermodynamics.....	220	1	.....	1	.....
Chem. 452 Instrumentation.....	220	1	.....	1	.....
Chem. 453 Plant Design.....	220	1	.....	1	.....
Chem. 458 Electro-chemistry.....	221	2	1½	2	3
Chem. 459 Qual. Organic Anal.....	221	1	4½	.....	.....
Chem. 460 Chem. Eng. Laboratory.....	221	.....	6	.....	3
Chem. 499 Thesis.....	221	.....	3	.....	9

3. Civil Engineering

For courses in First and Second Years see page 193.

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
C.E. 398 Essay.....	193	.....	.....	.....	.....
C.E. 350 Surveying Field Work.....	222	At end of 2nd Term, 2nd Year			
C.E. 351 Surveying 2.....	222	2	.....	2	.....
C.E. 352 Mapping 2.....	222	.....	3*	.....	3*
C.E. 353 Drawing.....	222	.....	3*	.....	3*
C.E. 355 Strength of Materials.....	222	2	3*	2	3*
C.E. 356 Materials Testing.....	222	1	3*	.....	3*
C.E. 361 Hydraulics.....	223	1	3	1	3
C.E. 365 Foundations.....	223	2	3	.....	.....
C.E. 366 Earth Pressure.....	223	.....	.....	2	.....
C.E. 370 Structural Design 1.....	223	2	3	2	3
C.E. 375 Railways.....	223	2	.....	2	.....
C.E. 380 Seminar.....	223	1	.....	1	.....
M.E. 371 Applied Thermodynamics.....	232	2	3	2	3

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
C.E. 498 Essay.....	193	.....	.....	.....	.....
C.E. 380 Seminar.....	223	1	.....	1	.....
C.E. 450 Surveying Field Work.....	223	At end of 2nd Term, 3rd Year			
C.E. 455 Theory of Structures.....	223	2	6	.....	.....
C.E. 460 Structural Design 2.....	223	2	3	2	6
C.E. 461 Reinforced Concrete Design.....	223	2	3	.....	4
C.E. 465 Municipal Engineering.....	223	2	2	2	2
C.E. 466 Water Power Development.....	224	.....	.....	2	2
C.E. 470 Highway Engineering.....	224	2	.....	2	2
C.E. 475 Engineering Economics.....	224	1	1	1	1
C.E. 476 Engineering Law.....	224	1	.....	1	.....
E.E. 451 Electrical Circuits.....	225	2	2	2	2

*Alternate weeks.

NOTE.—The sum of \$3.00 as caution money must be deposited before the opening of the course in Surveying Field Work.

For courses for graduate students see page 224.

4. Electrical Engineering

For courses in First and Second Years see page 193.

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
E.E. 398 Essay.....	193	.....	.....	.....	.....
M.E. 352 Mechanical Drawing.....	231	At end of 2nd Term, 2nd Year			
C.E. 355 Strength of Materials.....	222	2	3*	2	3*
C.E. 357 Materials Testing.....	222	.....	3*	.....	3*
C.E. 360 Hydraulics.....	222	1	2	1	2
Math. 350 Differential Equations.....	231	3	.....	3	.....
M.E. 358 Machine Shop Practice.....	231	.....	3*	.....	3*
M.E. 365 Dynamics of Machines.....	231	2	.....	2	.....
M.E. 375 Applied Thermodynamics.....	232	3	3	3	3
E.E. 353 D.C. Machines.....	225	2	.....	1	.....
E.E. 355 A.C. Circuits.....	225	1	.....	2	.....
E.E. 356 Electrical Engineering Laboratory.....	225	.....	3	.....	3
E.E. 357 Electronics and Electron Tubes.....	225	2	2*	2	2*

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
E.E. 498 Essay.....	193	.....	.....	.....	.....
C.E. 475 Engineering Economics.....	224	1	1	1	1
M.E. 467 Mechanical Design.....	232	2	.....	2	.....
E.E. 457 Principles of A.C. Machines.....	225	3	6	3	6
E.E. 459 Electrical Machine Design.....	225	1	3	1	3
E.E. 461 Illuminating Engineering.....	225	2	.....	.....	2
E.E. 463 Electric Power Transmission.....	225	2	2	2	2
E.E. 465 Electrical Communication.....	225	2	3	2	3
E.E. 467 Instruments and Measurements.....	225	2	.....	2	.....

*Alternate weeks.

NOTE.—For courses for graduate students, see page 226.

5. Forest Engineering and Forestry

Forest Engineering

The curriculum for the first two years in *Forest Engineering* is shown on page 193.

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
For. 398 Essay.....	193	.....	.....	.....	.....
Bot. 303 Dendrology.....	130	1	2	1	2
C.E. 350 Surveying Field Work.....	222	At end of 2nd Term, 2nd Year			
C.E. 351 Surveying.....	222	2	.....	2	.....
C.E. 352 Mapping.....	222	.....	3*	.....	3*
C.E. 355 Strength of Materials.....	222	2	3*	2	3*
C.E. 356 Materials Testing.....	222	1	3*	.....	3*
C.E. 360 Hydraulics.....	222	1	2	1	2
For. 270 Wood Technology.....	227	1	2	1	2
For. 350 Silviculture.....	227	2	2*	2	2*
For. 355 Seeding and Planting.....	227	1	2*	1	2*
For. 360 Mensuration.....	227	2	3	2	3
For. 371 General Logging.....	227	2	.....	2	.....
For. 381 Forest Economics.....	227	2	.....	2	.....

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
For. 498 Essay.....	193	.....	.....	.....	.....
Bot. 467 Forest Pathology.....	220	2	2	.....	.....
For. 353 Seminar.....	227	1	.....	1	.....
For. 370 Wood Technology.....	227	1	3	1	3
For. 380 Forest Policy and Administration.....	227	2	.....	2	.....
†For. 390 Summer Camp.....	227	.....	.....	.....	.....
For. 462 Forest Finance.....	227	1	2	1	2
For. 463 Management.....	227	2	3	2	3
For. 472 Logging Engineering.....	228	2	3	2	3
For. 473 Milling and Marketing.....	228	2	4*	2	4*
For. 474 Lumber Grading.....	228	.....	.....	1	2
For. 475 Forest Products.....	228	2	4*	2	4*
Zool. 459 Forest Entomology.....	237	.....	.....	2	2

*Alternate weeks.

†Between the Third and Fourth Years all Forestry and Forest Engineering students are required to take the four weeks' summer camp at the University Research Forest near Haney. In addition, short field trips are required from time to time throughout the Third and Fourth Years. Fee for summer camp (1950) is \$65.00, payable to the Bursar at the time of registration for the camp.

Forestry (B.S.F. Course)

Students proceeding towards the B.S.F. degree are required to take during each academic year, a basic core of essential subjects and a certain number of other courses which they elect. The choice of electives is governed by the particular phase of forestry in which the student is interested. The primary purpose of the B.S.F. course is to provide a strong, well rounded professional forestry training. At the same time, through his choice of electives, the student is given an opportunity to supplement his knowledge of allied sciences pointing towards specialized training. The electives have been arranged so that a student wishing to proceed with graduate studies in a particular phase or specialty can do so without the necessity of having to take, before commencing his graduate programme, a number of prerequisite undergraduate courses. The main phases of technical forestry or allied fields are: *General Forestry* (Management, Administration, Protection, Silviculture), *Forest Business Administration*, *Forest Pathology*, *Forest Entomology*, and *Wild Life Management*.

First Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Bot. 200 General Botany.....	130	2	2	2	2
Econ. 200 Principles of Economics.....	138	3	.....	3	.....
English 150 Composition.....	226	2	.....	2	.....
Math. 153 Forestry Mathematics.....	231	3	.....	3	.....
Phys. 100 Elementary Physics.....	166	3	2	3	2
For. 151 Profession of Forestry.....	226	1	.....	1	.....
For. 160 Forest Surveying.....	226	1	3	1	3
†ELECTIVES					
Geog. 202 Weather and Climate.....	148	2	2	2	2
Zool. 200 General Zoology.....	182	2	3	2	3

†Students must consult the list of electives (see page 201) under the different options for the number and subject of electives to be taken in each year.

Second Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
For. 298 Essay.....	192	.....	.....	.....	.....
Biol. 331 Genetics.....	220	.....	.....	2	4
Bot. 303 Dendrology.....	130	1	2	1	2
Bot. 330 Plant Physiology.....	130	2	4	.....	.....
English 250 Technical Writing.....	226	1	.....	1	.....
For. 250 Silvics.....	226	.....	.....	1	2
For. 251 Fire Protection.....	226	1	2	1	2
For. 253 Forest Soils.....	226	1	2	.....	.....
For. 260 Surveying and Mapping.....	226	1	2	1	2
For. 270 Wood Technology.....	227	1	2	1	2
For. 360 Mensuration.....	227	2	3	2	3
†ELECTIVES					
Bot. 315 Mycology.....	130	1	4	1	4
Geol. 200 General Geology.....	149	2	2	2	2
Zool. 200 General Zoology.....	182	2	3	2	3
Zool. 300 Comparative Anatomy of Vertebrates.....	182	1	4	1	4

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
For. 398 Essay.....	193	.....	.....	.....	.....
Bot. 318 Forest Pathology.....	130	2	2	2	2
Zool. 308 Forest Entomology.....	183	2	2	2	2
For. 350 Silviculture.....	227	2	2*	2	2*
For. 353 Seminar.....	227	1	.....	1	.....
For. 355 Seeding and Planting.....	227	1	2*	1	2*
For. 370 Wood Technology.....	227	1	3	1	3
For. 371 General Logging.....	227	2	.....	2	.....
For. 380 Forest Policy and Administration.....	227	2	.....	2	.....
For. 381 Forest Economics.....	227	2	.....	2	.....
†ELECTIVES					
Bot. 304 Systematics of Vascular Plants.....	130	1	4	1	4
Com. 559 Industrial Accounting.....	138	2	.....	2	.....
Com. 569 Industrial Marketing.....	138	1	.....	1	.....
Zool. 306 Biology of the Vertebrates.....	183	1	4	1	4

*Alternate weeks only.

†Students must consult the list of electives (page 201) under the different options for the number and subject of electives to be taken in each year.

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
For. 498 Essay.....	193	.....	.....	.....	.....
**For. 390 Summer Camp.....	227	.....	.....	.....	.....
For. 462 Forest Finance.....	227	1	2	1	2
For. 463 Management.....	227	2	3	2	3
For. 473 Milling and Marketing.....	228	2	4*	2	4*
For. 474 Lumber Grading.....	228	.....	.....	1	2
For. 475 Forest Products.....	228	2	4*	2	4*
†ELECTIVES					
Bot. 304 Systematics of Vascular Plants.....	130	1	4	1	4
Bot. 418 Applied Forest Pathology.....	131	1	4	1	4
Bot. 420 Forest Ecology and Geography.....	131	2	2	2	2
Bot. 421 Forest Associations.....	131	2	3	2	3
Com. 361 Marketing.....	136	3	.....	3	.....
Com. 471 Business Finance.....	136	3	.....	3	.....
Com. 481 Industrial Management.....	136	3	.....	3	.....
Com. 491 Commercial Law.....	136	3	.....	3	.....
Com. 559 Industrial Accounting.....	138	2	.....	2	.....
Com. 569 Industrial Marketing.....	138	1	.....	1	.....
For. 450 Advanced Silvics and Silviculture.....	227	2	.....	2	.....
For. 455 Problems in Silvics and Silviculture.....	227	.....	4	.....	4
For. 460 Advanced Mensuration.....	227	1	3	1	3
For. 464 Aerial Surveys.....	227	1	2	1	2
For. 477 Wood Seasoning and Preservation.....	228	1	3	1	3
Zool. 200 General Zoology.....	182	2	3	2	3
Zool. 301 Invertebrate Zoology.....	182	2	3	2	3
Zool. 302 Introduction to Entomology.....	182	1	4	1	4
Zool. 402 Advanced Forest Entomology.....	183	2	2	2	2
Zool. 409 Principles of Wild Life Biology and Conservation.....	184	2	.....	.....	.....
Zool. 410 Biology and Management of Upland and Farm Game.....	184	.....	.....	1	2
Three units selected in consultation with Department.....	.....	.....	.....	.....	.....

†Electives

General Forestry (Management, Administration, Protection, Silviculture).

In the First Year Geography 202; in the Second Year Geology 200; in the Third Year Botany 304 or Commerce 559; in the Fourth Year **nine** units or their equivalent, six of which must be chosen from the following courses: Botany 304, 420, 421, Forestry 450, 455, 460, 464, 477, Commerce 559, 569, and three units chosen in consultation with the Department.

*Alternate weeks only.

**See note at bottom of page 198.

†Students must consult the list of electives (see page 201) under the different options for the number and subject of electives to be taken in each year.

Forest Business Administration.

In the First Year Geography 202; in the Second Year Geology 200; in the Third Year Commerce 559 and 569; and in the Fourth Year nine units chosen from Commerce 361, 471, 481 and 491.

Forest Pathology.

In the First Year Geography 202; in the Second Year Botany 315; in the Third Year Botany 304; in the Fourth Year Botany 418, 420, and Zoology 200.

Forest Entomology.

In the First Year Geography 202; in the Second Year Zoology 200; in the Third Year Botany 304; in the Fourth Year Botany 420, Zoology 302 and 402.

Wild Life Management.

In the First Year Zoology 200; in the Second Year Zoology 300; in the Third Year Zoology 306; in the Fourth Year Botany 304, Zoology 301, 409 and 410.

6. Geological Engineering

For courses in First and Second Years see page 193.

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Geol. 398 Essay.....	193	.....	.....	.....	.....
C.E. 350 Surveying.....	222	At end of 2nd Term, 2nd Year			
Biol. 100 Introductory Biology.....	129	2	2	2	2
C.E. 352 Mapping.....	222	.....	3*	.....	3*
C.E. 360 Hydraulics.....	222	1	2	1	2
Met. 350 Chemical Metallurgy.....	233	2	3	2	3
Met. 351 Physical Metallurgy.....	233	2	.....	2	.....
M.D. 350 Mineral Dressing 1.....	235	2	3*	2	3*
Min. 350 Principles of Mining 1.....	235	2	.....	2	.....
Geol. 301 Morphological Crystallography.....	149	2	2	.....	.....
Geol. 302 Mineralogy.....	149	2	2	2	2
Geol. 304 Structural Geology.....	149	3	.....	3	.....
Geol. 305 Historical Geology.....	149	2	.....	2	.....
Geol. 307 Petroleum, Natural Gas and Structural Materials.....	149	1	.....	2	.....
Geol. 308 Coal.....	149	1	.....	.....	.....
†Geol. 410 Field Geology.....	150	.....	.....	.....	2

*Alternate weeks.

†Includes 10 days' field work after lecture close in the Second Term.

NOTE.—For courses for graduate students, see page 280.

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
C.E. 475 Engineering Economics.....	224	1	1	1	1
Min. 450 Principles of Mining 2.....	235	2	.....	2	.....
Phys. 461 Geophysics.....	236	2	.....	2	.....
†Zool. 200 General Zoology.....	182	2	2	2	2
Geol. 406 Palaeontology.....	149	2	2	2	2
Geol. 407 Petrography.....	149	2	4	2	4
Geol. 408 Mineral Deposits.....	150	3	.....	3	.....
Geol. 409 Mineralography.....	150	.....	3	.....	3
Geol. 411 Regional Geology.....	150	3	.....	3	.....
Geol. 412 Geomorphology.....	150	2	2	2	2
Geol. 499 Thesis.....	230	.....	4	.....	5

7. Mechanical Engineering

For courses in First and Second Years see page 193.

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
M.E. 398 Essay.....	193	.....	.....	.....	.....
M.E. 352 Mechanical Drawing.....	231	At end of 2nd Term, 2nd Year			
C.E. 355 Strength of Materials.....	222	2	3*	2	3*
C.E. 357 Materials Testing.....	222	.....	3*	.....	3*
C.E. 360 Hydraulics.....	222	1	2	1	2
E.E. 351 Electrical Engineering.....	224	2	3	2	3
Math. 350 Differential Equations.....	231	3	.....	3	.....
M.E. 356 Machine Shop Practice.....	231	.....	2	.....	2
M.E. 361 Kinematics of Machines.....	231	3	2	.....	.....
M.E. 363 Machine Design 1.....	231	.....	.....	3	2
M.E. 365 Dynamics of Machines.....	231	2	.....	2	.....
M.E. 373 Applied Thermodynamics.....	232	3	3	3	3

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
M.E. 498 Essay.....	193	.....	.....	.....	.....
C.E. 475 Engineering Economics.....	224	1	1	1	1
E.E. 453 A.C. Machines.....	225	2	3	2	3
Met. 351 Physical Metallurgy.....	233	2	.....	2	.....
Met. 352 Metallography.....	233	.....	3*	.....	3*
M.E. 456 Mfg. Processes.....	232	1	.....	1	.....
M.E. 463 Machine Design 2.....	232	2	3	2	3
M.E. 465 Applied Mechanics.....	232	.....	2	2	2
M.E. 471 Prime Movers.....	232	3	.....	3	.....
M.E. 472 Mechanical Engineering Laboratory.....	232	.....	3	.....	3
† { M.E. 475 Power Plant Design.....	232	2	3	.....	.....
M.E. 477 Heating, Ventilating, Air Conditioning and Refrigeration.....	232	2	.....	2	3
†M.E. 481 Aeronautics.....	233	3	3	3	3

†Optional to Geology 409.

*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 courses for graduate students, see page 283.

8. Metallurgical Engineering

For courses in First and Second Years see page 193.

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Met. 398 Essay.....	193				
M.E. 352 Mechanical Drawing.....	231	At end of 2nd Term, 2nd Year			
C.E. 355 Strength of Materials.....	222	2	3*	2	3*
C.E. 357 Materials Testing.....	222		3*		3*
C.E. 360 Hydraulics.....	222	1	2	1	2
Math. 350 Differential Equations.....	231	3		3	
Geol. 301 Morphological Crystallography.....	149	2	2		
M.E. 363 Machine Design.....	231			3	2
M.E. 371 Applied Thermodynamics.....	232	2		2	
M.D. 350 Mineral Dressing 1.....	235	2	3*	2	3*
Min. 350 Principles of Mining 1.....	235	2		2	
Phys. 360 Light.....	236	1		1	
Met. 350 Chemical Metallurgy.....	233	2	3	2	3
Met. 351 Physical Metallurgy.....	233	2		2	
Met. 352 Metallography.....	233		3*		3*
Met. 360 Seminar.....	233				1

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Met. 498 Essay.....	193				
C.E. 475 Engineering Economics.....	224	1	1	1	1
E.E. 451 Electrical Circuits.....	225	2	2	2	2
Met. 450 Theoretical Metallurgy.....	233	2	3	2	3
Met. 451 Applied Chemical Metallurgy.....	234	2		2	
Met. 452 Physical Metallurgy.....	234	2		2	
Met. 453 Metallurgical Calculations.....	234		2		2
Met. 454 Laboratory and Research Methods.....	234		3		6
Met. 457 Plant Management.....	234	1	1	1	1
and one of the following options : MINERAL DRESSING					
Geol. 302 Mineralogy.....	149	2	2	2	2
Geol. 409 Mineralography.....	150		3		3
M.D. 450 Mineral Dressing 2.....	235	2	6*	2	
CHEMICAL METALLURGY					
Chem. 350 Chemical Engineering.....	220	3		3	
M.D. 450 Mineral Dressing 2.....	235	2	6*	2	
Met. 458 Process Laboratory.....	234		3		3
PHYSICAL METALLURGY					
M.E. 456 Mfg. Processes.....	232	1		1	
Physics 460 Metallurgical Physics.....	236	2		2	
Met. 456 Metallography.....	234		3		3
Met. 459 Mechanical Metallurgy.....	234	1		1	

*Alternate weeks.

NOTE.—For courses for graduate students, see page 284.

9. Mining Engineering

For courses in First and Second Years see page 193.

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Min. 398 Essay.....	193	.....	.....	.....	.....
C.E. 350 Surveying.....	222	At end of 2nd Term, 2nd Year			
C.E. 352 Mapping.....	222	.....	3*	.....	3*
C.E. 355 Strength of Materials.....	222	2	3*	2	3*
C.E. 357 Materials Testing.....	222	.....	3*	.....	3*
C.E. 360 Hydraulics.....	222	1	2	1	2
C.E. 370 Structural Design 1.....	223	2	3	2	3
Geol. 302 Mineralogy.....	149	2	2	2	2
Geol. 304 Structural Geology.....	149	3	.....	3	.....
Geol. 308 Coal.....	149	1	.....	.....	.....
Met. 350 Chemical Metallurgy.....	233	2	3	2	3
Met. 351 Physical Metallurgy.....	233	2	.....	2	.....
Met. 360 Seminar.....	233	.....	.....	.....	1
M.D. 350 Mineral Dressing 1.....	235	2	3*	2	3*
Min. 350 Principles of Mining 1.....	235	2	.....	2	.....

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Min. 498 Essay.....	193	.....	.....	.....	.....
C.E. 475 Engineering Economics.....	224	1	1	1	1
E.E. 451 Electrical Circuits.....	225	2	2	2	2
Geol. 408 Mineral Deposits.....	150	3	.....	3	.....
Geol. 453 Petrology.....	230	2	.....	2	.....
M.E. 371 Applied Thermodynamics.....	232	2	3	2	3
Met. 457 Plant Management.....	234	1	1	1	1
M.D. 450 Mineral Dressing 2.....	235	2	6*	2	.....
Phys. 461 Geophysics.....	236	2	.....	2	.....
Min. 450 Principles of Mining 2.....	235	2	.....	2	.....
Min. 451 Mine Management.....	235	2	.....	2	.....
Min. 454 Problems and Reports.....	235	.....	4	.....	4

*Alternate weeks.

10. Engineering 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.

For courses in First and Second Years see page 193.

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
M.E. 352 Mechanical Drawing.....	231	Attend of 2nd Term, 2nd Year			
† Chem. 304 Physical Chemistry.....	133	2	3	2	3
C.E. 355 Strength of Materials.....	222	2	3*	2	3*
C.E. 357 Materials Testing.....	222	.....	3*	.....	3*
Math. 320 Differential Calculus.....	160	2	.....	2	.....
Math. 321 Integral Calculus.....	160	3	.....	3	.....
Math. 322 Algebra and Geometry.....	160	3	.....	3	.....
Phys. 302 Mathematical Physics.....	167	2	.....	2	.....
Phys. 304 Thermodynamics.....	167	2	.....	2	.....
Phys. 308 Physical Optics.....	167	2	3	2	3
and one of the following:					
Chem. 300 Organic Chemistry.....	133	2	3	2	3
Chem. 350 Chemical Engineering.....	220	3	.....	3	.....
E.E. 355 A.C. Circuits.....	225	1	.....	2	.....
Geol. 304 Structural Geology.....	149	3	.....	3	.....
M.E. 371 Applied Thermodynamics.....	232	2	3	2	3
{ Met. 351 Physical Metallurgy.....	233	2	.....	2	.....
{ Met. 352 Metallography.....	233	.....	3*	.....	3*

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
E.E. 465 Electrical Communications.....	225	2	3	2	3
Math. 402 Differential Equations.....	161	3	.....	3	.....
Phys. 401 Electricity and Magnetism.....	167	2	.....	2	.....
Phys. 402 Atomic Structure.....	168	2	.....	2	.....
Phys. 403 Statistical Theory of Matter.....	168	2	.....	2	.....
Phys. 405 Theory of Elasticity.....	168	1	.....	1	.....
Phys. 407 Nuclear Physics.....	168	1	.....	1	.....
Phys. 409 Experimental Physics.....	168	.....	6	.....	6
and one of the following:					
Chem. 450 Chem. Engineering Theory.....	220	3	.....	3	.....
E.E. 453 A.C. Machines.....	225	2	3	2	3
{ Phys. 461 Geophysics.....	236	2	.....	2	.....
{ Geol. 453 Petrology.....	230	2	.....	2	.....
M.E. 477 Heating, Ventilating.....	232	2	.....	2	3
M.E. 481 Aeronautics.....	233	3	3	3	3
{ Met. 452 Physical Metallurgy.....	234	2	.....	2	.....
{ Met. 456 Adv. Metallography.....	234	.....	3	.....	3

*Alternate weeks.

†Optional to Mathematics 322.

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.

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 209 and "Double Courses").

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 210).

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 210).

Nursing D. A course for graduate nurses who wish to qualify for the degree of B.A.Sc. (Nursing). (See page 211).

Students of all courses in Nursing are subject to the general University regulations, and to special regulations of the Faculty of Applied Science. (See pages 214 and 216).

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 teaching and supervision in schools of nursing or for public health 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 189. 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 satisfy the Department of Nursing and Health that they are personally fitted for the branches of nursing to which the course leads;
2. 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.

1. First Year Nursing.—Students register in the Faculty of Applied Science for the following courses, which provide an introduction to general cultural subjects and a foundation in sciences basic to the practice of nursing.

First Year Nursing

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Bact. 201 Introductory Bacteriology.....	128	1	4	1	4
English 200.....	143	3	.....	3	.....
Physics 110.....	166	3	2	3	2
Psychology 100.....	171	3	.....	3	.....
Zoology 200.....	182	2	3	2	3
Nursing 151 History of Nursing.....	235	1	.....	1	.....
Nursing 152 Elementary Biochemistry.....	235	1	.....	1	.....

II. Professional course of thirty-two months at the Vancouver General Hospital School of Nursing.*

Following completion of the academic or pre-clinical year (First Year Nursing) 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 judgement 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 preliminary 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 note 2(a), page 43).

Following is an outline of the course provided by the Vancouver General Hospital School of Nursing.

*Candidates are advised to write to the Director, School of Nursing, Vancouver General Hospital, for the School Calendar.

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
- Pharmacology and Therapeutics
- Urinalysis
- Introduction to: Anaesthesia
- Physiotherapy
- X-ray

Community Health and Social Needs.

2. Instruction and supervised experience are provided in the following services:

- Communicable disease (including Tuberculosis and Venereal Disease)
- Dietary
- Eye, Ear, Nose, and Throat
- Gynecological
- Medical
- Obstetric
- Orthopedic
- Out-Patient
- Pediatric
- Psychiatric
- Surgical (including Operating Room)
- Visiting Nurse

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 practice 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. Graduate nurse experience before returning to the University is recommended.

III. For the final year of her course the student elects either Nursing B (see page 207) or Nursing C (see page 207), and upon its satisfactory completion she is awarded the degree of B.A.Sc. (Nursing).*

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

*Before July 15th of the year in which she plans to return to the University each student must notify the Department of Nursing and Health as to whether she proposes to take Nursing B or Nursing C.

school of nursing, but is otherwise similar to Nursing A. (See page 207). 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 Nursing A 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.....	235	45
Nursing 455 Mental Hygiene.....	235	18
Nursing 457 Infant and Child Health.....	235	18
Nursing 459 Sanitation.....	235	9
Nursing 461 Public Health Organization.....	235	10
Nursing 463 Principles and Practice of Public Health Nursing.....	235	54
Nursing 466 Health Teaching.....	236	54
Nursing 467 Current Nursing Problems.....	236	18
Nursing 471 Social Case Work.....	236	18
Nursing 477 Sociology of the Family.....	236	18
Nursing 481 Principles and Methods of Teaching.....	236	18
Nursing 485 Essay.....	236	.....
Nursing 486 Field Work.....	236	.....

Nursing C (Teaching and Supervision in Schools of Nursing)

	For details see page	Total hours of lectures
Nursing 454 Preventive Medicine.....	235	45
Nursing 455 Mental Hygiene.....	235	18
Nursing 467 Current Nursing Problems.....	236	18
Nursing 468 Teaching in Schools of Nursing.....	236	36
Nursing 469 Principles of Supervision in Schools of Nursing.....	236	36
Nursing 477 Sociology of the Family.....	236	18
Nursing 481 Principles and Methods of Teaching.....	236	18
Electives from Nursing B, from Education, or from related Science courses, to make up three units.....	.....	.....
Nursing 485 Essay.....	236	.....
Nursing 487 Field Work.....	236	.....

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 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 report of medical examination recorded on a form provided by the Department, signed by a practising physician and accompanied by the report of an X-ray of the chest (taken within the preceding three months) is 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 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:

1. The applicant shall complete satisfactorily the work of the First Year of the Faculty of Arts and Science or Senior Matriculation with the subject content as outlined on page 190.
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.
Bact. 201 Introductory Bacteriology.....	128	1	4	1	4
English 205.....	144	3	.....	3	.....
Psychology 100.....	171	3	.....	3	.....
Nursing 152 Elementary					
Biochemistry.....	235	1	.....	1	.....
Nursing 154 Essay.....	235	.....	.....	.....	.....
Six additional units to be selected in consultation with the Department.....	.....	.....	.....	.....	.....

3. Nursing B or Nursing C as outlined on page 210.

Except in very unusual circumstances those candidates who already hold a certificate in Nursing B or Nursing C must 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.

Students who have completed work similar to Nursing B or Nursing C at another university must take a full year of senior work at this University. In such cases, however, efforts will be made to adjust their programme so as to avoid unnecessary duplication of work in which a satisfactory degree of proficiency has already been demonstrated.

At the discretion of the Department any student may be required to obtain practical experience in the field of her major interest before proceeding with further academic work.

COURSE LEADING TO THE DEGREE OF B.Arch.

The course leading to the degree of Bachelor of Architecture requires for its completion five years of study after entering the Faculty of Applied Science. The studies provide a broad and intensive training in the fundamentals of architecture, as they relate to human and social needs. This training equips the student upon graduation for efficient service in the offices of practising architects, and for an early start on his professional career in the fields of private practice and public service.

The course in Architecture also provides a sound basis for students who are planning to undertake graduate work in related fields, such as Town and Community Planning, Industrial Design and Landscape Design.

The general requirements for admission to the course in Architecture are the same as those for admission to other courses in Applied Science (see page 189). A reading knowledge of French is highly desirable.

Competence in Design is required for progress in this course.

Candidates, in order to be admitted into the Fourth and Fifth Years of Architecture, must obtain a pass mark in Architectural Design in the previous year. Supplemental examinations are allowed in this subject only in the Second Year (Arch. 250). In the final year, students must obtain a pass mark in both a Thesis Project and in the Final Examination in Architectural Design (Arch. 550).

Summer Essays are required throughout the course. Students entering the Second and Third Years are required to write 1500 words on some aspect of their summer experience, or on some subject related to Architecture or Planning. Students entering the Fourth and Fifth Years are required to write a 2,000 word critical review of a book designated by the Department.

Before the degree of Bachelor of Architecture is granted, each student is required to submit satisfactory evidence of having had twelve months

(1900 hours) practical experience. At least four of the twelve months should be spent on building sites or in contact with the processes of construction. If a student cannot find sufficient summer employment of the kind indicated and submits evidence to that effect, he will be allowed to present sets of measured drawings to the approval of the staff; in no case can a student graduate with less than six months (1000 hours) practical experience in architectural work.

First Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
C.E. 155 Graphical Statics.....	221	.....	2	.....	2
C.E. 160 Engineering Problems.....	221	.....	4	.....	4
English 205 English Composition and Literature.....	144	3	.....	3	.....
Math. 150 Trigonometry and Geometry.....	230	2	.....	2	.....
Math. 151 Algebra and Calculus.....	231	2	.....	2	.....
Math. 152 Calculus.....	231	2	.....	2	.....
Phys. 160 Mechanics and Heat.....	236	2	3	2	3
Arch. 150 Visual Design.....	217	1	3	1	3
Arch. 151 Building Materials.....	217	2	.....	2	.....
Arch. 152 Architectural Drafting and Descriptive Geometry.....	217	1	4	1	4
Arch. 160 History of Art.....	217	2	.....	2	.....

Second Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Arch. 298 Essay.....	212	.....	.....	.....	.....
Eng. 250 Technical English.....	226	1	.....	1	.....
Phys. 260 General Physics.....	236	2	3	2	3
Arch. 250 Architectural Design 1.....	217	.....	8	.....	8
Arch. 251 Theory of Planning.....	217	3	.....	3	.....
Arch. 252 Elements of Construction.....	217	3	6	3	6
Arch. 255 Elementary Strength of Materials and Structures.....	217	2	2	2	2
Arch. 260 History of Architecture.....	217	2	.....	2	.....
Arch. 262 Architectural Report.....	217	.....	.....	.....	.....
Arch. 270 Drawing.....	218	.....	3	.....	3

Third Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Arch. 398 Essay.....	212	.....	.....	.....	.....
Ec. 200 Principles of Economics.....	138	3	.....	3	.....
Hort. 416 Landscape Design.....	266	1	2	1	2
M.E. 377 Mechanical Services.....	232	2	.....	2	.....
Arch. 350 Architectural Design 2.....	218	.....	12	.....	12
Arch. 351 Industrial Design and Prefabrication.....	218	1	3	1	3
Arch. 352 Interior Finishes, Colour and Furniture.....	218	1	3	1	3
Arch. 355 Arch. Engineering 1.....	218	2	3	2	3
Arch. 360 History of Architecture.....	218	2	.....	2	.....
Arch. 362 Architectural Report.....	218	.....	.....	.....	.....
Arch. 370 Summer Sketching.....	218	.....	.....	.....	.....

Fourth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Arch. 498 Essay.....	212	.....	.....	.....	.....
Com. 559 Industrial Accounting.....	138	2	.....	2	.....
Arch. 450 Architectural Design 3	218	.....	18	.....	18
Arch. 455 Arch. Engineering 2	218	1	3	1	3
Arch. 456 Electricity and Illumination.....	218	2	.....	2	.....
Arch. 460 History of Architecture 3.....	218	2	.....	2	.....
Arch. 462 Architectural Report.....	218	.....	.....	.....	.....
Arch. 465 Commercial Law.....	219	1	.....	1	.....
Arch. 466 Housing and Planning.....	219	3	.....	3	.....
Arch. 470 Summer Sketching.....	219	.....	.....	.....	.....
Arch. 471 Sculpture.....	219	.....	3	.....	3

Fifth Year

Subject	For details see page	First Term		Second Term	
		Lect.	Lab.	Lect.	Lab.
Arch. 598 Essay.....	212	.....	.....	.....	.....
Arch. 550 Architectural Design 4	219	.....	24	.....	27
Arch. 552 Specifications.....	219	1	.....	1	.....
Arch. 555 Arch. Engineering 3	219	1	2	1	2
Arch. 560 Theory of Architecture.....	219	2	2	2	.....
Arch. 562 Thesis Report.....	219	.....	.....	.....	.....
Arch. 565 Professional Practice.....	219	2	.....	2	.....
Arch. 566 Planning Design.....	219	2	.....	2	.....
Arch. 570 Summer Sketching.....	219	.....	.....	.....	.....

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 A2, 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.

For regulations regarding re-reading of paper see "Faculty of Arts and Science", under "Re-Readings" (page 126).

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 44), must be in the hands of the Registrar by August 1st.

Local centres for supplemental examinations will be arranged in British Columbia at the following centres:

Cranbrook, Dawson Creek, Kamloops, Kelowna or Penticton, Ocean Falls, Prince George, Prince Rupert, Trail or Nelson, Victoria College.

A student wishing to write supplemental examinations at one of these centres must state in his application the centre chosen and must pay a fee of \$2.50 a paper in addition to the regular fee of \$5.00 a paper for a supplemental examination.

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). For requirements for students entering the Fourth or Fifth Year of Architecture, see page 212.

7. No student will be allowed to take any subject unless he has previously passed, or secured exemption, in all prerequisite subjects.

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.

*Special permission of the Faculty is granted only under exceptional circumstances, such as illness, or as outlined on page 192.

12. Term essays and examination papers may be refused a passing mark if they are noticeably deficient in English.

13. 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.

COURSES IN APPLIED SCIENCE

Note: The following subjects may be modified during the year as the Senate may deem advisable.

The hours assigned for laboratory and lectures in the courses are designated as shown by the following examples:

2 lectures and 3 hours laboratory per week, both terms. [2-3; 2-3]

1 lecture per week and 3 hours laboratory in alternate weeks, both terms. [1-3*; 1-3*]

1 lecture and 2 hours laboratory per week, First Term. [1-2; 0-0]

1 lecture and 2 hours laboratory per week, Second Term. [0-0; 1-2]

Where no definite times are assigned for laboratory and lectures, the number of units for which credit will be granted is shown in parentheses after the course number.

Agricultural Engineering

350. Agricultural Power.—Applications of engineering principles and practices in the development of agricultural power units; fuels, lubricants, materials and developmental trend. Text-book: Heldt, *High-Speed Internal Combustion Engines*. Mr. Coulthard. [2-3; 2-3]

351. Agricultural Machinery.—Farm production machinery; the application of engineering principles to agricultural machinery design, performance, and field testing. Text-book: Smith, *Farm Machinery*. Mr. Coulthard. [2-3; 2-3]

450. Agricultural Buildings.—Design of buildings for the farmstead; planning and layout. Text-book: Scoates, *Farm Buildings*, 1 and 2. Mr. Leroux. [1-4; 1-4]

451. Advanced Agricultural Engineering.—Lectures, papers, and discussions on recent developments. [2-2; 2-2]

456. Shopwork.—Oxy-acetylene and arc welding; heat treatment of agricultural tools. [0-3*; 0-3*]

460. Drainage and Irrigation.—Drainage principles, soil and water relation, land reclamation; hydraulics; design of irrigation systems. Text-books: Etcheverry, *Land Drainage and Flood Protection*; Israelsen, *Irrigation Principles and Practices*. Mr. Coulthard. [2-3; 2-3]

470. Rural Electrification.—Electrification principles and application. Text-book: Schaenzer, *Rural Electrification*. Mr. Young. [2-3; 0-0]

499. Thesis.—For B.A.Sc. degree. [0-3; 0-3]

Agricultural Economics

300. Farm Organization and Management.—As in Agriculture. See page 259.

Agronomy

211. Soils.—As in Agriculture. See page 261.

Architecture

150. (2) Visual Design.—Basic visual elements of line, shape, colour, volume and texture; two and three dimensional studies of space with different shapes, materials and lighting effects. Mr. Kleege. [1-3; 1-3]

151. Building Materials.—Mechanical and physical properties, origin, processing, manufacture, and application in construction of principal materials and their derivatives. Text-books: Gay and Parker, *Materials and Methods of Architectural Construction*; Eric de Mare, *New Ways of Building*. Mr. Davison. [2-0; 2-0]

152. Architectural Drafting and Descriptive Geometry.—Drafting and lettering; descriptive geometry; shades and shadows; orthographic, isometric, and oblique projections; angular and parallel perspective. Mr. Porter. [1-4; 1-4]

160. (2) History of Art.—Chronological survey and critical appreciation of changes in painting, sculpture, architecture and other visual arts from prehistoric times to the present day. Critical reports. Text-books: Read, *The Meaning of Art*; Upjohn, Wingert and Mahler, *History of World Art*. Mr. Binning. [2-0; 2-0]

250. Architectural Design 1.—Relation of exterior to interior space; design of simple architectural elements, elementary planning, construction integration; fundamental concepts of space, form and function as expressed by structural, colour, texture and light relationships. Students are made increasingly familiar during this and following years with thought processes and feelings basic in good design by: analysis of site and of human and social factors; introduction of clients, contractors and authorities concerned; preparation of programs (clients' requirements); sketches, presentation and execution drawings, models. Text-book: Ralph Tubbs, *An Englishman Builds*. Mr. Binning. [0-8; 0-8]

251. Theory of Planning.—Basic plan and design requirements of buildings. Technique of planning; characteristics of good plans; their three-dimensional expression and execution. Analysis reports are required throughout the session. Text-book: Dodge Corporation, *Time Saver Standards*. Mr. Lasserre. [3-0; 3-0]

252. Elements of Construction.—Basic construction techniques in their relation to design; field trips to building sites; procedure in construction; building codes; finishing. Detailing and elementary working drawings. Text-books: Gay and Parker, *Materials and Methods of Architectural Construction*; Ramsey and Sleeper, *Architectural Graphic Standards*; Department of Finance and National Research Council of Canada, *National Building Code*; Central Mortgage and Housing Corporation, Ottawa, *Building Standards*; National Lumber Manufacturers' Association, *House Framing Detail*. Mr. Davison. [3-6; 3-6]

255. Elementary Strength of Materials and Structures.—Relations between external forces, stresses, and deformation in material; application to basic structural members. Laboratory tests. Text-book: Timoshenko and McCullough, *Elements of Strength of Materials*. Mr. Wisnicki. [2-2; 2-2]

260. History of Architecture 1.—History of Ancient, Classical and Medieval Architecture. Plans, forms, structure and embellishments related to geographic, social and cultural backgrounds. Text-book: Hamlin, *Architecture Through the Ages*. Mr. Porter. [2-0; 2-0]

262. Architectural Report.—Illustrated essay of 1500 words or visual dissertation with adequate explanatory notes on some aspect of history or theory of architecture and design, to be handed in to the Head of Department by February 15th.

270. (1) Drawing.—Drawing and painting in various media to develop skill in visual presentation. Mr. Kleege. [0-3; 0-3]

350. Architectural Design 2.—(Continuation of Arch. 250). Simple building problems; residential planning, design and construction. Mr. Porter. [0-12; 0-12]

351. Industrial Design and Prefabrication.—Principles and methods of design for industrial production; detailed study of materials and manufacturing processes; house prefabrication; drafting-room problems; shop work including use of hand and power tools; visits to factories. Mr. Wisnicki. [1-3; 1-3]

352. (2) Interior Finishes, Colour and Furniture.—Fabrics and finishing materials; texture and colour relations. Theories and use of colour, colour mixture and harmony. Basic principles in design of free and built-in furniture; historical survey. Mr. Kleege. [1-3; 1-3]

355. Architectural Engineering 1.—Principles and methods of structural design in steel and timber. Foundations, soil bearing, and earth pressure. Laboratory problems connected with structure of buildings and design of main structural elements; related to problems in Arch. 350. Mr. Wisnicki. [2-3; 2-3]

360. History of Architecture 2.—(Continuation of Arch. 260). Renaissance and baroque periods and the nineteenth century; early manifestations of the modern movement. Text-book: Giedion, *Space, Time and Architecture*. Mr. Porter. [2-0; 2-0]

362. Architectural Report.—(Continuation of Arch. 262).

370. Summer Sketching.—Prior to beginning of classes in September, students spend 10 days at the University gaining experience in the techniques of pen and ink, pencil and colour for representation and descriptive purposes. Mr. Binning and Mr. Kleege.

Note: Horticulture 416 (Landscape Design) is counted as a course in Architecture. Problems are assigned in conjunction with Architecture 350. See Agriculture, page 266.

450. Architectural Design 3.—(Continuation of Arch. 350). Complex building problems; advanced planning; integration with structure and landscape. Mr. Lasserre, staff, and practising architects. [0-18; 0-18]

455. Architectural Engineering 2.—(Continuation of Arch. 355.) Principles and methods of construction and design of concrete structures; related to problems in Arch. 450. Text-book: Parker, *Simplified Design of Concrete Structures*. Mr. Wisnicki. [1-3; 1-3]

456. Electricity and Illumination.—Wiring, electric service and equipment needs of buildings. Principles of visual comfort; illumination, natural and artificial; measurements, controls, glare, colour, light differentials, lighting equipment. Study of illumination and wiring in relation to design in Arch. 450. Text-books: *Westinghouse Lighting Handbook*; *Province of British Columbia Rules and Regulations for the Installation and Maintenance of Electrical Equipment*. Mr. Simpson. [2-0; 2-0]

460. History of Architecture 3.—(Continuation of Arch. 360). Contemporary architecture in relation to social, economic, and technical changes, and to developments in the arts; study of work and theories of contemporary architects; national architectural characteristics. Text-book: Giedion, *Space, Time and Architecture*. Mr. Oberlander. [2-0; 2-0]

462. Architectural Report.—(Continuation of Arch. 362).

465. Commercial Law.—Building contracts; analysis of agreement between client and architect, construction tender agreement between contractor and owner; law of partnership; Architect's Act; legal rights and obligations of architects, owners and contractors. Text-books: Hudson, *Building Contracts*; Laidlaw and Young, *Engineering Law*. Mr. Carrothers.

[1-0; 1-0]

466. (3) Housing and Planning.—Urban growth and urban problems; social-economic influences on family and community life; social approach to city and regional planning; foreign, American and Canadian examples. Social significances of housing; demand and supply factors; urban redevelopment; public housing administration. Social surveys. Prerequisites: Ec. 200 or Soc. 200. Text-books: Churchill, *The City is the People*; Sert, *Can Our Cities Survive*; Advisory Committee on Reconstruction, *Housing and Community Planning*; Straus, *The Seven Myths of Housing*; Sanders and Rabuck, *New City Patterns*. Mr. Marsh.

[3-0; 3-0]

470. Summer Sketching.—(Continuation of Arch. 370). Mr. Binning and Mr. Kleege.

471. Sculpture.—Modelling and carving; a study of three-dimensional form, texture, material and space. Mr. Kleege.

[0-3; 0-3]

550. Architectural Design 4.—(Continuation of Arch. 450). Housing and civic or community planning projects. Thesis problem occupies most of Second Term, programme for it to be submitted by student not later than first day of Second Term to Head of Department for approval by staff. Mr. Oberlander, staff and practising architects.

[0-24; 0-27]

552. Specifications.—Technique of specification writing, principal clauses to be covered, practice in specifying for common trades; review of good practice in construction and in choice and handling of materials. Mr. Davison.

[1-0; 1-0]

555. Architectural Engineering 3.—Advanced study of structural design. Comparison and evaluation of different structures and materials for particular problems in design. Text-book: Crane, *Architectural Construction*. Mr. Wisnicki.

[1-2; 1-2]

560. Theory of Architecture.—Seminar course. Review of architectural theory in terms of man's environment, social needs and cultural achievements. Text-book: Fitch, *American Building*. Mr. Lasserre.

[2-2; 2-0]

562. Thesis Report.—(Continuation of Arch. 462). Essay of at least 2000 words relating to Thesis Problem in Arch. 550.

565. Professional Practice.—Architect's administration and organization of office and work; relation to public, clients, contractors, engineers and other allied professions; professional conduct and ethics; fire, building and planning codes and legislation; principles of surveying; estimating. Mr. Davison.

[2-0; 2-0]

566. Planning Design.—Physical planning, techniques and methods; relationship of survey analysis to design process; local, regional and national planning as integrated process of design; visual implication of urban design. Text-books: To be announced. Mr. Oberlander.

[2-0; 2-0]

570. Summer Sketching.—(Continuation of Arch. 470). Mr. Binning and Mr. Kleege.

Bacteriology and Preventive Medicine

For descriptions of courses in Bacteriology and Preventive Medicine, see Arts, pages 128-129.

Biology

331. Principles of Genetics. — For Forestry students. The nature and genetic significance of variations and mutations; Mendel's Law; basis of inheritance; genetic selection and the production of improved strains. Text-book: Sinnott and Dunn, *Principles of Genetics*. Prerequisite: Biology 100. Mr. Hutchinson, Mr. Allen, Mrs. Brink. [0-0; 2-4]

For descriptions of other courses in Biology, see Arts, pages 129-130.

Botany

467. Introductory Forest Pathology.—Life histories, control and economics of diseases in relation to forest management in Western Northern America. Open to Forest Engineering students only. Mr. Buckland.

[2-2; 0-0]

For descriptions of other courses in Botany, see Arts, pages 130-132.

Chemistry

150. Qualitative Analysis.—Theory and practice of the detection of common cations and anions. [1-3; 1-3]

250. Quantitative Analysis.—This course embraces the more important methods of gravimetric and volumetric analysis. Text-book: Talbot, *Quantitative Chemistry Analysis*, revised by Hamilton and Simpson. [1-3; 1-3]

350. Introduction to Chemical Engineering. — Technical fundamentals, unit operations such as fluid flow, heat transfer, filtration and evaporation. Text-books: Kirkbride, *Chemical Engineering Fundamentals*; Walker, Lewis, McAdams, and Gilliland, *Principles of Chemical Engineering*. [3-0; 3-0]

351. Industrial Stoichiometry.—Calculations from typical process industries; fuels and combustion, gas producers, water treatment; interrelation of variables in chemical processes. Text-books: Kirkbride, *Chemical Engineering Fundamentals*; Shreve, *Chemical Process Industries*. [2-0; 2-0]

352. Advanced Quantitative Analysis. — Text-book: Vogel, *Quantitative Analysis*. [1-2; 1-2]

360. Chemical Engineering Laboratory.—Problems and experiments illustrating the principles given in Chem. 350; local plant visits. [0-3; 0-3]

450. Chemical Engineering Theory.—Theories of diffusional operations, humidification, drying, extraction, absorption, ion exchange, advanced theories of fluid flow and heat transfer; practical applications made by means of problem assignments and laboratory experiments. Text-books: Walker, Lewis, McAdams, and Gilliland, *Principles of Chemical Engineering*; Perry, *Chemical Engineers' Handbook*. [3-0; 3-0]

451. Chemical Engineering Thermodynamics. — Application of fundamental laws to fluid flow, heat transfer and chemical processes; power cycles, refrigeration, expansion and compression of fluids. Text-book: J. M. Smith, *Introduction to Chemical Engineering Thermodynamics*. [1-0; 1-0]

452. Instrumentation.—Theory and application of automatic control in chemical processes; regulation of process variables; types of instruments. Text-book: Rhodes, *Industrial Instruments for Measurement and Control*. [1-0; 1-0]

453. Plant Design.—Design of chemical engineering equipment; operation and planning of chemical process plants; economics of chemical engineering processes. Text-books: Vilbrandt, *Chemical Engineering Plant Design*; Tyler, *Chemical Engineering Economics*. [1-0; 1-0]

458. Electrochemistry. — Theoretical principles, industrial applications, electrokinetics, electrowinning, electrolytic extraction, electroplating; electric furnace design, corrosion and protective coatings. Text-book: Mantell, *Industrial Electrochemistry*. [2-1½; 2-3]

459. Qualitative Organic Analysis.—Similar to Chem. 409, (Arts, page 133) but with reduced amount of laboratory work. For Chemical Engineering students only. [1-4½; 0-0]

460. Chemical Engineering Laboratory.—Study of unit operations and industrial processes; local plant visits. [0-6; 0-3]

498. Industrial Chemistry.—A summer reading course covering the more important chemical processes. Text-book: Shreve, *Chemical Process Industries*.

499. Thesis.—Experimental research or design under the direction of a staff member. [0-3; 0-9]

Courses for Graduate Students

548. Research Conference.—Attendance and presentation of a paper is required in each year of registration for the M.A.Sc. in chemical engineering. No unit value.

550. (1) Industrial Kinetics and Catalysis.—Chemical reaction kinetics and catalytic processes; heat and mass transfer in industrial reactors; design of catalytic converters. Text-book: Hougen and Watson, *Chemical Process Principles*, Vol. III.

551. (1) Chemical Engineering Thermodynamics. — Pressure-volume-temperature relations; chemical equilibria by Gibb's method; vapor-liquid equilibria; thermodynamic equations by third law and quantum-statistical methods. Text-book: Dodge, *Chemical Engineering Thermodynamics*.

552. (1) Distillation Theory and Design.—Systems of complete and of limited miscibility; multicomponent systems; graphical methods; vacuum and pressure distillation.

553. (1) Process Engineering Calculations.—Material and energy balances; applications of differential equations; numerical and graphical methods. Text-books: Sherwood and Reed, *Applied Mathematics in Chemical Engineering*; Wenner, *Thermochemical Calculations*.

599. Thesis.—For M.A.Sc. degree.

For descriptions of other courses in Chemistry, see Arts, pages 132-135.

Civil Engineering

150. General Engineering. — Commercial and financial aspects of the engineering profession, its historical background, and the relations between science and modern industry. Industrial organization and management. Labour relations. Mr. Finlayson. [1-0; 1-0]

155. Graphical Statics.—Composition of forces; general methods involving the force and equilibrium polygons; determination of resultants, reactions, centres of gravity, bending moments; stress in framed structures, towers, roof-trusses, and bridge-trusses. Algebraic check methods will be used throughout. Reference: Hudson and Squire, *Elements of Graphic Statics*. Mr. Peebles. [0-2; 0-2]

160. 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; application of mathematics to problems in physics and engineering. Mr. Peebles. [0-4; 0-4]

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, bench marks, and contours. Draughting from notes obtained in survey field work; maps from compass, stadia, and transit surveys; topographical maps and conventions. Mapping and field work given in alternate weeks. Mr. de Jong. [0-4; 0-4]

251. Surveying 1.—Chain and angular surveying; levelling; construction, use, and adjustment of surveying instruments; applications to engineering problems. Text-book: Breed and Hosmer, *Elementary Surveying*. Mr. de Jong, Mr. Heslop. [2-0; 2-0]

255. 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. Mr. Pretious. [0-3; 0-3]

260. (a) Mechanics.—An extension of the subject matter of Physics 150, applying the methods of the differential and integral calculus.

(b) Engineering Problems 2.—(Continuation of C.E. 160). 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: Singer, *Engineering Mechanics*. Mr. Finlay, Mr. Hrennikoff. [2-3; 2-3]

350. Field Work 2.—Route surveys, reconnaissance, preliminary and location surveys; methods of taking topography, cross-sectioning; estimating quantities; running in curves. Solar observations for latitude and azimuth; adjustments of instruments; use of the plane table. 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. Pretious.

351. Surveying 2. — (Continuation of C.E. 251). Underground, hydrographic, and phototopographic surveying; Dominion and Provincial land surveys; field astronomy. Text-book: Breed and Hosmer, *Surveying*, Volumes I and II. Mr. de Jong. [2-0; 2-0]

352. Mapping 2.—Mapping from notes obtained in C.E. 350; mining, forestry, or geological maps. Mr. Scarisbrick. [0-3*; 0-3*]

353. Drawing.—Map projections, phototopographic mapping. Mr. Bell. [0-3*; 0-3*]

355. Strength of Materials. — Fundamental relations between external forces and accompanying stresses, strains, and deflections in structural members and machine elements, including simple and continuous homogeneous beams, reinforced concrete beams, shafts, columns, springs, and riveted and welded joints. Text-book: Timoshenko and McCullough, *Elements of Strength and Materials*, 3rd edition. Reference: Timoshenko, *Strength of Materials*, Vols. I and II. Mr. Finlay. [2-3*; 2-3*]

356. Materials Testing.—Properties and testing of engineering materials; proportioning and testing of concrete. Mr. Hrennikoff. [1-3*; 0-3*]

357. Materials Testing.—Physical testing of metals. Mr. Bell. [0-3*; 0-3*]

360. Hydraulic Engineering.—Problems and laboratory work on gauges, pressures on surfaces, translation and rotation of liquids; Bernoulli's theorem; flow through orifices, short tubes, pipes, nozzles, weirs, open channels; jet action. Text-book: Russell, *Hydraulics*, 5th edition. Reference: Freeman, *Hydraulics Laboratory Practice*. Mr. Pretious, Mr. Heslop. [1-2; 1-2]

- 361. Hydraulic Engineering.**—A course similar to C.E. 360, for Civil Engineering students only. Mr. Pretious. [1-3; 1-3]
- 365. Foundations.**—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*. C.E. 355 must either precede or be taken concurrently. Mr. Hrennikoff. [2-3; 0-0]
- 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. Mr. Hrennikoff. [0-0; 2-0]
- 370. Structural Design 1.**—Design and details of engineering structures; estimates of quantities and costs. Text-books: *Manual of Timber Connector Construction*; *A.I.S.C. Steel Construction Manual*; Grinter, *Elementary Structural Analysis and Design*. Mr. Muir. [2-3; 2-3]
- 375. 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, *Designs of Railway Location*, 2nd edition; Raymond, *Elements of Railroad Engineering*, 6th edition. Mr. Peebles. [2-0; 2-0]
- 380. Seminar.**—Training in public speaking by the oral presentation of engineering or other topics by the student before the class. Reference: Rickard, *Technical Writing*. [1-0; 1-0]
- 450. Field Work 3.**—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 measurement, and precise levelling; spiral curves. Mr. de Jong.
- 455. 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. Text-book: Timoshenko and Young, *Theory of Structures*, 1st edition. Reference: Johnson, Bryan and Turneaure, *Modern Framed Structures*, Vols. I to II. Mr. Finlay. [2-6; 0-0]
- 460. 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: American Institute of Steel Construction, *Steel Construction*; American Railway Engineering Association, *Specifications for Steel Railway Bridges*; Canadian Engineering Standards Association, *Standard Specifications for Steel Highway Bridges*. Mr. Hrennikoff. [2-3; 2-6]
- 461. Reinforced Concrete Design.**—Analysis and design of reinforced concrete structures, including beams, slabs, columns, footings, and rigid frames. A complete design of a small reinforced concrete building, including the necessary drawings, is prepared by each student. Text book: Urquhart and O'Rourke, *Design of Concrete Structures*, 4th edition. Mr. Lipson. [2-3; 0-4]
- 465. Municipal Engineering.**—Physical and economic factors in sewage and sewage treatment; water supply; town planning and city management. Text-book: Steel, *Water Supply and Sewage*. Reference: Lewis, *City Planning*. Mr. Muir. [2-2; 2-2]

466. Water Power Development.—Principles of hydrology; selection of hydraulic turbines and centrifugal pumps; hydro-electric installations. Text-book: Barrow, *Water Power Engineering*. Mr. Muir. [0-0; 2-2]

470. 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; Hogentogler, *Engineering Properties of Soil*; Bateman, *Highway Engineering*, 5th edition. Mr. Peebles. [2-0; 2-2]

475. 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*. Mr. Kania. [1-1; 1-1]

476. Engineering Law.—The law insofar as it affects engineers; engineering contracts and specifications; preparation of specifications and contract documents. Text-book: Kirby, *Elements of Specification Writing*. References: Laidlaw and Young, *Engineering Law*; H. D. and W. H. Anger, *Digest of Canadian Mercantile Law*. Mr. Pretious. [1-0; 1-0]

Courses for Graduate Students

550. (3) Advanced Structural Analysis.—The analysis of statically indeterminate structures, such as arches, rigid frames, continuous trusses, and suspension bridges. Mr. Finlay.

551. (3) Advanced Strength of Materials.—Stresses in shells; torsion of shafts of non-circular section; advanced problems in bending of beams; centre of twist; beams on elastic foundations; trigonometric series; curved beams; column theory; strength theories. Mr. Hrennikoff.

552. (3) Soil Mechanics.—Basic soil properties; classification; subsurface exploration; permeability, capillarity, seepage, flow nets; compression and consolidation; stresses in soil, settlement analysis; strength theory; direct and triaxial shear machines; stability of slopes; lateral pressure and retaining walls; application of soil mechanics to dams; bearing capacity of soil. Mr. Hrennikoff, Mr. Peebles.

553. (3) Advanced Hydraulics.—Flow in open channels; fluid mechanics; hydraulic models; hydraulic machines. Experimental projects in hydraulic laboratory. Mr. Pretious.

599. Thesis.—For M.A.Sc. degree.

Commerce

For description of courses in Commerce, see Arts, pages 135-138.

Economics

200. Principles of Economics.—As in Arts. (See page 138).

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-book: *Junior Laboratory Manual*. Mr. Kersey. [2-3; 2-3]

353. 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. Reference: Langsdorf, *Principles of Direct Current Machines*. Mr. Pullinger. [2-0; 1-0]

355. 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 and Corcoran, *Alternating Current Circuits*. Mr. Morgan. [1-0; 2-0]

356. Electrical Engineering 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. [0-3; 0-3]

357. Electronics and Electron Tubes. — Motion of charged particles; electrons in metals; thermionic emission; electrical discharges in gases; electron tubes and elementary circuits. Mr. Kersey. [2-2*; 2-2*]

451. Electrical Circuits and Apparatus. — D.C. and A.C. circuits and machinery; theory and application of electron tubes. Text-book: Fitzgerald, *Basic Electrical Engineering*. Mr. Noakes, Mr. Pulling. [2-2; 2-2]

453. 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*; *Senior Laboratory Manual*. Mr. Morgan. [2-3; 2-3]

457. 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*; *Senior Laboratory Manual*. Mr. Coulthard. [3-6; 3-6]

459. 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. Text-book: Kuhlmann, *Design of Electrical Apparatus*. Mr. MacLeod. [1-3; 1-3]

461. Electrical Illumination. — Radiation; luminous flux; light sources; photometric units and measurements; vision; lighting design. Text-book: Kraehenbuehl, *Electric Illumination*. Mr. Morgan. [2-0; 0-2]

463. Electric Power Transmission and Distribution.—Transmission line resistance, inductance, and capacitance; circle diagrams; corona and insulators; transmission line design; the electrical layout of power plants, substations, and distribution systems; short circuit calculations; relays. Text-book: Westinghouse, *Electrical Transmission and Distribution Reference Book*. Mr. Noakes. [2-2; 2-2]

465. Electrical Communication. — Resonant and coupled circuits; the theory and application of vacuum tubes as amplifiers, oscillators, modulators and detectors; miscellaneous aspects of tubes and circuits; electrical characteristics of telephone lines and cables; filters and impedance transformation. Text-book: Terman, *Radio Engineering*, 3rd edition; *Laboratory Manual*. Mr. MacLeod. [2-3; 2-3]

467. Transients, Instruments, and Measurements.—A review of electrical units and dimensions; electrical instruments and measurements; bridges; electrical transient phenomena. Text-books: Golding, *Electrical Measurements and Measuring Instruments*; Coulthard, *Transients in Electric Circuits*. Mr. Coulthard. [2-0; 2-0]

Courses for Graduate Students

551. Electromagnetic Theory and Electronics.—A study of electromagnetic fields and waves with reference to radio and electronics engineering. References: Bronwell and Beam, *Theory and Application of Microwaves*; Ramo and Whinnery, *Fields and Waves in Modern Radio*; current journals. Mr. Noakes. [2-3; 2-3]

553. Electric Power Systems.—The theory of power flow; synchronous machine characteristics; electrically long transmission lines; generalized circuit constants and circle diagrams; symmetrical components; stability and surge phenomena. References: *The Westinghouse Transmission and Reference Book*; Wagner and Evans, *Symmetrical Components*; current journals. Mr. Noakes. [2-3; 2-3]

555. Application of Operational Methods to Engineering.—Operational mathematics applied to the solution of linear and of partial differential equations; topics selected from electric circuit theory, dynamical theory; electric wave and diffusion problems. References: Coulthard, *Transients in Electric Circuits*; McLachlan, *Complex Variable and Operational Calculus*. Mr. Coulthard. [2-0; 2-0]

599. Thesis.—For M.A.Sc. degree.

English

150. Composition.—Designed for students in Applied Science. The work consists of (1) essays, class exercises, and selected reading; (2) written examinations. Students will be required to make a passing mark in each. Text-books: Perrin, *Writer's Guide and Index to English*; Brown, *Present Tense*, revised edition. [2-0; 2-0]

250. Technical Writing.—Instruction in preparing and writing technical papers and reports, emphasizing appropriate organization and forms.

[1-0; 1-0]

For descriptions of other courses in English, see Arts, pages 143-145.

Forestry

151. The Profession of Forestry. — Survey of the profession of forestry; opportunities available to trained men. Text-book: Illick, *An Outline of General Forestry*. Mr. Haines. [1-0; 1-0]

160. Forest Surveying.—Field survey and mapping practice. Text-book: Breed and Hosmer, *Elementary Surveying*. Mr. Johnson. [1-3; 1-3]

250. Silvics.—Climatic, edaphic, physiographic, and biotic factors affecting the establishment and growth of trees and forests. Text-book: Toumey and Korstian, *Foundations of Silviculture*, 2nd edition. Mr. Griffith. [0-0; 1-2]

251. Forest Fire Protection.—Fire prevention: danger rating; fire behaviour, detection, communication, transportation and suppression; control planning. Text-books: Folweiler and Brown, *Fire in the Forests of the United States*; *Western Fire Fighters Manual*. Mr. Haines. [1-2; 1-2]

252. Forest Botany.—An introduction to botany, with special reference to forest conditions. Text-book: Holman and Robbins, *A Text-book of General Botany*. Mr. Griffith. [2-2; 2-2]

253. Forest Soils. — Fundamentals of forest soil science. Text-book: Lutz and Chandler, *Forest Soils*. Mr. Griffith. [1-2; 0-0]

260. Forest Surveying.—Stadia; route surveying, simple curves and earthwork; solar and stellar observations; air survey, photo interpretation and type mapping. Text-books: Spurr, *Aerial Photographs in Forestry*; Breed and Hosmer, *Elementary Surveying*. Mr. Johnson. [1-2; 1-2]

270. Wood Technology.—The macroscopic characteristics and properties of wood structure. Text-book: Brown, Panshin and Forsaith, *Wood Technology*, Volume I. Mr. Wellwood, Mr. Haines. [1-2; 1-2]

350. Silviculture.—Silvicultural systems; intermediate cuttings; natural regeneration; applied silviculture in the various regions of North America. Text-book: Hawley, *Practice of Silviculture*, 5th edition. Mr. Allen. [2-2*; 2-2*]

353. Seminar.—Oral presentation and discussion of current forestry topics; reviews of important papers in forestry periodicals. The staff. [1-0; 1-0]

355. Seeding and Planting.—Artificial regeneration; forest nursery practice. Text-book: Toumey and Korstian, *Seeding and Planting in the Practice of Forestry*, 3rd edition. Mr. Allen. [1-2*; 1-2*]

360. Forest Mensuration.—Log scaling; timber cruising; application and preparation of volume, stand and yield tables; statistical analysis. Text-book: Chapman and Meyer, *Forest Mensuration*. Mr. Ker. [2-3; 2-3]

370. Wood Technology.—The microscopic characteristics and identification of wood; morphology, economic uses of commercial North American Timbers. Text-book: Brown, Panshin and Forsaith, *Wood Technology*, Volume I. Mr. Wellwood. [1-3; 1-3]

371. General Logging.—General and distinctive logging methods in the forest regions of North America. Text-book: Brown, *Logging*. Mr. Knapp. [2-0; 2-0]

380. Forestry Policy and Administration.—The development and status of forestry, forest legislation and administration in Canada, United States and other countries. Mr. Haines. [2-0; 2-0]

381. Forest Economics.—Principles of forest economics; economic and social value of forests; forestry and land use; forest taxation, forest credit, and forest fire insurance; forestry as a private business enterprise. Text-book: Buttrick, *Forest Economics and Finance*. Mr. Besley. [2-0; 2-0]

390. (3) Summer Camp.—A four weeks summer camp at the University Research Forest near Haney is required of all forestry students preceding their final year at the University. (See page 198). The staff.

450. Advanced Silvics and Silviculture.—Fundamental silvicultural problems; the application of research findings to the practice of silviculture. Mr. Allen. [2-0; 2-0]

455. Problems in Silvics and Silviculture.—Experimentation applied to specific forest problems. Each student is required to carry out an original investigation and submit a report. Mr. Allen. [0-4; 0-4]

460. Advanced Mensuration.—Recent developments in mensuration research methods; prediction of growth and yield; statistical methods. Text-book: Bruce and Schumacher, *Forest Mensuration*. Mr. Ker. [1-3; 1-3]

462. Forest Finance.—Costs of producing and harvesting the forest crop; valuation of forest land and timber; appraisal of stumpage and damage. Text-book: Matthews, *Management of American Forests*. Mr. Besley. [1-2; 1-2]

463. Forest Management.—Principles of forest organization and regulation of the cut; sustained yield management; working plans. Text-book: Matthews, *Management of American Forests*. Mr. Griffith. [2-3; 2-3]

464. Aerial Surveys.—Aerial surveys; photo-interpretation and plotting methods. Text-book: Trorey, *The Handbook of Aerial Mapping and Photogrammetry*. Mr. Johnson. [1-2; 1-2]

472. Logging Engineering.—Principles of engineering as applied to logging in the Pacific Northwest; analysis and cost studies of various phases of logging; the preparation of detailed logging plans; operating methods. Text-book: Matthews, *Cost Control in the Logging Industry*. Mr. Knapp.

[2-3; 2-3]

473. Milling and Marketing.—Lumber manufacturing methods and machinery, mill layout and design. Lumber markets and marketing methods. Text-book: Brown, *Lumber*. Mr. Knapp.

[2-4*; 2-4*]

474. Lumber Grading.—An intensive study of the grading, tallying, and shipping of Pacific Coast lumber products. Text-books: B.C. Lumber Manufacturers' Association, *Lumber Grading*; B.C. Forest Lumber Manufacturers' Association, *Standard Grading and Dressing Rules*. Mr. Dixon.

[0-0; 1-2]

475. Forest Products.—The pulp and paper industry; veneer and plywood; laminated wood; chemical and physical treatment of woods. Mr. Wellwood.

[2-4*; 2-4*]

477. Wood Seasoning and Preservation.—Principles and methods of seasoning forest products; preservative treatments. Mr. Wellwood.

[1-3; 1-3]

Courses for Graduate Students

549. Thesis.—For M.F. degree.

551. (1-3) Problems in Forest Fire Protection.—Advanced work in specialized phases of forest fire protection with particular emphasis on recent developments in the fields of detection, communication, and transportation planning. Hours to be arranged. Mr. Haines.

553. (1) General Forestry Seminar.—Required of all graduate students in forestry. The staff.

555. (1-3) Research in Silvics and Silviculture.—A course designed to supplement and guide the work on the thesis may be arranged with the approval of the Department. Hours to be arranged. Mr. Allen.

556. Forest Tree Seed.—Seed production, collection, provenance, testing, treatment, and the application of these to the practice of forestry. Mr. Allen.

[1-0; 1-0]

557. Forest Genetics.—Principles of forest genetics, extensive and intensive methods of forest tree improvement, techniques used in tree-breeding. Mr. Allen.

[1-0; 1-0]

560. (1-3) Problems in Forest Mensuration.—Students with adequate training in mensuration may undertake research in forest mensuration under direction. Hours to be arranged. Mr. Ker.

561. (1-3) Problems in Forest Management.—Advanced work and special studies may be taken in forest management under direction. Hours to be arranged. Mr. Griffith.

565. Forest Research Methods.—Curve fitting, multiple correlation, tests of significance, analysis of variance and covariance, design of experiments. Mr. Ker.

[1-2; 1-2]

566. Problems in Forest Surveys.—Mr. Johnson.

[1-2; 1-2]

570. Research in Wood Anatomy.—Basic studies of the anatomy of wood; methods of preparing woody materials for microscopic examination. Mr. Wellwood.

[1-2; 1-2]

575. (1-3) Problems in Forest Products.—Special investigations in wood and other forest products; research, development, and marketing involved in the production of forest products. Hours to be arranged. Mr. Wellwood.

578. (1-3) Research in Mechanical Properties of Wood.—Special problems in the determination of stress-strain relationships in wooden structures. Hours to be arranged. Mr. Wellwood.

581. (1-3) Problems in Forest Economics and Finance.—Advanced work may be taken under special assignment. Hours to be arranged. Mr. Besley.

649. Thesis.—For Ph.D. degree.

The University Research Forest

An area comprising a solid block of land about 7 miles long and $2\frac{1}{2}$ miles wide, situated north of the town of Haney was crown granted to the University by the Provincial Government on March 25th, 1949. This area is well suited for field instruction in cruising, mensuration, silviculture, logging engineering and management and for research in forestry and related sciences.

A gift of \$120,000 by the B.C. Loggers Association has provided a well equipped and exceptionally effective camp centrally located in the area. This camp provides accommodation for 60 students and staff engaged in field practice and research.

The University Campus Forest

The Campus Forest consists of a narrow belt south and west of the University, and is typical of the lowland stands on the southern coast. It contains the principal species of trees and shrubs of the region, including old trees as well as young growth of different ages. It 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 to provide planting stock.

Vancouver Laboratory

Forest Products Laboratories of Canada

Forest Service

Department of Resources and Development, Canada

Technical Staff

R. M. BROWN, M.B.E., B.Sc.F. (Toronto), Superintendent.

R. S. PERRY, B.Sc. (McGill), Senior Engineer.

MISS EDITH M. HENDERSON, M.A. (Glasgow), B.L.S. (McGill), Librarian.

Division of Timber Mechanics

J. B. ALEXANDER, M.Sc. (New Brunswick).

W. J. SMITH, B.A.Sc. (Brit. Col.).

P. L. NORTHCOTT, B.A.Sc. (Brit. Col.).

Division of Wood Utilization

F. W. GUERNSEY, B.A.Sc. (Brit. Col.).

C. F. McBRIDE, B.A.Sc. (Brit. Col.).

G. R. W. NIXON, B.A.Sc. (Brit. Col.).

C. F. ARCHER, B.Sc.F. (Toronto).

K. RYMER, B.S.F. (Brit. Col.).

W. C. FOUNTAIN, B.Sc.F. (Toronto).

Division of Wood Preservation

W. M. CONNERS, B.A.Sc. (Toronto).

H. W. EADES, B.Sc.F. (Washington).

J. W. ROFF, B.S.F. (Brit. Col.).

G. BRAMHALL, B.A.Sc. (Brit. Col.).

Division of Wood Chemistry

J. A. F. GARDNER, M.A. (Brit. Col.), Ph.D. (McGill).

H. MACLEAN, M.B.E., M.S. (Brit. Col.).

G. M. BARTON, M.A. (Brit. Col.).

The Forest Products Laboratories of Canada is a research organization maintained by the Forest Service of the Department of Resources and Development, 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 cooperative 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. After World War II, the institution was reorganized on a regional basis to carry on research in all fields of forest products. There are four major divisions—Timber Mechanics, Wood Utilization, Wood Preservation, and Wood Chemistry—with laboratory facilities and equipment suited to a wide range of investigation. Close cooperation with industry permits the application of research findings to commercial practice.

An important phase of the work of the Laboratory is the technical service offered to the timber industry and to wood users on a wide variety of subjects having to do with forest products. Contact maintained with other forest products research organizations throughout the world permits a free exchange of technical information, which greatly enhances the value of this service.

A mutually beneficial scheme of cooperation 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. The staff of the Laboratory also has the benefit of the University Library and the advice and assistance of University specialists in related work.

Geology and Geography

453. Petrology.—The common rocks and the processes which formed them; determinations of 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; primarily for students in Mining Engineering. Text-book: Grout, *Kemp's Handbook of Rocks*. Mr. Watson. [2-0; 2-0]

449. Thesis.—For B.A.Sc. degree.

Courses for Graduate Students

599. Thesis.—For M.A.Sc. degree.

For descriptions of other courses in Geology and Geography, see Arts, pages 147-151.

Mathematics

150. Trigonometry and Geometry. — Inverse trigonometric functions, logarithmic solution of triangles, complex numbers, plane and solid analytic geometry. Text-book: Sisam, *College Mathematics*. [2-0; 2-0]

151. Algebra and Calculus.—Topics in algebra of importance in the development of the calculus, including functions and their graphs, partial fractions. [2-0; 2-0]

152. Calculus.—An introductory study of the differential and integral calculus, and some of the simpler applications. [2-0; 2-0]

153. Mathematics for Forestry.—Introduction to the calculus; practical trigonometry; elementary statistics. [3-0; 3-0]

250. Calculus.—Differential and integral calculus with applications. Text-book: Nelson, Folley, and Borgman, *Calculus*. [3-0; 3-0]

251. Plane and Solid Geometry.—Conics, cycloids, and other plane curves; curve fitting; solid analytic geometry; introduction to spherical trigonometry. Text-books: Palmer and Leigh, *Plane and Spherical Trigonometry*; Rider, *Analytical Geometry*. [2-0; 2-0]

350. Applied Calculus and Differential Equations.—Advanced calculus, Fourier series; probability; ordinary and partial differential equations. Text-book: Reddick and Miller, *Advanced Mathematics for Engineers*, revised edition. [3-0; 3-0]

For descriptions of other courses in Mathematics, see Arts, pages 159-161.

Mechanical Engineering

152. Mechanical Drawing. — Free hand lettering, orthographic projection; dimensioning; thread conventions; technical sketching; detail and assembly drawings of machine parts; tracing and blueprinting. Text-book: Svenson, *Essentials of Drafting*. Mr. Wolfe. [0-3; 0-3]

352. 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. Text-book: Svenson, *Essentials of Drafting*. Reference: Schuman, *Technical Drafting*. Mr. Wolfe.

356. Machine Shop Practice.—Practical experience on the basic metal cutting machines; engine lathe, shaper, drill press and milling machine. Simple jigs and fixtures. Layout and bench work. Reference: Ford Trade School, *Shop Theory*. Mr. McIlroy. [0-2; 0-2]

358. Machine Shop Practice. — Similar to M.E. 356 but intended for students in Electrical Engineering. Mr. McIlroy. [0-3*; 0-3*]

361. Kinematics of Machines.—Velocity and acceleration diagrams of mechanisms; instantaneous axes; linkages; quick-return mechanisms; motion by direct contact; cams; rolling contact. Text-book: Schwamb, Merrill, and James, *Elements of Mechanism*. Mr. Richmond. [3-2; 0-0]

363. Machine Design 1.—Properties of materials; fatigue and stress concentration; theories of strength; screwed fastenings; design of gears and gear trains; bearings and lubrication. Text-books: Faires, *Design of Machine Elements*; Marks, *Mechanical Engineers' Handbook*. Mr. Richmond. [0-0; 3-2]

365. 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: Bevan, *Theory of Machines*. Mr. Vernon. [2-0; 2-0]

371. Applied Thermodynamics.—Fuels and combustion; steam boilers; steam engines and turbines; combustion engines; air compression; refrigeration. For students not specializing in Mechanical and Electrical Engineering. Text-book: Severns and Degler, *Steam, Air and Gas Power*. Mr. Wolfe. [2-3; 2-3]

373. Applied Thermodynamics.—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*. References: A.S.M.E., *Power Test Codes*; Shoop and Tuve, *Mechanical Engineering Practice*. Mr. McIlroy. [3-3; 3-3]

375. Applied Thermodynamics.—Similar to M.E. 373, but modified to meet the needs of students in Electrical Engineering. Mr. McIlroy. [3-3; 3-3]

377. Mechanical Services.—Heating, ventilation, and plumbing design of buildings; calculation of building heat losses and gains; design of the steam, hot water, and warm air heating systems; measurement of air flow and design of duct systems; layouts and practice of plumbing and sanitation for buildings; drainage systems; water supply; sewage disposal; materials and fixtures. Text-book: Gay and Fawcett, *Mechanical Equipment of Buildings*. Mr. Thomson. [2-0; 2-0]

456. Manufacturing Processes.—The application of shop practice to modern manufacturing processes. Mr. McIlroy. [1-0; 1-0]

463. Machine Design 2.—Shafts; belt and chain drives; columns; power screws and worm gears; design for welding; torsion of non-circular sections; pressure vessels; thick cylinders; press fits; curved bars; application of Castigliano's theorem; springs; design of machines and preparation of working drawings. Text-book: Faires, *Design of Machine Elements*. Mr. Richmond. [2-3; 2-3]

465. Applied Mechanics.—Strain measurement and photoelasticity; the gyroscope; mechanical vibrations; vibration isolation; torsional vibrations. Text-book: Freberg and Kemler, *Elements of Mechanical Vibration*. Mr. Richmond. [0-2; 2-2]

467. Mechanical Design.—Problems arising in the electrical power field; electrical machines, transmission lines and hydraulic, steam and diesel power plants. Text-book: Morse, *Power Plant Engineering and Design*. Mr. Thomson. [2-0; 2-0]

471. Prime Movers.—A more advanced course in the theory of all types of prime movers; the principles of design and operation of water turbines, steam turbines, and internal combustion engines. Text-book: Lichty, *Internal Combustion Engines*. Mr. Vernon. [3-0; 3-0]

472. Mechanical Engineering Laboratory.—Operation and testing of laboratory machines, illustrating the theory covered in the corresponding lecture courses. Mr. Vernon. [0-3; 0-3]

475. Design of Steam Power Plants.—A study of the function, construction, and performance of the 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; local plant visits. Text-book: Skratzki and Vopot, *Applied Energy Conversion*. Mr. McIlroy. [2-3; 0-0]

477. Heating, Ventilating, Air Conditioning, and Refrigeration.—Factors affecting human comfort; calculation of building heat losses and gains; design of steam, hot-water, and warm-air heating systems; measurement of

air flow and design of duct systems; design and performance of refrigerating equipment; refrigerants; heat transfer and flow of fluids. Text-book: Severns, *Heating, Ventilating, and Air Conditioning Fundamentals*. Mr. Thomson. [2-0; 2-3]

481. Aeronautics.—General theory of flight; aerofoils, lift, drag, distribution of pressure, aspect ratio; stream lines, airscrews, performance curves; general principles of design and methods of construction; theory of stability. Text-book: Jones, *Elements of Practical Aerodynamics*. Mr. Vernon. [3-3; 3-3]

Courses for Graduate Students

561. Advanced Applied Mechanics.—Bending of beams on elastic foundation; thin plates and shells; torsion; stress concentration; deformation beyond the elastic limit; photoelasticity. Text-book: Timoshenko, *Strength of Materials*, Parts I and II. Mr. Richmond. [2-3; 2-3]

563. Applied Theory of Elasticity.—Mathematical theory of elasticity as applied to problems arising in mechanical engineering; plane stress and plane strain; the torsion problem; bending of prismatical bars. Mr. Richmond. [2-3; 2-3]

565. Mechanical Vibrations. — (Extension of M.E. 465). Vibration of elastic bodies; engine dynamics and torsional vibrations; self-excited vibrations; vibration of non-linear systems; problems and computations; methods of vibration measurement. Text-book: Den Hartog, *Mechanical Vibrations*. Mr. Richmond. [2-3; 2-3]

567. Heat Transfer.—Theory of heat transfer as applied to problems in the field of mechanical engineering; principles and applications of the mechanism of heat transfer by conduction, convection, and radiation. Mr. Wolfe. [2-0; 2-0]

573. Power Plant Design.—Practical design of steam generating plants and auxiliaries. Preparation and discussion of engineering reports on topics associated with the design of plants. Mr. Wolfe. [2-0; 2-0]

599. Thesis.—For the M.A.Sc. degree.

Metallurgy

350. Chemical Metallurgy.—Introduction to metallurgy; fuels; refractories; pyrometry; elementary physico-chemical principles of metallurgical operations; application to metallurgical reactions, including some aspects of assaying. Text-book: Newton, *Introduction to Metallurgy*. Mr. Forward, Mr. Samis. [2-3; 2-3]

351. 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: Brick and Phillips, *Structure and Properties of Alloys*, 2nd edition. Reference: Samans, *Engineering Metals and Their Alloys*. Mr. Forward and Mr. Armstrong. [2-0; 2-0]

352. Metallography.—Preparation of specimens and observation of microstructures; heat treatment of carbon steels and non-ferrous alloys; simple physical tests. Text-book: Kehl, *The Principles of Metallographic Laboratory Practice*, 3rd edition. Reference: Teichert, *Ferrous Metallurgy—Metallography and Heat Treatment of Steel*, Volume III. Mr. Armstrong. [0-3*; 0-3*]

360. Seminar.—Discussion of current topics; oral presentation of the subject matter contained in the Third Year Essay; training and practice in public speaking and technical writing. [0-0; 0-1]

450. Theoretical Metallurgy.—Development of the free energy concepts of the phase rule, heats of reaction and equilibria related to metallurgical

processes and alloys and their application in oxidation and reduction, electro-metallurgy, melts, gas reactions, and certain phases of alloying operations. Mr. Samis. [2-3; 2-3]

451. Applied Chemical Metallurgy.—Application of chemical principles in roasting, leaching, smelting, and refining, illustrated by operations in the metallurgy of iron and steel, the common base metals, light metals, precious metals, and ferro-alloys. References: A.I.M.E., *Basic Open Hearth Steel-making*; Liddell, *Handbook of Non-Ferrous Metallurgy*, 2nd edition. Mr. Forward, Mr. Armstrong, Mr. Samis. [2-0; 2-0]

452. Physical Metallurgy.—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-books: Seitz, *Physics of Metals*; Beynon, *The Physical Structure of Alloys*. References: Hume-Rothery, *The Structure of Metals and Alloys*; Barrett, *Structure of Metals*. Mr. Forward, Mr. Armstrong. [2-0; 2-0]

453. Metallurgical Calculations.—Problems on the thermodynamic and other physico-chemical principles involved in combustion, roasting, smelting, leaching, and refining. Text-book: Butts, *Metallurgical Problems*. Mr. Samis. [0-2; 0-2]

454. Laboratory and Research Methods.—Laboratory analysis of metallurgical products; study of selected problems in (a) Mineral Dressing, or (b) Chemical Metallurgy, or (c) Physical Metallurgy. Mr. Armstrong, Mr. Howard, Mr. Samis. [0-3; 0-6]

456. Applications of Metallography.—(Continuation of Metallurgy 352). Polishing ferrous and non-ferrous metals; identification of micro-constituents; macro-etching; contact prints; photography; radiographic, magnetic, and fluorescent inspection methods. Text-book: Kehl, *Principles of Metallographic Laboratory Practice*, 3rd edition. Mr. Armstrong. [0-3*; 0-3*]

457. Plant Management.—Metal production statistics and markets; ore-buying contracts; personnel and labour relations; metallurgical accounting, cost-finding, and inspection; professional ethics. Weekly seminar for formal discussion of current technical and social topics; written report on production methods and economic aspects of one of the metals. [1-1; 1-1]

458. Process Laboratory.—Application of chemical principles in the reduction, separation, and purification of metals. Mr. Samis. [0-3; 0-3]

459. Mechanical Metallurgy.—Relation between metallurgical factors and mechanical properties of metals; principles of fabricating methods; material selection; metallurgical design problems. References: Hollomon and Jaffe, *Ferrous Metallurgical Design*; Sachs and Van Horne, *Practical Metallurgy*. Mr. Armstrong. [1-0; 1-0]

Courses for Graduate Students

552. Advanced Physical Metallurgy.—Theories of the metallic crystalline state as applied to plastic deformation, fracture, creep, fatigue, anelasticity, recrystallization, anisotropy, age hardening, decomposition of austenite. Mr. Armstrong. [2-0; 2-0]

553. Advanced Theoretical Metallurgy.—Application to metallurgy of the principles of chemical physics, including statistical mechanics, reaction rates, theory of electrolytes, character of electro-thermal processes, and related topics. Reference: Slater, *Introduction to Chemical Physics*. Mr. Samis. [2-0; 2-0]

599. Thesis.—For M.A.Sc. degree. Research studies in mineral dressing, or chemical metallurgy, or physical metallurgy.

Mineral Dressing

350. Mineral Dressing 1.—Principles; testing procedure; sampling; crushing; screening; grinding; classification; gravity concentration; flotation; cyanidation; magnetic separation; milling calculations. Text-book: Richards and Locke, *Text-book of Ore Dressing*. References: Taggart, *Handbook of Mineral Dressing*; Wark, *Principles of Flotation*; Dorr, *Cyanidation and Concentration of Gold and Silver Ores*; Gaudin, *Principles of Mineral Dressing*; current periodicals. Mr. Howard. [2-3*; 2-3*]

450. Mineral Dressing 2. — (Continuation of Mineral Dressing 350). Flowsheets; mill location and design; smelter contracts; metallurgical calculations; non-metallics; coal preparation; plant control. Text-book: Richards and Locke, *Text-book of Ore Dressing*. Mr. Howard. [2-6*; 2-0]

Courses for Graduate Students

550. Theory of Fine Particles.—Measurement of particle size and surface area; physical and chemical behaviour of fine particles; methods of separation; settling; filtration; use of electrolytes; effect of slime coatings. Reference: Dalla Valle, *Micromeritics*, 2nd edition. Mr. Howard. [2-0; 2-0]

Mining

350. Principles of Mining 1.—Mine economics, prospecting, exploration, mine development, breaking ground, ground support, transportation. Text-book: Lewis, *Elements of Mining*. References: Young, *Elements of Mining*; Peele, *Mining Engineers' Handbook* (a reference for all courses in mining). Mr. Crouch. [2-0; 2-0]

450. Principles of Mining 2. — (Continuation of Mining 350). Mineral economics; mine sampling and valuation, mining methods. References: Hoover, *Economics of Mining*; Parks, *Examination and Valuation of Mineral Property*. Mr. Crouch. [2-0; 2-0]

451. Mine Management. — Mine plant; mine ventilation, industrial hygiene, accident prevention; mine organization and management; mining law. Mr. Crouch. [2-0; 2-0]

454. Problems and Reports.—Problems in mine plant design; reports on selected topics; discussion of current technical literature. Reference: Staley, *Mine Plant Design*. Mr. Crouch. [0-4; 0-4]

Nursing and Health

151. History of Nursing. [1-0; 1-0]

152. Elementary Biochemistry, as Applied to Physiology. [1-0; 1-0]

154. (1) Essay.—To indicate the relation of some phase of the academic programme to nursing.

454. Preventive Medicine.—The public health aspects of preventable disease. Text-book: Smillie, *Preventive Medicine and Public Health*. [3-0; 2-0]

455. Mental Hygiene. [1-0; 1-0]

457. Infant and Child Health.—The nurse's responsibility in the promotion and maintenance of individual health, with emphasis on the infant and child. [1-0; 1-0]

459. Sanitation.—Community sanitation and relevant legislative measures. [0-0; 1-0]

461. Public Health Organization. [1-0; 0-0]

463. The Principles and Practice of Public Health Nursing.—Evolution of principles; application to skills essential to the professional competence of the public health nurse. [3-0; 3-0]

- 466. Health Teaching.**—To prepare the public health nurse for her role as a health teacher. Content and technique are considered. [3-0; 3-0]
- 467. Current Nursing Problems.** [1-0; 1-0]
- 468. Teaching in Schools of Nursing.** — Application of principles and methods of teaching to school of nursing curricula. [2-0; 2-0]
- 469. Principles of Supervision in Schools of Nursing.**—Organization of schools of nursing, with special reference to function of wards or teaching units. Experience records, case studies, ward clinics, etc., which assist in the correlation of theory and practice. [2-0; 2-0]
- 471. Social Case Work.**—Principles underlying social case work; interrelation of community health and welfare agencies. [0-0; 2-0]
- 477. Sociology of the Family.**—The family as a primary unit of society. [2-0; 0-0]
- 481. Principles and Methods of Teaching.** [2-0; 0-0]
- 485. (1) Essay.**—Presentation and discussion of a written report upon an elected problem or topic within the scope of nursing education or public health nursing.
- 486. (2) Field Work in Nursing B*.**—Field trips for observation with community organizations. Before, during and at the close of the academic year.
- 487. Field Work in Nursing C.**—Field trips for observation and limited participation in teaching, supervision, and ward management in the schools of nursing of associated hospitals during and at the close of the academic year.

Physics

- 150. Mechanics.**—Statics and dynamics, with particular emphasis on the working of problems. Text-book: Singer, *Engineering Mechanics*. [3-3; 0-0]
- 151. Heat.**—Thermal properties of matter, and elementary thermodynamics. Text-book: Tyler, *Intermediate Heat*. [0-0; 3-3]
- 160. Mechanics and Heat.**—For Architecture students, emphasizing statics. Text-books: Singer, *Engineering Mechanics*; Tyler, *Intermediate Heat*. [2-3; 2-3]
- 250. Electricity and Magnetism.**—Quantitative study of basic principles; introduction to alternating currents and to electronic circuits. Text-book: Nelkon, *Electricity and Magnetism*. [2-3; 2-3]
- 260. Electricity, Light and Acoustics.** — For students in Architecture. Basic theory of electricity and A.C. circuits; principles of propagation of light and sound. Text-books: Nelkon, *Electricity and Magnetism*; Boast, *Illumination Engineering*; Evans, *Introduction to Colour*; Richardson, *Acoustics for Architects*. [2-3; 2-3]
- 360. Light.**—Radiation theory, refractometers, interference instruments, photography, applied spectroscopy, polarized light. For engineering students. [1-0; 1-0]
- 460. Metallurgical Physics.**—Atomic structure, X-ray and electron diffraction methods, theory of metals and alloys. [2-0; 2-0]
- 461. Geophysics.**—Geophysical exploration; magnetic, electrical, gravimetric and seismic methods of exploration for oil and minerals. Text-book: Nettleton, *Geophysical Prospecting for Oil*. [2-0; 2-0]

*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.

Courses for Graduate Students

552. Introduction to Theoretical Physics.—Problems in mechanics, elasticity; fluid flow, electricity, and magnetism treated by vector methods. Text-book: Page, *Introduction to Theoretical Physics*. [3-0; 3-0]

599. Thesis.—For M.A. Sc. degree.

For descriptions of other courses in Physics, see Arts, pages 166-170.

Zoology

459. Introductory Forest Entomology.—Forest insects in relation to forestry: examples of important problems, their recognition, damage, economic significance, how they are investigated, natural and applied control. Open to Forest Engineers only. Mr. Graham. [0-0; 2-2]

For descriptions of other courses in Zoology, see Arts, pages 181-185.

1950-51

THE
FACULTY
OF
AGRICULTURE

1950-1951

1950-51

FACULTY OF AGRICULTURE

General

The degree of Bachelor of Science in Agriculture (B.S.A.) is granted as a General Course degree or with Honours.

The General Course leading to the degree of B.S.A. covers a period of 4 years. This course prepares students for teaching, extension work, research, farming, and various phases of industry concerned with the production and processing of agricultural products. The degree will be granted on completion of courses amounting to 66 units chosen in conformity with Calendar regulations.

The first two years of work are devoted largely to acquiring a knowledge of the basic sciences, and to laying a foundation for more advanced studies in the science and practice of agriculture. During the last two years the student is permitted to select either a generalized course in agriculture or to specialize in some one phase of agriculture such as Agricultural Economics, Agricultural Mechanics, Agronomy, Animal Husbandry, Dairying, Horticulture, or Poultry Husbandry.

The course leading to the degree of B.S.A. with Honours covers a period of 5 years and may be taken in various specialized fields of study. Detailed descriptions of the requirements for the various Honours courses offered will be found on pages 244-257. The Honours degree will be granted upon the completion of 87 units of work extending over a period of 5 academic years or their equivalent, and chosen in conformity with the Calendar regulations pertaining to the curricula for the various courses. For admission to Honours standing the student must have at least Second Class standing in 33 units of work in the first two years.

For regulations concerning the degree of M.S.A. see "Faculty of Graduate Studies" (pages 297, 298).

In addition to degree courses, courses leading to Diplomas in Agriculture and in Horticulture are provided. Short courses at the University and at various points in the Province are also offered, under the auspices of the Department of University Extension.

Admission, Registration, Etc.

For statement as to general requirements for admission to the University, registration, etc., see pages 38-44.

Physical Education

Two activity courses in Physical Education are required of all students in the First and Second Years of the Faculty of Agriculture except ex-service personnel and members of military units operating on the campus. For details of requirements see pages 115-117 in the Faculty of Arts and Science.

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, Agricultural Mechanics, 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.

Course for Professional Gardeners

This course in Horticulture is designed to give special training in the more important horticultural practices, together with instruction in horticulture and in certain closely allied subjects.

The course is intended to prepare students for the profession of gardening. Prerequisites include high school graduation or its equivalent. A "Certificate of Progress" will be issued on satisfactory completion of certain required courses, together with four years' experience in applied horticulture. On satisfactory completion of certain additional University courses, together with five years of experience in applied horticulture, a "Diploma in Horticulture" will be granted.

It is anticipated that instruction in certain courses will be offered during the session 1950-51. Details will be provided through the Registrar's office.

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.

Special announcements giving details of the various courses are issued each year, and may be obtained from the Director of University Extension on application.

Courses Leading to the Degree of B.S.A.

University Entrance standing, or its equivalent, is required for admission to all courses leading to the degree of B.S.A.

Four-Year General Course Curriculum

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, Agricultural Mechanics, Agronomy, Animal Husbandry, Dairying, Horticulture, and Poultry Husbandry.

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 or 101
- (d) English 100 and 101, and either English 200 or English 205
- (e) Mathematics 101
- (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
Agricultural Mechanics 201	Bacteriology 201	German 90
Agronomy 202	Biology 330	Russian 100 or 200
Agronomy 211	Botany 200	Spanish 90
Animal Husbandry 215	Chemistry 200	Language continued from University Entrance 3 or 6 units
Dairying 203	Geology 200	Commerce 251
Horticulture 213	Mathematics 200, 201 or 202	Economics 200
Poultry Husbandry 200 and 201	Physics 100 or 101	History 101
	Zoology 200	Home Economics
		Political Science
		Psychology 100

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 101 or Biology 100 until Second Year.

Students planning to do their major work in Agricultural Economics may substitute Economics 200 for one of the B electives in their Second Year, but prior to graduation they must elect a second subject from Group B.

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 ins.) 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.

Five-Year Honours Curricula

Candidates for Honours must complete a minimum of 87 units of work extending over 5 academic years or their equivalent.

Students whose proposed scheme of work for the Third, Fourth, and Fifth Years involves Honours 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 33 units of work in the first two years, and who have chosen their courses and fulfilled the prerequisites in accordance with the outline below:

First Year

Course and Number	Description	Units
Agriculture 100.....	General Agriculture	3
Biology 100.....	Intro. Biology	3
Chemistry 100 or 101.....	General Chemistry	3
English 100.....	Literature	3
English 101.....	Composition	
Mathematics 101.....	Algebra, Geometry, Trigonometry	3

Second Year

Course and Number	Description	Units
English 200.....	Literature	3
or English 205.....	Composition and Literature.....	
Mathematics 202.....	Calculus	3
Physics 100 or 101.....	Elementary Physics	3
Elective A.....	(See Head of Department)	3
Electives B and/or C		6

Third, Fourth and Fifth Years

In order to retain Honours standing, at least Second Class standing must be obtained in each of the succeeding years in all courses as required by the head of the department concerned.

The specific subjects listed below, which must be taken in the Third, Fourth, and Fifth Years in the various Honours courses, must be approved by the Dean and by the head of the department concerned. Eighteen units constitute a full course in each of these years. In addition to Agriculture 100, all students are required to take, as a minimum of agricultural subjects outside of their major department, 12 units of courses to be chosen in not fewer than three departments.

Honours are of two grades: First and Second Class. 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 Fourth and Fifth Years. If a student fails to meet the above requirement with regard to Second Class standing in his Fifth Year, he may be granted Pass standing for graduation.

A graduating essay embodying the results of some independent investigation shall be presented by each student. The topic shall be selected, with the approval of the head of the department concerned, before the end of the Fourth Year's work.

Two typewritten copies of each essay on standard-size paper (8½x11 ins.) 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.

Candidates for Honours are required to take at the end of their Fifth 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, Fourth, and Fifth Years.

Agricultural Economics

Third Year

Course and Number	Description	Units
Agric. Econ. 301.....	Intro. to Agric. Econ.....	3
Commerce 361.....	Marketing.....	3
Economics 335.....	Statistics 1.....	3
Language.....		3
Electives.....		6

Fourth Year

Course and Number	Description	Units
Agric. Econ. 300.....	Farm Management.....	3
Agric. Econ. 401.....	Marketing.....	3
Economics 310.....	International Trade.....	3
Electives.....		9

Fifth Year

Course and Number	Description	Units
Agric. Econ. 425.....	Undergraduate Essay.....	3
Economics 300.....	Money and Banking.....	3
Economics 301.....	Economic Theory.....	3
Economics 435.....	Statistics 2.....	3
Electives.....		6

Agricultural Mechanics

Third Year

Course and Number	Description	Units
Agric. Econ. 300.....	Farm Management.....	3
Agric. Mech. 302.....	Advanced Motors.....	3
Agronomy 313.....	Phys. Prop. of Soils.....	1½
Agronomy 314.....	Soil Conservation.....	1½
Elective		
or Agronomy 211.....	Intro. to Soils.....	
or Chemistry 200.....	Quan. and Qual. Analysis.....	3
Language.....		3
Physics 200.....	Mechanics, Molecular Physics, and Heat.....	3

Fourth Year

Course and Number	Description	Units
Agric. Mech. 305	Irrigation and Drainage	3
Agric. Mech. 404	Building Construction	3
Agric. Mech. 406	Advanced Machinery	3
Agric. Mech. 408	Advanced Mechanics	3
Electives	(From Agriculture)	6

Fifth Year

Course and Number	Description	Units
Agric. Mech. 410	Shopwork	1½
Agric. Mech. 412	Rural Electrification	1½
Agric. Mech. 425	Undergraduate Essay	3
Electives	(From Agriculture)	6
Electives	(From Applied Science)	6

Agricultural Science**Second Year**

Course and Number	Description	Units
English 200	Literature	
or English 205	Composition and Literature	3
Mathematics 202	Calculus	3
Physics 100 or 101	Elementary Physics	3
Elective A		
Agronomy 211	Intro. to Soils	3
Elective B		
Botany 200	Botany (Intro.)	3
Chemistry 200	Quan. and Qual. Analysis	3

Third Year

Course and Number	Description	Units
Agronomy 202	Field Crops	3
Animal Husbandry 215	Fund. of An. Husbandry	3
Bacteriology 201	Intro. Bacteriology	3
Chemistry 300	Organic Chemistry	3
Dairying 203	Fund. of Dairying	3
Language		3

Fourth Year

Course and Number	Description	Units
Agric. Econ. 300	Farm Management	3
Agric. Mech. 201	General Mechanics	3
Electives		3
Horticulture 213	Practical Horticulture	3
Poultry Husbandry 200	Fund. of P.H.	1½
Poultry Husbandry 201	Fund. of P.H.	1½
Zoology 200	General Zoology	3

Fifth Year

Course and Number	Description	Units
Electives		15
Undergraduate Essay		3

Agronomy**Third Year**

Course and Number	Description	Units
Agronomy 202	Field Crops	
or Agronomy 211	Intro. to Soils	3
Botany 200	Botany (Introductory)	3
Chemistry 300	Organic Chemistry	3
Electives		6
Language		3

Fourth Year

Course and Number	Description	Units
Agricultural Economics		3
Agronomy 304	Range Management	1½
Agronomy 305	Pasture Management	1½
Agronomy 313	Phys. Prop. of Soils	1½
Agronomy 314	Soil Conservation	1½
Biology 330	Prin. of Genetics	3
Electives		3
Geology or Geography		3

Fifth Year

Course and Number	Description	Units
Agronomy 406	Field Crop Technology	1½
Agronomy 407	Plant Breeding and Seed Production	3
Agronomy 416	Soil Genesis, Morphology, and Classification	1½
Agronomy 425	Undergraduate Essay	3
Animal Husbandry		3
Electives		6

Plant Breeding**Third Year**

Course and Number	Description	Units
Agronomy 211	Intro. to Soils	3
Biology 330	Principles of Genetics	3
Botany 316	Plant Path. (Elementary)	2
Botany 330	Plant Physiology	2
Chemistry 300	Organic Chemistry	3
Horticulture 441	Plant Nutrition (a)	2
Language		3

Fourth Year

Course and Number	Description	Units
Agronomy 406	Field Crop Technology	1½
Agronomy 407	Plant Breeding and Seed Production	3
Agronomy 421	Biometry	1½
Botany 304	Systematics	3
or Zoology 302	Intro. to Entomology	3
Botany 340	Histology	2
Electives		to 18
Horticulture 213	Practical Horticulture	3

Fifth Year

Course and Number	Description	Units
Agronomy 405	Field Crops (Advanced)	1½
Agronomy 416	Soil Genesis, Morphology, and Classification	1½
Agronomy 425	Undergraduate Essay	3
Botany 304	Systematics	3
or Zoology 302	Intro. to Entomology	3
Botany 516	Plant Path. (Advanced)	3
Electives		to 18

Soils**Third Year**

Course and Number	Description	Units
Agronomy 202	Field Crops	3
Agronomy 312	Soil Bacteriology	3
Agronomy 313	Physical Properties of Soil	1½
Agronomy 314	Soil Conservation	1½
Chemistry 300	Organic Chemistry	3
Chemistry 304	Physical Chemistry	3
Language		3

Fourth Year

Course and Number	Description	Units
Agronomy 415	Chemical Properties of Soils	3
Agronomy 416	Soil Genesis & Classification	1½
Agronomy 421	Biometry	1½
Botany 200	Introductory Botany	3
Chemistry 310, or	Adv. Quan. and Qual. Analysis	3
Chemistry 409 and	Qual. Org. Analysis	1½
Dairying 413	Dairy Mycology	1½
Geology 200, or	General Geology	3
Biology 400, or	General Physiology	
Bacteriology 301	Immunology	
Elective		3

Fifth Year

Course and Number	Description	Units
Agronomy 423	Seminar	1
Agronomy 425	Essay	3
Botany 330	Plant Physiology	2
Chemistry 425 or alternate	Biochemistry	3
Electives		9

Animal Nutrition**Third Year**

Course and Number	Description	Units
Agronomy 211	Introduction to Soils	3
Animal Husbandry 322	Animal Nutrition	3
Chemistry 300	Organic Chemistry	3
Chemistry 304	Physical Chemistry	3
Dairying 304	Dairy Bacteriology	1½
Dairying 305	Dairy Bacteriology	1½
Language		3

Fourth Year

Course and Number	Description	Units
Agronomy 421	Biometry	1½
Animal Husbandry 422	Animal Feeding	3
Chemistry 310	Advanced Analysis	3
Chemistry 409	Qual. Org. Analysis	1½
Chemistry 425	Biochemistry	3
Poultry Husbandry 410	Poultry Nutrition	1½
Electives		4½

Fifth Year

Course and Number	Description	Units
Animal Husbandry 425	Undergraduate Essay	3
Animal Husbandry 522	Adv. Animal Nutrition	3
Biology 400	General Physiology	3
Electives		9

Animal Science**Third Year**

Course and Number	Description	Units
Agronomy 202	Field Crops	3
Bacteriology 201	Intro. Bacteriology	3
Botany 200	Intro. Botany	3
Chemistry 300	Organic Chemistry	3
Dairying 203	Fundamentals of Dairying	3
Language		3

Fourth Year

Course and Number	Description	Units
Agronomy 211	Introduction to Soils	3
Agronomy 421	Biometry	1½
Animal Husbandry 322	Animal Nutrition	3
Biology 330	Principles of Genetics	3
Biology 400	General Physiology	3
Electives		4½

Fifth Year

Course and Number	Description	Units
Animal Husbandry 419	Seminar	3
Animal Husbandry 425	Undergraduate Essay	3
Electives		12

Commerce**Third Year**

Course and Number	Description	Units
Agricultural Economics 301	Intro. to Ag. Ec.	3
Commerce 361	Marketing	3
Electives		9
Language		3

Fourth Year

Course and Number	Description	Units
Economics 300	Money and Banking	3
Economics 335	Statistics	3
Commerce 352	Intermediate Accounting	3
Agricultural Economics 401	Marketing	3
Electives		6

Fifth Year

Course and Number	Description	Units
Commerce 471	Business Finance	3
Commerce 481	Industrial Management	3
Commerce 491	Commercial Law	3
Electives		6
Undergraduate Essay		3

Dairy Bacteriology**Third Year**

Course and Number	Description	Units
Agronomy 211	Intro. to Soils	3
Dairying 304	Dairy Bacteriology	1½
Dairying 305	Dairy Bacteriology	1½
Chemistry 300	Organic Chemistry	3
Chemistry 304	Physical Chemistry	3
German 90	Beginners' Course	3
Animal Husbandry 215	Fund. of A.H.	
or Ag. Mech. 301	Food Mechanics	
or Bacteriology 301	Immunology	3

Fourth Year

Course and Number	Description	Units
Agronomy 312.....	Soil Bacteriology	3
Chemistry 425.....	Biochemistry	3
Dairying 301.....	Dairy Technology	3
Dairying 413.....	Dairy Mycology	1½
Electives.....		7½

Fifth Year

Course and Number	Description	Units
Dairying 407.....	Adv. Dairy Bacteriology.....	3
Dairying 425.....	Undergraduate Essay	3
Dairying 430.....	Undergraduate Seminar	3
Electives.....		9

Dairy Technology

To be taken in accordance with the curriculum provided under Food Technology. The electives of the Second Year are Dairying 203, Bacteriology 201, and Chemistry 200. The electives of the Fifth Year are to be selected after consultation with the Head of the Department.

Entomology**Second Year**

Course and Number	Description	Units
English 200.....	Literature.....	
or English 205.....	Composition and Literature.....	3
Mathematics 202.....	Calculus	3
Physics 100 or 101.....	Elementary Physics.....	3
Elective A.....		
Agronomy 211.....	Intro. to Soils.....	3
Elective B.....		
Chemistry 200.....	Quan. and Qual. Analysis.....	
Zoology 200.....	General Zoology.....	3

Third Year

Course and Number	Description	Units
Biology 330.....	Prin. of Genetics.....	3
Botany 200.....	Botany (Intro.).....	3
Chemistry 300.....	Organic Chemistry.....	3
Zoology 302.....	Intro. to Entomology.....	3
Zoology 303.....	Histology	
or Zoology 306.....	Vertebrate Biology	3
Elective.....		3

Fourth Year

Course and Number	Description	Units
Animal Husbandry 215*	Fund. of An. Husbandry	3
Agronomy 202*	Field Crops	
Horticulture 213*	Practical Horticulture	
Poultry Husbandry		
201, 202*	Fundamentals	3
Botany 316	Plant Path. (Elem.)	2
Zoology 301	Invertebrate Zoology	3
Zoology 305	Economic Entomology	2
Zoology 400	History and Gen. Prin. of Biology	2
Zoology 404	Experimental Zoology	3

Fifth Year

Course and Number	Description	Units
Animal Husbandry 421	Physiol. of Domestic Animals	3
Horticulture 213	Practical Horticulture	3
Horticulture 317	Vegetable Gardening	1½
Horticulture 441	Plant Nutrition (a)	2
Undergraduate Essay		3
Zoology 401	Practical Entomology	2
Zoology 407	Parasitology	3
Zoology 408	Biol. Methods and Procedure	1

*Any two to be selected.

Food Technology

Students interested in Food Technology in relation to Fisheries are advised to consult the Department of Zoology before the Third Year with regard to selection of courses. Zoology 200 should be taken in the Second Year.

The electives of the Fourth and Fifth Years are to be selected after consultation with the head of the department in which the Graduating Essay is being written.

Third Year

Course and Number	Description	Units
Agricultural Mechanics 301	Food Mechanics	3
Agronomy 211	Introduction to Soils	3
Agronomy 306	Identification and Standards	1½
Chemistry 300	Organic Chemistry	3
Chemistry 304	Physical Chemistry	3
Dairying 304	Dairy Bacteriology	1½
Dairying 305	Dairy Bacteriology	1½
Poultry Husbandry 306	Identification and Standards	1½

Fourth Year

Course and Number	Description	Units
Agricultural Mechanics 401.....	Advanced Food Mechanics.....	3
Agronomy 312.....	Soil Bacteriology	3
Agronomy 421.....	Biometry	1½
Animal Husbandry 406.....	Identification and Standards.....	1½
Chemistry 425.....	Biochemistry	3
Dairying 406.....	Identification and Standards.....	1½
Horticulture 406.....	Identification and Standards.....	1½
Elective.....		3

Fifth Year

Course and Number	Description	Units
Dairying 413.....	Dairy Mycology	1½
Poultry Husbandry 410.....		1½
Animal Husbandry 322 (2nd Term only).....		1½
Commerce 559.....	Industrial Accounting	2
Commerce 589.....	Industrial Problems	1
Electives, including essay.....		10½

Horticultural Science**Third Year**

Course and Number	Description	Units
Agronomy 211.....	Intro. to Soils.....	3
Botany 304.....	Systematics	3
Horticulture 314.....	Commercial Horticulture	1½
Horticulture 315.....	Hort. Prod. and By-prod.....	1½
Horticulture 316.....	Landscape Gard. and Floriculture	1½
Horticulture 317.....	Vegetable Gardening	1½
Horticulture 340.....	Food Values of Horti- cultural Crops	
or Biology 330.....	Principles of Genetics.....	3
Zoology 302.....	Intro. to Entomology	3

Fourth Year

Course and Number	Description	Units
Botany 316.....	Plant Path. (Elementary).....	2
Elective.....	(From Biology or Agric.).....	2
Horticulture 418.....	Systematic Horticulture	1½
Horticulture 419.....	Spec. Hort. Crops	1½
Horticulture 420.....	Methods of Research	3
Horticulture 441.....	Plant Nutrition (a).....	2
Horticulture 442.....	Plant Nutrition (b).....	2
Horticulture 443.....	Seminar in Pl. Nutrition	2
Zoology 305.....	Economic Entomology	2

Fifth Year

Course and Number	Description	Units
Electives	(From Biology or Agric.)	to 18
Horticulture 425	Undergraduate Essay	3
Horticulture 430	Research in Hort.	3
Horticulture 500	Research in Hort.	3-5
Horticulture 547	Advanced Plant Nutrition	4

Plant Nutrition**Third Year**

Course and Number	Description	Units
Agronomy 211	Intro. to Soils	3
Bacteriology 201	Intro. Bacteriology	3
Chemistry 300	Organic Chemistry	
or Horticulture 441	Plant Nutrition (a)	3
Elective	(From Biology or Agric.)	3
Two of		
Horticulture 314	Commercial Horticulture	
Horticulture 315	Hort. Prod. and By-prod.	
Horticulture 316	Landscape Gardening and Floriculture	
Horticulture 317	Vegetable Gardening	3
Horticulture 340	Food Values of Hort. Crops	3

Fourth Year

Course and Number	Description	Units
Electives	(From Agric. or Botany)	6½
Horticulture 418	Systematic Horticulture	1½
Horticulture 420	Methods of Research	3
Horticulture 441	Plant Nutrition (a)	
or Chemistry 300	Organic Chemistry	3
Horticulture 442	Plant Nutrition (b)	2
Horticulture 443	Seminar in Pl. Nutrition	2

Fifth Year

Course and Number	Description	Units
Electives	(From Agric., Biol., or Chemistry)	8
Horticulture 425	Undergraduate Essay	3
Horticulture 545	Research in Plant Nutrition	3
Horticulture 547	Advanced Plant Nutrition	4

Plant Pathology

Second Year

Course and Number	Description	Units
English 200	Literature	
or English 205	Composition and Literature	3
Mathematics 202	Calculus	3
Physics 100 or 101	Elementary Physics	3
Elective A		
Agronomy 211	Intro. to Soils	3
Elective B		
Botany 200	Botany (Intro.)	3
Chemistry 200	Quan. and Qual. Analysis	3

Third Year

Course and Number	Description	Units
Bacteriology 201	Intro. Bacteriology	3
Botany 315	Mycology	3
Botany 316	Plant Path. (Elementary)	2
Botany 330	Plant Physiology	2
Botany 340	Histology	2
German 90	Beginners' Course	3
Zoology 200	General Zoology	3

Fourth Year

Course and Number	Description	Units
Agronomy 202	Field Crops	3
Biology 330	Prin. of Genetics	3
Botany 304	Intro. to Systematics	3
Chemistry 300	Organic Chemistry	3
Horticulture 213	Practical Horticulture	3
Zoology 201	Agricultural Entomology	3

Fifth Year

Course and Number	Description	Units
Agronomy 421	Biometry	1½
Botany 500	Seminar	1
Botany 516	Plant Path. (Advanced)	3
Horticulture 317	Vegetable Gardening	1½
Horticulture 441	Plant Nutrition (a)	2
Undergraduate Essay		3
Electives		6

Poultry Nutrition

Third Year

Course and Number	Description	Units
Bacteriology 201	Intro. to Bacteriology	3
Chemistry 300	Organic Chemistry	3
Elective		3
Language		3
Poultry Husbandry 400	Poultry Farm Management	1½
Poultry Husbandry 401	Incubation and Hatchery Management	1½
Zoology 300	Comp. Anat. of Vertebrates	
or Zoology 303	Histology	
or Zoology 304	Vertebrate Embryology	3

Fourth Year

Course and Number	Description	Units
Agronomy 421	Biometry	1½
Chemistry 425	Outlines of Biochemistry	3
Dairying 304	Dairy Bacteriology	1½
Dairying 305	Dairy Bacteriology	1½
Electives		4½
Poultry Husbandry 405	Seminar	1½
Poultry Husbandry 410	Poultry Nutrition	1½
Poultry Husbandry 411	Feeding Management	1½
Poultry Husbandry 420	Physiology of Sex	
or P.H. 310	Breeding and Judging	1½

Fifth Year

Course and Number	Description	Units
Animal Husbandry 422	Animal Feeding	3
Biology 400	General Physiology	3
Electives		6
Poultry Husbandry 415	Diseases and Hygiene	1½
Poultry Husbandry 500		1½
Undergraduate Essay		3

Poultry Science

Third Year

Course and Number	Description	Units
Bacteriology 201	Intro. Bacteriology	3
Biology 431	Problems in Genetics	3
Chemistry 300	Organic Chemistry	3
Elective		3
Language		3
Poultry Husbandry 400	Poultry Farm Management	1½
Poultry Husbandry 401	Incubation and Hatchery Management	1½

Fourth Year

Course and Number	Description	Units
Agronomy 421	Biometry	1½
Biology 430	Seminar in Genetics	3
Electives		4½
Poultry Husbandry 300	Markets and Marketing	1½
Poultry Husbandry 410	Poultry Nutrition	1½
Poultry Husbandry 411	Feeding Management	1½
Zoology 300	Comparative Anatomy of Vertebrates	3
Poultry Husbandry 420	Phys. of Sex Reproduction and Endocrinology	1½

Fifth Year

Course and Number	Description	Units
Animal Husbandry 423	Animal Breeding	3
Biology 400	General Physiology	3
Poultry Husbandry 310	Breeding and Judging	1½
Poultry Husbandry 311	Advanced Breeding	1½
Poultry Husbandry 405	Seminar	1½
Poultry Husbandry 415	Diseases and Hygiene	1½
Undergraduate Essay		3
Zoology 304	Vertebrate Embryology	3

Teacher Training Course

As well as satisfying the requirements of their own departments in the Faculty, students planning to enter the Teacher Training Course through Agriculture must have at least nine units of credit to be selected at will from the following subjects: Chemistry, Mathematics, Physics or Biology (including Botany and Zoology), in addition to Chemistry 100 or 101, Mathematics 101, Physics 100 or 101, and Biology 100.

Students who intend to proceed to the Teacher Training Course are required to take Psychology 100 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. In any course which involves both laboratory work and written examinations, students will be required to make satisfactory standing in both parts. Results in laboratory work will be announced prior to the final examination, and students who have not obtained a mark of at least 50% will neither be permitted to write the examination nor to receive any credit for the course. If the course is repeated no exemption will be granted from the work in either part.

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

4. (a) A student taking 9 or more units in the Winter Session will receive credit for a course only if, as a result of the final examinations of that Session, he passes not only in that course, but in courses totalling at least 9 units. The passing grade for a course is 50%.

(b) A student taking less than 9 units in the Winter Session will receive credit for a course only if, as a result of the final examinations of that Session, he passes in all his courses. The passing grade for a course is 50%.

(c) A student in the Summer Session will receive credit for each course in which he obtains a grade of at least 50%.

5. Courses for which credit has not been obtained must be repeated, or permissible substitutes taken, in the next regular session attended. In the Winter Session the total of all courses taken may not exceed 18 units except with approval of the Faculty.

6. (a) In the Winter Session, a candidate will be granted a supplemental in a subject which he has taken during the year provided (i) he has written the final examination and has obtained a final mark of not less than 35%; and (ii) he has obtained at least 9 units of credit in the Session. In any one session, no candidate will be granted supplementals in more than 6 units.

(b) In the Summer Session, a candidate will be granted a supplemental in a subject which he has taken during that session provided (i) he has written the final examination and has obtained a final mark of not less than 35%, and (ii) he has obtained 3 units of credit in that session.

7. 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.

8. If a supplemental granted in a course is passed with a grade of at least 50%, credit will be given for the course.

9. In all but the final year a candidate who has been granted a supplemental may write it only once. If he fails, he must repeat the course or take a permissible substitute. In the Final Year he may write it twice (subject to the limitation in paragraph 5).

10. Supplemental examinations, covering the work of both the First and Second Terms, will be held in August or September in respect of Winter Session examinations, and in July in respect of Summer Session examinations.

Local centres for supplemental examinations in September will be arranged in British Columbia at the following centres:

Cranbrook, Dawson Creek, Kamloops, Kelowna or Penticton, Ocean Falls, Prince George, Prince Rupert, Trail or Nelson, Victoria College.

A student wishing to write supplemental examinations at one of these centres must state in his application the centre chosen and must pay a fee of \$2.50 in addition to the regular fee of \$5.00 a paper for a supplemental examination.

11. Applications for supplemental examinations in respect of the Winter Session examinations, accompanied by the necessary fees (see Schedule of Fees), must be in the hands of the Registrar by August 1st.

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.

13. For regulations regarding re-reading of papers, see Faculty of Arts and Science, "Re-Readings" (page 126).

14. A student with standing defective in respect of more than 3 units, although he will not be permitted to register in a higher year, may be allowed to continue by registering in the lower year and by taking courses in accordance with Paragraph 5 above.

15. A student who twice in succession, fails to obtain credits in the Winter Session may, upon the recommendation of Faculty, be required by the Senate to withdraw from the Faculty.

16. 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.

COURSES IN AGRICULTURE

Note: for unit values of courses and the number of lecture and laboratory hours per week in each course, see page 127.

Agriculture

100. (3) **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 Agricultural Mechanics, Agronomy, Animal Husbandry, Dairying, Horticulture, and Poultry Husbandry. First Year. The staff. [2-2; 2-2]

Agricultural Economics

300. (3) **Farm Organization and Management.**—Farm accounts and records. Economic principles in rotations, rates of fertilizer application, rates of feeding and combinations of enterprises. Management problems connected with capital equipment, labour, financing, evaluation of a farm, getting started in farming, and obtaining information. Farm management research methods. Text-book: Black, Clawson, Sayre and Wilcox, *Farm Management*. Mr. Anderson. [2-2; 2-2]

301. (3) **Introduction to Agricultural Economics.** — Agriculture in relation to rest of the economy; role of agriculture in economic development; production, supply and demand functions; effect of monopolistic elements, changes in price level, population growth and technological progress. Mr. Anderson. [3-0; 3-0]

401. (3) **Marketing.**—The principles applied to the individual farm and to agriculture as a whole. Contributions of farmer movements to our knowledge of marketing, cooperative marketing, and evolution of marketing legislation. [3-0; 3-0]

425. (3) **Undergraduate Essay.**

500. (3) **Agricultural Problems and Policy.**—Influential doctrines in agricultural policy; problem of low labour returns. Critical review of present and proposed price and income policies. Prerequisite: adequate background in Economics. Mr. Anderson. [3-0; 3-0]

501. (3) Advanced Marketing.—Price making forces at retail, wholesale and farm market level. Critical analysis of various marketing schemes. Prerequisite: adequate background in Economics. [3-0; 3-0]

525. (6) Master's Thesis.

Agricultural Mechanics

201. (3) General Mechanics.—Internal combustion engines; fuels, lubricants, general maintenance, operation, repair. Text-book: Elliott and Consoliver, *The Gasoline Automobile*. Mr. Young. [2-3; 2-3]

301. (3) Food Mechanics.—Fundamental mechanics, unit processes and operations in the food industry. Drafting. Prerequisites: Physics 100 or 101, Mathematics 202. Mr. Leroux. [2-2; 2-2]

302. (3) Farm Power.—Combustion engines, fuels and lubricants, performance analyses, integration of power units. Prerequisites: Agricultural Mechanics 201, Physics 200, Mathematics 202. Mr. Coulthard. [2-3; 2-3]

305. (3) Drainage and Irrigation.—Soil and water relationships, installations and materials for irrigation drainage systems, methods, and efficient use of water. Text-books: Ayres and Scoates, *Land Drainage and Reclamation*; Israelsen, *Irrigation Principles and Practices*. Prerequisites: Agronomy 313, 314. Mr. Coulthard. [2-3; 2-3]

401. (3) Food Mechanics.—Plant layout and operation, production planning, material handling. Prerequisite: Agricultural Mechanics 301. Mr. Leroux. (Alternate years, not given 1950-51). [2-3; 2-3]

404. (3) Farm Buildings.—Farm building requirements, materials, methods of construction. Farmstead planning. Drafting. Text-book: Scoates, *Farm Buildings*, I and II. Mr. Leroux. [2-2; 2-2]

406. (3) Advanced Machinery.—Special purpose machinery used for root crops, bulbs, truck gardening. Emphasis on operation, maintenance, and repair. Prerequisite: Agricultural Mechanics 201. Mr. Young. [2-3; 2-3]

408. (3) Advanced Mechanics.—Lectures, discussions, and papers. Prerequisites: Agricultural Mechanics 201, 302, 406. Mr. Young. [2-3; 2-3]

410. (1½) Shopwork.—Oxy-acetylene welding and arc welding, heat treating. Mr. Gleave. [0-3; 0-3]

412. (1½) Rural Electrification.—Developments and problems in Canada with particular reference to British Columbia. Mr. Young. [2-3; 0-0]

425. (3) Undergraduate Essay.—A report on a practical problem encountered in summer work.

430. (3) Directed Studies.

501. (3) Food Mechanics.—Care, operation, design of individual machines of food processing industry. Mr. Leroux. (Alternate years, given 1950-51). [2-3; 2-3]

Agronomy

General Agronomy.—(Included in Agriculture 100 in the First Year).

Field Crops

202. (3) Field Crops.—Study of important grain, forage, and root crops. Noxious weed seeds, commercial and seed grades of Canada, commercial grain and hay grades of the United States, identification of principal types and varieties of field crops. Special problems of production, weed control, harvesting, storage; physical phases of marketing. [2-2; 2-2]

303. (1½) Weeds.—Common noxious weeds of the Province. Influence of weeds on crop growth; identification; mode of reproduction; cultural and chemical methods of control. [2-2; 0-0]

304. (1½) Range Management. — Ecology, maintenance, and management of rangeland. Text: Stoddart and Smith, *Range Management*. [2-2; 0-0]

305. (1½) Pasture Management.—Grasses and legumes for pasture and forage, their management and conservation. Text: Ahlgren, *Forage Crops*. [0-0; 2-2]

306. (1½) Identification and Standards. — Grades of farm crops. Emphasis on crop types and their quality as determined by different environments. Open only to students taking the Food Technology Option or with approval of the Head of the Department. [2-2; 0-0]

405. (1½) Field Crops (Advanced).—Studies of the climatic, ecological, biological factors in distribution and world production of field crops. Prerequisite: Agronomy 202. [2-2; 0-0]

406. (1½) Field Crop Technology.—Chemical constituents of field crops as influenced by climate, soil, and variety, applied to processing of farm crops. Prerequisite: Chemistry 200. [0-0; 2-2]

407. (3) Plant Breeding and Seed Production.—Principles of plant breeding, methods of crop improvement. Production of improved seed of cereals, forage crops, roots. Prerequisite: Biology 330. [2-2; 2-2]

422. (3) Crop Production Problems.—Preparation of reports and submission of recommendations based on detailed study of crops, cropping systems, soils, and soil management practices on individual farms. Lectures, seminar periods, and research.

Soils

211. (3) An Introduction to the Study of Soils.—Weathering; mechanical constitution of soil—organic matter, minerals, water and air, soil biology. Soil development and classification. Tillage practices, manuring and relation to environment; moisture relations; soil reaction and liming; organic manures; commercial fertilizers. [2-2; 2-2]

312. (3) Soil Bacteriology.—Soil as a natural habitat for micro-organisms; factors determining distribution and activity of bacterial species. Prerequisite: Bacteriology 201. Text: Waksman, *Principles of Soil Microbiology*, latest edition. This course open for credit in Arts. [1-4; 1-4]

313. (1½) Physical Properties of Soils. — Mechanical makeup of soil, nature and properties of clay minerals, plasticity, soil structure, soil moisture-energy relationships, soil aeration and temperature in relation to soil use, management, tillage, irrigation and drainage. Text: Bauer, *Soil Physics*. Prerequisites: Agronomy 211 and Physics 100 or 101. [2-2; 0-0]

314. (1½) Soil Conservation.—Utilization of soil and water resources. Physical and chemical properties of soils, land use, tillage and cropping practices in conservation of soil and water resources. Prerequisite: Agronomy 313 or approval of instructor. [0-0; 2-2]

415. (3) Chemical Properties of Soil.—Soil minerals and organic matter; cation exchange; acid, alkaline, and saline soils; factors affecting the supply, movement, and fixation of chemical elements in soil. Prerequisites: Agronomy 211 and Chemistry 200. [2-3; 2-3]

416. (1½) Soil Genesis, Morphology, and Classification.—Factors of soil formation, description, classification, and use of soils, soil maps, and reports. [0-0; 2-2]

417. (1½) Soil Surveying.—Two to three months of field work under direction of an accredited soil surveyor. Prerequisite: Second Class standing in Agronomy 416.

Field Crops and Soils

421. (1½) Biometry.—Biological variation; graphs; machine calculation of central tendency and dispersion; elementary analysis of variance; simple linear correlation and regression; "chi" square tests. Text-book: Treloar, *Elements of Statistical Reasoning*. [2-4; 0-0]

423. (1) Undergraduate Seminar.

425. (3) Undergraduate Essay.

430. (3) Directed Studies.—Systematic work on approved problem.

Courses for Graduate Students

500. (3-5) Applied Plant Genetics.—The genetics of crop plants. Lectures, seminars, and research. [2-4; 2-4]

510. (3-5) Field Crops.—Special phases of field crop production, management, improvement, emphasis on application of recent research findings. Lectures, seminar periods, and research.

512. (3-5) Advanced Soil Bacteriology.—Directed studies on an approved problem.

515. (3-5) Advanced Physical and Chemical Properties of Soils.—Directed studies on an approved problem.

518. (2) Graduate Seminar.

Animal Husbandry

215. (3) Fundamentals of Animal Husbandry. — Judging of livestock origin, development, characteristics, adaptations of breeds of livestock; principles of breeding, selection, feeding, management, marketing; disease problems. Reference: MacEwen, *Breeds of Farm Livestock in Canada*. [2-2; 2-2]

320. (3) Comparative Anatomy of Domestic Animals. — Comparative anatomy of domestic animals, gross and microscopic anatomy, including embryological, foetal, and post-natal development. [2-3; 2-3]

322. (3) Animal Nutrition. — A general survey of the field of animal nutrition. Text: Maynard, *Animal Nutrition*, 1947. [2-3; 2-3]

324. (1½) Judging Dairy Cattle.—Open only to Third Year students in Animal Husbandry. [0-0; 0-4]

406. (1½) Identification and Standards.—A study of the grades and definitions for animals and animal products. Open only to students taking the Food Technology Option, or with the approval of the Head of the Department. Text: *Publications of the American Meat Institute*. [0-0; 2-3]

418. (3) Livestock Marketing and Management.—Requirements of livestock markets, marketing livestock products; breeding stock; management of range, ranch, and farm for production of livestock. [2-3; 2-3]

419. (3) Seminar.—Research and experimental problems; preparation of reports and bulletins; current problems of animal industry. [2-2; 2-2]

421. (3) Physiology of Domestic Animals. — Functions of the body, organs and systems, together with endocrinology, growth, reproduction, reactions of body to invasions by parasites and pathogens. Text-book: Dukes, *Physiology of Domestic Animals*. [2-3; 2-3]

422. (3) **Animal Feeding.**—The economic and nutritional problems involved in feeding all classes of livestock. Text: Morrison, *Feeds and Feeding*, 21st edition. [2-3; 2-3]
423. (3) **Animal Breeding.** — Variation and inheritance; selection and mating systems; herd, and pedigree studies; hereditary defects. [3-0; 3-0]
425. (3) **Undergraduate Essay.**
430. (3) **Directed Studies.**
500. (3-5) Research in production, management, marketing of animals and animal products.
501. (3-5) Research in problems associated with physiological disturbances in animals.
502. (3-5) **Research in Animal Nutrition.** — Directed research in nutritional problems.
503. (3-5) **Research in Animal Breeding.**—Directed research in problems associated with improving hereditary worth of farm animals.
504. (1) **Graduate Seminar.**
522. (3) **Advanced Animal Nutrition.**—Special phases of animal nutrition. Nutritional deficiency state, bioenergetics, and growth. Text: Brody, *Bioenergetics, and Growth*, 1945. Prerequisite: Animal Husbandry 322. [2-3; 2-3]
530. (3-5) **Directed Studies.**

Bacteriology and Preventive Medicine

201. (3) **Introductory Bacteriology.**—As in Arts.
301. (3) **Immunology.**—As in Arts.

Biology

100. (3) **Introductory Biology.**—As in Arts.
330. (3) **Principles of Genetics.**—As in Arts.
400. (3) **General Physiology.**—As in Arts.
430. (3) **Seminar in Genetics.**—As in Arts.
431. (3) **Problems in Genetics.**—As in Arts.

Botany

200. (3) **Introductory Botany.**—As in Arts.
304. (3) **Introduction to Systematics of Vascular Plants.**—As in Arts.
310. (2) **Morphology.**—As in Arts.
315. (3) **Mycology.**—As in Arts.
316. (2) **Plant Pathology (Elementary).**—As in Arts.
330. (2) **Plant Physiology.**—As in Arts.
340. (2) **Histology.**—As in Arts.
516. (3) **Plant Pathology (Advanced).**—As in Arts.

Chemistry

100. (3) **General Chemistry.**—As in Arts.
101. (3) **General Chemistry.**—As in Arts.
200. (3) **Qualitative and Quantitative Analysis.**—As in Arts.
300. (3) **Organic Chemistry.**—As in Arts.

304. (3) **Physical Chemistry**.—As in Arts.
 310. (3) **Advanced Quantitative and Qualitative Analysis**.—As in Arts.
 409. (1½) **Qualitative Organic Analysis**.—As in Arts.
 410. (1½) **Organic Reactions**.—As in Arts.
 425. (3) **Outlines of Biochemistry**.—As in Arts.

Commerce

251. (3) **Fundamentals of Accounting**.—As in Arts.
 361. (3) **Marketing**.—As in Arts.
 352. (3) **Intermediate Accounting**.—As in Arts.
 471. (3) **Business Finance**.—As in Arts.
 481. (3) **Industrial Management**.—As in Arts.
 491. (3) **Commercial Law**.—As in Arts.
 559. (2) **Industrial Accounting**.—As in Arts.
 589. (1) **Industrial Problems**.—As in Arts.

Dairying

General Dairying.—(Included in Agriculture 100 in the First Year).

203. (3) **Fundamentals of Dairying**. — Principles underlying hygienic aspects of milk production; processing, testing, grading of market milk and related products. [2-2; 2-2]

301. (3) **Dairy Technology**.—Principles and practices in manufacture of butter, cheese, ice cream, concentrated milk products. Prerequisites: Dairying 203; also Dairying 304 and 305, which may be taken concurrently. [1-6; 1-6]

304. (1½) **Dairy Bacteriology**.—Bacterial content of milk; normal and abnormal fermentations of milk and a study of certain organisms responsible therefor. Prerequisite: Bacteriology 201. This course is open for credit in Arts. [2-2; 0-0]

305. (1½) **Dairy Bacteriology**.—Physical and chemical properties of milk and their influence on growth of bacteria in milk and milk products; handling and management of milk for city consumption; grading of milk and milk products on bacterial standards. Prerequisite: Bacteriology 201. This course is open for credit in Arts. [0-0; 2-2]

406. (1½) **Identification and Standards**.—Laws and regulations of production, manufacturing, sale of dairy products; scoring and grading of dairy products; standard methods of bacteriological and chemical analysis. Open only to students taking the Food Technology Option, or with the approval of the Head of the Department. [0-0; 2-2]

For Senior or Graduate Students only

407. (3) **Advanced Dairy Bacteriology**.—Ripening of hard-pressed cheese and a systematic study of the lactic acid bacteria. Prerequisites: Bacteriology 201; Dairying 304 and 305. This course is open for credit in Arts. [1-6; 1-6]

413. (1½) **Dairy Mycology**.—Molds and yeasts in dairy products. Prerequisites: Dairying 304 and 305. [0-0; 1-5]

425. (3) **Undergraduate Essay**. — On a prescribed laboratory study. Fourth Year.

430. (3) **Undergraduate Seminar**.—Presentation, discussion, criticism of scientific and technical papers pertaining to dairy industry.

Primarily for Graduate Students**500. (3) Graduate Seminar.**

501. (3) Lactic Acid Bacteria.—Metabolic processes. Prerequisites: Dairying 304 and 305; Chemistry 425, which may be taken concurrently. (Given in 1951-52 and alternate years). [3-0; 3-0]

502. (3) Laboratory Methods and Procedures.—Quantitative analytical laboratory methods in fermentative and oxidative metabolism of microorganisms associated with dairy products. Prerequisites: Chemistry 425, which may be taken concurrently. (Given in 1950-51 and alternate years). [0-6; 0-6]

503. (3-5) Directed Studies.—On approved problems.

Economics

200. (3) Principles of Economics.—As in Arts.

300. (3) Money and Banking.—As in Arts.

301. (3) Economic Theory.—As in Arts.

310. (3) International Trade.—As in Arts.

335. (3) Statistics 1.—As in Arts.

435. (3) Statistics 2.—As in Arts.

English

100, 101. (3) Literature and Composition.—As in Arts.

200. (3) Literature.—As in Arts.

205. (3) Composition and Literature.—Designed for students in Agriculture. Training in advanced composition, in research, and in the preparation of term papers and reports. Selected readings from various types of modern writing. Reports and essays are required. Texts: to be announced.

[3-0; 3-0]

French

101. (3) As in Arts.

Geology

200. (3) General Geology.—As in Arts.

German

90. (3) Beginners' Course.—As in Arts.

100. (3) Intermediate Reading and Composition.—As in Arts.

101. (3) Scientific German.—As in Arts.

History

101. (3) Main Currents in Twentieth-Century History.—As in Arts.

Horticulture

General Horticulture.—(Included in Agriculture 100 in the First Year).

213. (3) Practical Horticulture.—Principles of tree-fruit and small-fruit growing; plant propagation; nursery and greenhouse management; identification and control of diseases and pests of horticultural plants; orchard, garden, laboratory, nursery, greenhouse practice in horticultural operations; costs of production. [2-2; 2-2]

314. (1½) Commercial Horticulture.—Handling and distribution of fruits and vegetables, harvesting, grading, packing, shipping, storing, marketing; packing and storage houses. [2-2; 0-0]

315. (1½) Horticultural Products and By-Products.—Processing of fruits and vegetables, canning, dehydrating, freezing; making of jams, jellies, juices, pickles, vinegar, etc. [0-0; 2-2]

416. (2) Landscape Design.—Historical and critical study of landscape plans of landscape design. Landscape plans. Culture and identification of plant material. Commercial floriculture. Greenhouse and nursery practice. [2-2; 0-0]

Note: For students who have had Horticulture 316 as described, further work may be given in the second term for an additional 1½ units of credit. [0-0; 2-2]

317. (1½) Vegetable Gardening.—Vegetable growing; sites, soils; planting, fertilizing, irrigating, cultivating; vegetable varieties; vegetable forcing. [0-0; 2-2]

406. (1½) Identification and Standards.—Identification of horticultural crops and products; government grades for fruits and vegetables, fresh and processed. [2-2; 0-0]

416. (2) Landscape Design.—Historical and critical study of landscape architecture. Principles of design. Plant material. Garden construction. Visits to landscaped sites. Problems in conjunction with Architecture 350. Prerequisite: Horticulture 316. (This course is open for credit in Architecture). [1-2; 1-2]

418. (1½) Systematic Horticulture.—The description, identification, classification, displaying, and judging of horticultural crops—tree fruits, small fruits, and vegetables. [1-4; 0-0]

419. (1½) Special Horticultural Crops.—Origin of horticultural plants; plant exploration and introduction; special horticultural crops, such as citrus fruits, bananas, pineapples, dates, avocados, various nut crops; other horticultural crops of world economic importance not commonly grown in Canada. [0-0; 3-0]

420. (3) Methods of Research in Horticulture.—Breeding of horticultural crops and variety adaptations; review of horticultural and related investigational work in Canadian and other institutions; outlining investigations and preparing reports. [3-0; 3-0]

425. (3) Undergraduate Essay.—A satisfactory report on some approved subject upon which the student has done investigational work.

430. (3) Research in Horticulture.—Directed study on some problem in the applied phases of horticulture.

500. (3-5) Research in Horticulture. — Directed study on some special problem in systematic horticulture, plant propagation, genetics as related to horticultural crops, etc.

510. (1½) 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). [0-6; 0-0]

Plant Nutrition

340. (3) Food Values of Horticultural Crops.—Effect on food values of such factors as variety, locality, climate, photoperiod, soil, fertilizer, cultural practice, storage and processing; methods of food assay—chemical and biological—for organic and mineral constituents, vitamins, enzymes. Text-book: Peterson, *Elements of Food Biochemistry*. (Offered in 1951-52 and alternate years). [2-2; 2-2]

441. (2) Plant Nutrition (a).—Organic constituents of plants and physiological changes occurring during plant growth. Text-book: Steele, *Introduction to Plant Biochemistry*. Reference: Haas and Hill, *The Chemistry of Plant Products*. (This course may be counted for credit in botany). [2-4; 0-0]

Note: Four hours laboratory work a week (1 unit) to be arranged for the second term with the consent of the instructor only. [0-0; 0-4]

442. (2) Plant Nutrition (b). — Diagnosing plant deficiency diseases; growth of plants in artificial media; micronutrient chemical elements and plant growth; soil-plant-atmosphere relationships; absorption and accumulation of inorganic solutes; biochemical problems associated with salt absorption; photoperiodism; photosynthesis; respiration; plant hormones; enzyme action and growth rates. Text-book: Hoagland, *Inorganic Plant Nutrition*. Reference: Miller, *Plant Physiology*. [0-0; 2-4]

443. (2) Seminar in Plant Nutrition.—Papers on modern views of plant nutrition and applied plant physiology. [2-0; 2-0]

545. (3-5) Research in Plant Nutrition.—Directed study on some problem in plant nutrition or applied plant physiology.

547. (4) Advanced Plant Nutrition. — Physiology and chemical constituents of plants and plant products; food values of horticultural crops and factors which affect these; chemical and biological food assays. Open to graduates or to others with permission of the instructors. (Offered in 1950-51 and alternate years). [2-4; 2-4]

Mathematics

101. (3) **Algebra, Geometry and Trigonometry.**—As in Arts.

200. (3) **Algebra and Geometry.**—As in Arts.

201. (3) **The Mathematical Theory of Investments.**—As in Arts.

202. (3) **Calculus.**—As in Arts.

Psychology

100. (3) **Introductory Psychology.**—As in Arts.

Physics

100. (3) **Elementary Physics.**—As in Arts.

101. (3) **Elementary Physics.**—As in Arts.

200. (3) **Mechanics, Molecular Physics, and Heat.**—As in Arts.

Poultry Husbandry

General Poultry Husbandry.—(Included in Agriculture 100 in the First Year).

200. (1½) **Fundamentals of Poultry Husbandry.**—Feeds, feeding, management, poultry housing, sanitation, hygiene, diseases. [2-2; 0-0]

201. (1½) **Fundamentals of Poultry Husbandry.** — Breeds, breeding, judging, selection, culling, incubation, brooding, egg grading, marketing, general management. [0-0; 2-2]

300. (1½) **Markets and Marketing.** — Poultry products in B.C., the market, inter-provincial trade, export trade, egg grading, Dominion and Provincial regulations, care and preparation of eggs and poultry for market, killing, dressing, grading, packing, cooperative marketing, prices. [2-2; 0-0]

301. (1½) Advanced Marketing. — Organization in marketing; history and development of cooperative marketing of eggs and poultry; domestic and export trade. [0-0; 2-2]

302. (1½) Turkey Production.—Principles and practice of breeding and management, modern methods of marketing. (Given in 1950-51 and alternate years). [0-0; 2-2]

306. (1½) Identification and Standards.—Standards used in grading eggs and poultry meat; laws and regulations applying to marketing; processing; trade practices. Open only to students taking the Food Technology Option, or with the approval of the Head of the Department. [0-0; 2-2]

310. (1½) Breeding and Judging. — Breeds of poultry, their history, origin, economic qualities; judging and selection for egg and meat production. [2-2; 0-0]

311. (1½) Advanced Breeding.—Theories of inheritance; study of progeny tests. [0-0; 2-2]

400. (1½) Poultry Farm Management. — Types of poultry farms; farm lay-outs; investment of capital in land, buildings, stock, equipment; efficiency in labour, housing, production, personnel; farm income, labour income. (Given in 1950-51 and alternate years). [2-2; 0-0]

401. (1½) Incubation and Hatchery Management.—Principles and practices of incubation. Different types of incubators and brooders. Inspection of hatcheries and survey of hatchery business methods and costs. (Given in 1950-51 and alternate years). [0-0; 2-2]

405. (1½) Seminar.—Poultry literature; research and experimental problems; preparation of reports and bulletins; marketing problems; advertising poultry products; poultry services and organizations. [1-2; 0-0]

410. (1½) Poultry Nutrition.—Principles and recent advances in nutrition; physiology of digestion, requirements of the body for maintenance and production. [2-2; 0-0]

411. (1½) Feeding Management.—Study of feed-stuffs; compounding of rations for poultry; feeding practices and costs. Study of standard methods of routine management. Survey of recent literature on poultry feeding. [0-0; 2-2]

415. (1½) Diseases and Hygiene.—Anatomy and physiology of the fowl; poultry sanitation and hygiene; common ailments of poultry and their treatment. Study of micro-organisms pathogenic for poultry. Practice in serological tests. Microbial content of eggs. Autopsies. Inspection of farms. [0-0; 2-2]

420. (1½) Physiology of Sex, Reproduction, and Endocrinology — Fundamentals of egg production and reproduction in the domestic fowl. Recent advances in endocrinology affecting poultry. [0-0; 2-2]

425. (3) Undergraduate Essay.

430. (3) Research.—Directed.

500. (1½) Seminar in Poultry Nutrition.—Current problems and literature in poultry nutrition. Biological tests with chicks.

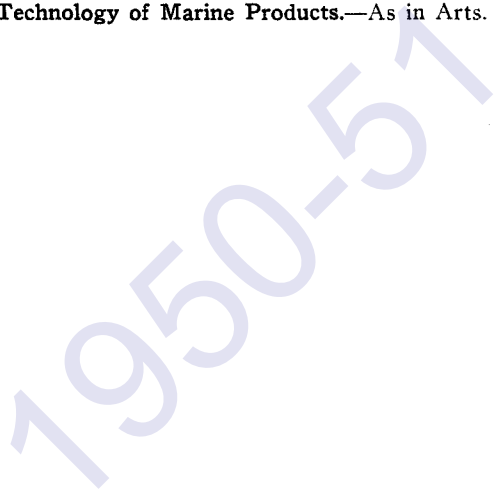
540. (3-5) Research.—Directed. (Open to graduates only).

Russian

100. (3) Basic Russian.—As in Arts.

200. (3) Russian.—As in Arts.

Zoology

200. (3) **General Zoology.**—As in Arts.
201. (3) **Agricultural Entomology.**—Structure, recognition and life histories of insects and their control. Text-book: Metcalf and Flint, *Destructive and Useful Insects*. [2-3; 2-3]
300. (3) **Comparative Anatomy of Vertebrates.**—As in Arts.
302. (3) **Introduction to Entomology.**—As in Arts.
303. (3) **Histology.**—As in Arts.
304. (3) **Vertebrate Embryology.**—As in Arts.
305. (2) **Economic Entomology.**—As in Arts.
403. (2) **Fisheries Economics and Management.**—As in Arts.
405. (1½) **Fisheries Technology.**—As in Arts.
411. (1½) **Technology of Marine Products.**—As in Arts.
- 

1950-51

THE
FACULTY
OF
LAW

1950-1951

1950-51

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 38-41 of this Calendar.

Candidates must present evidence of having:

- (a) graduated from an approved university; or
- (b) successfully completed the Arts and Science requirements in the combined B.A., LL.B. course and obtained in the Third Year of Arts and Science an average of not less than 60%; or
- (c) successfully completed the First and Second Years in the University of British Columbia and obtained in the Second Year thereof an average standing of Second Class (65%) or higher; or
- (d) successfully completed the equivalent of (b) or (c) at an approved university.

Advanced Standing

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 33-44 of this 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 25th.

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. See "Double Degrees", section III (page 306).

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 failed at the regular examinations in not more than two subjects but has made an average of at least 50 per cent. on the work of the year 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 1st, 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.

For regulations regarding re-reading of papers see Faculty of Arts and Science "Re-Readings", page 126.

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, Vancouver, 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, which form part of the qualifications for admission to the Bar.

Prizes, Bursaries, Scholarships

A number of University prizes, bursaries, and scholarships are open to students in the Faculty of Law. See pages 45-91 of this Calendar.

Moot Court

Students in the Faculty are required to argue at least one case before the Moot Court in their First Year and one in their Second Year. Students who do not meet the requirements with respect to the Moot Court 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.

COURSES OF INSTRUCTION

FIRST YEAR

Contracts

101. References: 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*. Mr. Read.

Criminal Law

104. References: *U.B.C. Cases on Criminal Law*; Criminal Code; Tremear; Crankshaw; Kenny, *Outlines of Criminal Law*. Mr. Remnant.

History of English Law

107. References: Potter, *Historical Introduction to English Law*; Maitland and Montague, *Sketch of English Legal History*; Windeyer, *Legal History*; MacRae, *History of English Law*; Holdsworth, *History of English Law*; Pollock and Maitland, *History of English Law*. Mr. Curtis.

Procedure I

110. References: Supreme Court Act; County Court Act. Mr. Kennedy.

Property I

113. References: Read and Macdonald, *Cases on Personal Chattels*; Williams, *Personal Property*; Goodeve, *Personal Property*; Brown, *Personal Property*; Cheshire, *Modern Real Property*; Megarry, *Law of Real Property*. Mr. McAllister.

Torts

116. References: Wright, *Cases on the Law of Torts*; Prosser, *Torts*; Salmond, *The Law of Torts*; Pollock, *The Law of Torts*; Winfield, *Text-book on the Law of Tort*. Mr. MacIntyre.

SECOND YEAR

Agency and Partnership

201. References: *U.B.C. Cases on Agency*; Bowstead, *Agency*; Pollock, *Law of Partnership*. Mr. Carrothers.

Bills and Notes

204. References: *U.B.C. Cases on the Law of Bills and Notes*; Russell, *Bills of Exchange*; Falconbridge, *Banking and Bills of Exchange*; MacLaren, *Bills, Notes, and Cheques*; Britton, *Bills and Notes*. Mr. Westlake.

Company Law

207. References: *U.B.C. Cases on Company Law*; Palmer, *Company Law*; Stibel, *Company Law and Precedents*; MacRae, *Material on Company Law*; Companies Act of British Columbia. Mr. Carrothers.

Equity

210. References: Smith and Read, *Cases on Equity*; Ashburner, *Equity*; Hanbury, *Modern Equity*; Maitland, *Equity*. Mr. Sheppard.

Insurance

213. References: *U.B.C. Cases on Insurance Law*; Insurance Act of British Columbia. Mr. Curtis, Mr. Brown.

Labour Law

216. References: To be announced. Mr. McAllister.

Property II

219. References: *U.B.C. Cases on Property*; Williams, *Canadian Law of Landlord and Tenant*; Hill and Redman, *Law of Landlord and Tenant*. Mr. MacIntyre.

Procedure II

222. References: Odgers, *Pleading and Practice*; Supreme Court Rules. Mr. Justice Wilson.

Public International Law

225. References: Oppenheim, *International Law*; Brierly, *The Law of Nations*; Starke, *Law of Nations*; MacKenzie and Laing, *Canada and the Law of Nations*; Nussbaum, *Concise History of the Law of Nations*. Mr. MacKenzie, Mr. Curtis.

THIRD YEAR

Administrative Law

301. References: To be announced. Mr. McAllister.

Conflict of Laws

304. References: *U.B.C. Cases on Conflicts*; Cheshire, Falconbridge, Cook, Dicey, Goodrich, Graveson. Mr. Kennedy.

Constitutional Law

307. References: MacRae, *Materials on Constitutional Law*; O'Connor, *Report on B.N.A. Act*. Mr. Westlake.

Domestic Relations

310. References: *U.B.C. Cases on Domestic Relations*; Eversley, *Domestic Relations*. Mr. Read.

Evidence

313. References: Phipson, *Law of Evidence*; Cockle, *Leading Cases on Evidence*; Wigmore, *Evidence*. Mr. Justice Coady.

Mortgages and Suretyship

316. References: *U.B.C. Cases on Mortgages*; Falconbridge, *Mortgages*; Hanbury and Waldock, *Law of Mortgages*; Turner, *Equity of Redemption*. Mr. MacIntyre.

Procedure III

319. References: Court of Appeal Act and Rules; Supreme Court Act (Dom.) and Rules.

Shipping

322. References: Mayers, *Admiralty Law and Practice*; Roscoe, *Admiralty Practice*; Canada Shipping Act; Admiralty Act; Water Carriage of Goods Act. Mr. Bird.

Taxation

325. References: Willis, *Lectures on Taxation*; Magill, *Taxable Income*; Stikeman, *Lectures on Taxation*; Ratcliffe and McGrath, *Income Tax Law*; Hannan, *Principles of Income Taxation*; LaBrie and Westlake, *Deductions Under the Income War Tax Act*; Plaxton, *Canadian Income Tax Law*. Mr. Curtis, Mr. Ladner.

Trusts

328. References: Keeton, *Trusts*; Hanbury, *Modern Equity*; Scott, *Trusts*; Trustee Act. Mr. Kennedy.

Wills

331. References: *U.B.C. Cases on Wills and Trusts*; Bailey, *Wills*; Widdifield, *Executors' Accounts*; Administration Act; Wills Act. Mr. Kennedy.

THE
FACULTY
OF
PHARMACY

1950-1951

1950-51

FACULTY OF PHARMACY

General

The course in Pharmacy covers a period of four years following First Year Arts and Science, including twelve months of practical training. The curriculum is based on the standard curriculum adopted by the Canadian Conference of Pharmaceutical Faculties. The degree granted is that of Bachelor of Science in Pharmacy (B.S.P.).

Admission

The general requirements for admission to the University are given on pages 38-41.

For admission to Pharmacy it is required that the student shall have completed the First Year in Arts and Science with credit for the courses shown below and an average grade of at least 60%, or that he shall have fulfilled these requirements by Senior Matriculation or equivalent work taken in an approved university.

The required subjects are Chemistry 100 or 101; English 100 and 101; Mathematics 101; Physics 100 or 101 or Biology 100; and one optional subject to be chosen from Economics 100 or 140, French 101, Geography 101, German 90 or 100 or 101, History 101 or 202, Latin 90 or 101, Music 105, Philosophy 100 or 205, Polish 110, Psychology 100, Russian 100, Spanish 90 or 101.

Registration

Candidates are enrolled in the course on being accepted as Registered Students by the Pharmaceutical Association with the approval of the Faculty. Applications should be forwarded to the Registrar, Pharmaceutical Association of British Columbia, 310 Dominion Bank Building, 207 Hastings Street West, Vancouver, before September 15th.

Physical Education

Two activity courses in Physical Education are required of all students in Second Year of the Faculty of Pharmacy except ex-service personnel and members of military units operating on the campus. For details of requirements see pages 115-117.

Examinations and Advancement

1. Examinations in all subjects, obligatory for all students, are held in April. Examinations in December are obligatory in all 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 in writing 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 University Health Service.
2. The passing mark is 50 per cent. in each subject, and successful candidates taking a complete year's work of eighteen units 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.

3. In any course which involves laboratory work, a student must complete the laboratory assignments with a satisfactory record before being admitted to the written examination of the course. A student may be required by the Faculty to discontinue such a course during any term if he fails to maintain a satisfactory standing in laboratory work, or if he is absent from an appreciable number of laboratory periods owing to illness or other causes.
4. A student who has failed at the regular final examinations in not more than 6 units, but has made an average of at least 50 per cent. on the work of the year, 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.
For regulations regarding re-reading of examination papers see Faculty of Arts and Science (page 126).
5. Supplemental examinations will be held in August. Applications for supplemental examinations must be in the hands of the Registrar on or before August 1st, and must be accompanied by the required fee.
6. A student must pass in all subjects of each year before being admitted to the succeeding year. Any student who has taken scheduled courses in another faculty or university, or any student who is required to repeat his year, may be exempted from attending lectures and laboratories and from passing examinations in subjects in which he has made at least 65%. If the general standing of such a student is sufficiently high he may be permitted to take certain courses of the succeeding year in addition to the courses necessary to complete the year in which he is registered, but in no case shall the total exceed 18 units.
7. Any student whose academic record, as determined by the tests and examinations of the first term of the 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.
8. Term essays and examination papers may be refused a passing mark if they are noticeably deficient in English.
9. A student's standing at graduation will be determined by averaging the grades obtained in the required work of the Third and Fourth years.

Prizes, Bursaries, Scholarships

A number of prizes, bursaries and scholarships are open to students in the Faculty of Pharmacy. See pages 45-91.

Curriculum

First Year

A twelve month period of practical training under the supervision of a qualified pharmacist, supplemented by courses of study in Elementary and General Pharmacy directed by the Faculty. The passing grade in the examinations based on this work is 60%.

Second Year

Biology 100 or Physics 100 or 101, Chemistry 200, English 205 or English 200, Pharmacy 211, 222, 231, 261.

On account of limited laboratory accommodation the number of students admitted to the Second Year is restricted to 50, selected as follows from

candidates who have met all requirements of the First Year and practical training, and who have passed the Entrance Examination:

(a) Veterans, and applicants with 18 months or more of practical experience as registered students, will be admitted on a preferred basis.

(b) Applicants with from 12 to 18 months practical experience as registered students other than veterans will be listed in order of merit, as determined by an average of the First Year average mark and the Entrance Examination mark, and the top candidates will be admitted to the extent that the maximum of 50 students for the year will permit.

Third Year

Bacteriology 201, Biology 400, Chemistry 300, Commerce 359, Commerce 369, Pharmacy 312, 352, 361.

Fourth Year

Chemistry 425, Pharmacy 413, 442, 452; six units of optional subjects to be selected with the approval of the Head of the Department and the Dean from the following list: Bacteriology 301, Botany 200, Botany 341, Chemistry 304, 410, Commerce 499, Economics 200, English 200, or other courses in English for which necessary prerequisites have been taken, French 202, Geology 200, German 90 or 101, History 202, Mathematics 200 or 201 or 202, Pharmacy 414, 415, 416, 423, 443, 455, 456, 472, 473, 482, Physics 220, Psychology 100, Psychology 300, Russian 100, Sociology 200, Spanish 90 or 101, Zoology 200.

COURSES OF INSTRUCTION

211. (3) **General Principles and Processes of Pharmacy.**—The operations and apparatus used in the manufacture, testing and dispensing of medicinal products, with special reference to the general principles involved. Text-books: Burlage, Burt, Lee and Rising, *Fundamental Principles and Processes of Pharmacy*. [2-4; 2-4]

222. (1) **Metrology and Pharmaceutical Calculations.** — Weights and measures; calculations involved in pharmaceutical procedures. [1-0; 1-0]

231. (3) **Elementary Pharmacognosy and Materia Medica.** — Important official and non-official drugs of plant and animal origin; introduction to chemical drugs. [2-2; 2-2]

261. (2) **Pharmaceutical History, Literature and Latin.**—The development of pharmacy and pharmaceutical knowledge from ancient times to the present day; various types of pharmaceutical literature; form and language of prescriptions. Text-book: Kremers and Urdang, *Pharmaceutical History*. [2-0; 2-0]

312. (3) **Pharmaceutical Preparations.** — Various types of official, non-official and commercial pharmaceutical preparations with detailed study of the more important representatives of each type. Text-book: *Canadian Formulary*, 1949. [2-3; 2-3]

352. (3) **Inorganic Pharmaceutical Chemistry.**—The principles of inorganic chemistry as applied to pharmaceutical procedures; medicinally important inorganic chemicals, including radioactive materials, manufacture, assay and testing of chemical drugs and preparations. [2-3; 2-3]

361. (1) **Pharmaceutical Law and Ethics.**—Provincial and Dominion legislation affecting the practice of pharmacy and the sale of drugs and poisons; ethical principles and responsibilities involved. [1-0; 1-0]

413. (3) Dispensing and Prescriptions.—Types of extemporaneous preparations; reading, compounding and dispensing of prescriptions. Text-book: Husa, *Pharmaceutical Dispensing*. [2-4; 2-4]

414. (3) Advanced Pharmaceutics.—More difficult types of pharmaceutical procedures and preparations; practical assignments involving review of current literature; independent investigation of official and commercial drug products. [1-4; 1-4]

415. (1) Advanced Dispensing Practice. — Unusual and more difficult types of standard and extemporaneous pharmaceutical preparations; individual assignments involving library and laboratory work. [0-0; 1-3]

416. (3) Manufacturing Pharmacy.—The apparatus, methods and problems of large scale production of pharmaceutical products. Registration limited. [1-4; 1-4]

423. (3) Cosmetic Preparations. — Physical, chemical and physiological properties of various types of cosmetics; packaging and merchandising; preparation of typical cosmetic formulas. [2-3; 2-3]

442. (3) Pharmacology and Biopharmacy.—Modes of action of drugs on the living body with special reference to therapeutic uses and toxicity; biological medicinal products and bioassay methods. Text-book: Davison, *Synopsis of Materia Medica, Toxicology and Pharmacology*. [3-0; 3-0]

443. (2) New Remedies.—Drugs in common diseases; newer therapeutic agents; biological investigations and evaluation of drugs. [2-0; 2-0]

452. (3) Organic Pharmaceutical Chemistry.—The chemistry of natural and synthetic organic medicinal compounds and their physico-chemical relationships; synthesis of representative organic drugs; testing and assay of alkaloids, fixed and volatile oils, etc. [3-3; 3-3]

455. (3) Drug Testing and Assaying.—Analytical techniques applied to pharmaceutical preparations including photometric, fluorimetric, chromatographic and electrotitrimetric; assay of official and non-official preparations involving special techniques. Registration limited. [1-6; 1-6]

456. (3) Advanced Pharmaceutical Chemistry.—Recent advances in the chemistry of organic medicinal products; individual problems related to synthesis and the isolation of active principles from crude drugs. Registration limited. [1-4; 1-4]

472. (1) Pesticides.—Physiological action and chemical properties of insecticides, rodenticides, weedicides, etc. [2-0; 0-0]

473. (1) Veterinary Pharmacology.—Drugs used in common animal diseases, veterinary biologicals, etc. [0-0; 2-0]

482. (1) Photographic Materials.—Photographic principles and practices; characteristics of photographic equipment. [2-0; 0-0]

Other Departments

For descriptions of courses offered by other departments see under Arts and Science.

THE
FACULTY
OF
MEDICINE

1950-1951

1950-51

FACULTY OF MEDICINE

The instruction of students is carried on by a Faculty composed of full-time and part-time teachers. The Faculty of Medicine will offer instruction in the following subjects and their various branches: Anatomy, Biochemistry, Medicine, Microbiology, Obstetrics and Gynecology, Pathology, Pediatrics, Physiology, Public Health and Preventive Medicine, and Surgery.

General

The course will extend through four academic sessions and will lead to conferring of the degree of Doctor of Medicine (M.D.). It is designed to provide its graduates with the basic knowledge and technical skill they require for the modern general practice of medicine.

The First Year of the course and the first term of the Second Year—which include instruction in the fundamental or pre-clinical medical sciences—will be given on the campus of the University of British Columbia. At the beginning of the second term of the Second Year, instruction of students will be transferred to the premises of the Vancouver General Hospital. With the beginning of the Third Year of the medical course, the facilities of other private and public hospitals of the Vancouver area will be added to the clinical teaching facilities being utilized.

The first session in the Faculty of Medicine will commence on Thursday, September 7, 1950.

All years of the medical course are somewhat longer than the academic year. This is by reason of early fall registration and continuation of medical classes until immediately prior to Spring Congregation.

Admission

Admission to the Faculty of Medicine will be based primarily upon ability and pre-medical achievement as demonstrated by scholastic records and aptitude tests, and upon personal qualities evidenced by interviews and letters of recommendation from persons who know the applicant well.

It is required that candidates shall have completed at least three years, beyond University Entrance requirements, at an approved Faculty of Arts and Science. This must represent not less than forty-eight (48) units or ninety-six (96) semester hours of work, including required pre-medical subjects. The minimum acceptable scholastic average is Second Class standing (65 to 80 per cent.), but, in view of the demand for medical education, candidates are unlikely to gain admission with scholastic records below high Second Class.

The class entering the First Year of Medicine will be limited to sixty (60) students.

The applicant must take the Medical College Admission Test before he can be considered for admission. Arrangements to take the test should be made with the pre-medical advisor of the institution at which the student is taking his pre-medical work. Information about this test may be obtained from the Educational Testing Service, P.O. Box 592, Princeton, New Jersey. Candidates are encouraged to take the Medical College Admission Test in the fall of the year preceding that in which admission is anticipated. At the time the test is taken, the student should request that the scores be sent to the Screening Committee, Faculty of Medicine, University of British Columbia, Vancouver, B.C.

Information concerning other aptitude tests which are within the requirement for admission where the applicant has attended the University of British Columbia may be obtained from the Counselling Bureau of the University.

No applicant will be accepted if he has been required to withdraw from another medical school.

A personal interview with the Screening Committee may be requested of any applicant. Ordinarily, residents of other provinces and other countries, if deemed admissible by the Screening Committee, are not required to appear for an interview.

Successful applicants are required to pass a physical examination at the University Health Service in the month of April preceding admission, where the candidate is taking his pre-medical course at the University of British Columbia. Successful applicants from other institutions must pass this examination at the earliest practicable date in their first term of residence. Registration is not considered to be completed until the examination has been taken and passed. Immunization against certain diseases is required.

Applicants having physical handicaps which require periodic medical attention or which interfere with normal activities must submit a medical certificate with their application. In this certificate, the examining physician should describe the extent of the deformity or lesion and estimate its effect upon the applicant's future ability to practise medicine.

See page 40 regarding procedure of application for admission to the Faculty of Medicine.

Pre-Medical Requirements

The requirements listed below apply to students taking their pre-medical work in the Faculty of Arts and Science at the University of British Columbia. Applicants from other universities must submit evidence of having successfully completed equivalent prerequisite courses.

In general, the Faculty of Medicine, in admitting students, will not deviate substantially from the minimum requirements listed. However, it may accept candidates who have minor deficiencies in required subjects. Such action is largely to be reserved for students of outstanding ability.

English: English 100 and 101 (Literature and Composition), English 200 (Literature).

Mathematics: Mathematics 101 (Algebra, Geometry and Trigonometry). Mathematics 202 (Calculus) should be taken if advanced work in Physics, Physical Chemistry, or Biophysics is planned.

Chemistry: Chemistry 100 or 101 (General Chemistry), Chemistry 200 (Quantitative and Qualitative Analysis), Chemistry 300 (Organic Chemistry).

Physics: Physics 100 or 101 (Elementary Physics), Physics 220 (General Physics).

Biology and Zoology: Biology 100 (Introductory Biology), Zoology 200 (General Zoology), and Zoology 304 (Vertebrate Embryology). Biology 330 (Principles of Genetics) is recommended but not required.

It is recommended that elective pre-medical courses be selected in such a way as to conform with the language and other requirements for the degree of B.A. (or B.Sc.) at the institution where the courses are taken. Wherever possible, students should have completed six units of Psychology before entering upon the study of medicine. Where a fourth pre-medical year is taken, students are advised not to anticipate medical school courses

in Physiology, Histology, Bacteriology, or Biochemistry at the expense of fundamental training in the humanities and subjects contributing to a well-rounded education.

Registration

The first class in Medicine at the University of British Columbia will register on September 5 and 6, 1950, in the office of the Dean of the Faculty of Medicine.

No applicant accepted for admission in the First Year of the medical course will be allowed to register after the first day of instruction in the term, nor will he be admitted to any class after its first meeting, except at the discretion of the Faculty of Medicine.

Students entering the Second and later years will receive, by mail, an application form for registration in the appropriate year. This form must be completed and returned to the office of the Dean of the Faculty of Medicine before August 1st. On the opening day of the new session, each student must personally obtain registration cards at the office of the Dean.

Promptly upon beginning the First Year of the medical course each student must register with the Registrar of the College of Physicians and Surgeons of British Columbia, Vancouver, B.C. This entails the payment of a fee of \$1.00. If a student plans to practise medicine outside of the Province of British Columbia, the regulations of the appropriate licensing body, including the requirements of other Colleges of Physicians and Surgeons, should be consulted.

Fees

See pages 41-43 for regulations governing payment of fees at the office of the Bursar on the day of registration.

Microscopes, Books and Students' Supplies

Each student is expected to provide himself with a microscope of approved design at the beginning of the First Year. It should be of substantial construction and provided with the following accessories: Objectives—16 mm., 4 mm. and 1.8 mm. oil immersion; oculars 5 X and 10 X; triple nose-piece; and substage condenser with an iris diaphragm. The cost of a microscope will be between \$175 and \$300. While such an instrument should be owned by the student for his exclusive use throughout his medical course, and for his subsequent professional use, a limited number of rental instruments will be available upon proof of need.

Information regarding the purchase of textbooks and instruments will be given at the first meeting of each course. Not less than \$50.00 per year should be available for purchasing textbooks and expendable supplies. Dissecting instruments required in the First Year will cost approximately \$20.00.

Examinations and Advancement

Examinations will be held in December and in May. The Faculty will determine the student's fitness for promotion at the end of each session. If the student's academic achievement in any session is unsatisfactory, he may, on the recommendation of the Faculty, be required by the Senate to withdraw from the Faculty. Students with unacceptable records may not repeat the work of a session unless permission is granted by the Senate on the recommendation of the Faculty.

In any given session, if progress of a student has been unsatisfactory in not more than one subject, the Department concerned may direct

such further work as will be necessary to prepare for a supplemental examination. If this work is completed during the following summer, and a reasonable knowledge of the subject is demonstrated in the supplemental examination, the student may be promoted. Where a supplemental examination is failed, dismissal will follow.

No student with defective standing from any cause will be promoted.

Financial Aid

For descriptions of bursaries, fellowships, scholarships and loans, see pages 45-91.

Veterans' Benefits

Applicants who are entitled to educational benefits under D.V.A. may address inquiries to the Veterans' Bureau at the University.

Time Tables

Time Tables will be announced at time of registration.

COURSES OF INSTRUCTION

The following courses will be taken by the First Year class in the 1950-51 session:

Anatomy 400-401 (Human Anatomy).—Each student is required to dissect the entire body. Lectures, quizzes and text examinations are correlated with the practical work of the dissection room. Both terms.

Anatomy 410 (Microscopic Anatomy).—The student studies the microscopic structure of organs and tissues, including their embryologic derivations, at approximately the same time he is studying gross structures and their relationships. The modern trend of functional interpretations of histology is followed. First term.

Anatomy 430 (Neuroanatomy).—A laboratory and lecture course which deals with the gross features and microscopic structure of the central nervous system. Second term.

Biochemistry 426 (General Biochemistry).—A laboratory and lecture course devoted to carbohydrate, protein, fat, mineral and vitamin metabolism, enzyme systems and the hormones. The emphasis is upon the fundamental chemical and physico-chemical phenomena underlying the functioning of the normal human body. First term.

Physiology 400 (Human Physiology).—A laboratory and lecture course which deals with the physiology of blood and blood-forming organs, circulation, respiration, digestion and nutrition, renal excretion and water balance. Second term.

Medicine 400 (Introduction to Medicine).—Background of the contributions of various non-medical sciences to the development of modern clinical medicine. Second term.

Medicine 490 (History of Medical Progress).—An orientation course in which the structure of modern medicine is considered in relationship to economic and sociological problems of individuals and communities. Both terms.

Psychiatry 400 (Human Behaviour).—The various aspects of human behaviour are considered, with special reference to their importance in medicine. Second term.

Public Health 400 (Introduction to Public Health).—Historical and contemporary background and organization of the public health system; survey of the proper future development of preventive medicine. First term.

THE
FACULTY
OF
GRADUATE STUDIES

1950-1951

1950-51

FACULTY OF GRADUATE STUDIES

The degrees offered in the Faculty of Graduate Studies are Master of Arts (M.A.), Master of Applied Science (M.A.Sc.), Master of Science in Agriculture (M.S.A.), Master of Forestry (M.F.), and Doctor of Philosophy (Ph.D.).

COURSES LEADING TO THE MASTER'S DEGREE

1. Students registering as graduates must hold either a Bachelor's degree from this University or its equivalent. In the Faculty of Arts and Science and the Faculty of Agriculture, however, students who lack not more than 6 units towards the Bachelor's degree may register in courses open to graduate students (provided that they keep within an over-all maximum of 18 units), but may receive graduate credit for such courses only if they subsequently register 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 to the Registrar, 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 Executive Committee of the Faculty of Graduate Studies will determine the standing of such a student in this University.

3. Graduate students must register in the same registration period as undergraduates.

4. The Master's degree is offered

(a) by a single department, or

(b) by a combination of departments, provided that the thesis covers work in both departments and is approved by both departments.

5. Candidates for the Master's degree must hold a Bachelor's degree with

(a) Honours in the field of the proposed Master's course, or

(b) First Class standing in at least two of the courses and Second Class standing in the remaining courses of Third and Fourth Year work prescribed by the department or departments concerned as prerequisite to the Master's course.

Candidates must satisfy the Executive Committee of the Faculty of Graduate Studies that they are competent to proceed to the course of study proposed.

6. Graduate students who do not meet the full requirements of Section 5 (a) or (b) may be permitted to make up any deficiencies concurrently with the Master's course, except that credit will not be given for more than 18 units of undergraduate and graduate work (or the equivalent in the departments of the Faculty of Applied Science) in any Winter Session.

7. Candidates for the Master's degree are required

(a) to spend at least one Winter Session in resident graduate study, or

(b) in the departments of the Faculty of Arts and Science only, to do two or more years of work under University supervision, during which not more than 6 units of credit may be counted for reading courses.

8. Graduate students who are assistants, receiving sessional remuneration exceeding \$700, will not be allowed to come up for final examination in less than two academic years after registration as graduate students. Graduate students who are assistants, receiving sessional remuneration not exceeding \$700, may be permitted to qualify for the Master's degree after one Winter Session of University attendance provided that in the summer vacation they have done research work in the nature and extent satisfactory to the department or departments concerned. Such students must be registered as graduate students and must have received the approval of the head of the department concerned and the Executive Committee of the Graduate Faculty before entering upon the research in question.

9. The Master's course will require a thesis counting from 3 to 6 units and courses numbered 300 or above so that the total number of units, including the thesis, is at least 18 (or the equivalent in departments of the Faculty of Applied Science). The course will normally include at least 6 units of courses numbered 500 or above. If the degree is to be taken in a single department, at least 3 and not more than 6 units must be taken in related fields outside the department. The course or courses in related fields may be taken in departments of any of the three Faculties of Arts and Science, Applied Science, and Agriculture.

10. Candidates for the Master's degree, if they have not obtained credit for French 202, German 200, or Russian 200 must satisfy the head of the department in which their graduate work will be done that they have a working knowledge of one of these languages or of some other language suitable for the work of the department concerned. This rule shall not restrict the right of any department to require a reading knowledge of an additional language or languages, or to require a higher standard of competence in one or more of the languages offered by a candidate.

11. The Master's course must be chosen in consultation with the department or departments concerned, and be approved by the Executive Committee of the Faculty of Graduate Studies. At least Second Class standing is required in each course.

12. Candidates for the Master's degree must submit in its final form three typewritten copies of the thesis, with a certificate signed by two members of the department or departments concerned stating that the required standards of a Master's thesis have been met, and an abstract approved by the department or departments concerned. The date of submission for a Spring Congregation is the last day of lectures in the second term and for an Autumn Congregation the date is October 1st. (See circular entitled *Instructions for the Preparation of Master's Theses*).

13. A general examination in the field of the Master's course will be held at the discretion of the department or departments concerned. Examinations may be written or oral, or partly written and partly oral.

14. Each graduate student who wishes to become a candidate for a Master's degree must, on or before October 15th, file in the Registrar's office an official application, signed by the head of the department concerned, showing the prerequisites, if any, that remain to be completed and the courses required for the degree. The form for this purpose should be obtained from the Registrar's office at the time of registration. Subsequent changes in the student's programme must be entered on this form and initialled by the head of the department. Candidacy for the degree will not be approved by the Executive Committee until all prerequisites have been completed.

15. At a Spring or Autumn Congregation only those candidates will be

eligible for the Master's degree whose applications have been completed and submitted on or before October 15th of the preceding year. The applications of students who expect to receive the Bachelor's degree at an Autumn Congregation and the Master's degree in the following year will not be finally approved until the Bachelor's degree is conferred.

The following special requirements are prescribed by the departments.

THE DEGREE OF MASTER OF ARTS

Bacteriology and Preventive Medicine

Prerequisites: At least 9 units in the Department, including Bacteriology 201, 301, 401.

M.A. Course: Thesis, counting at least 5 units, and courses to complete the requirements of section 9 above.

The number of M.A. students who can be accepted in any one year is limited.

Biology and Botany

Prerequisites: Honours; or Biology 100, Botany 200, and 8 approved additional units, including Zoology 200.

M.A. Course: Thesis, counting at least 5 units, and courses to complete the requirements of section 9 above.

Chemistry

Prerequisites: Honours in Chemistry.

M.A. Course: Thesis, counting normally 6 units, Chemistry 548 and courses to complete the requirements of section 9 above.

Classics

Prerequisites: Honours; or 15 units in the Department chosen from courses offered in the Third and Fourth Years.

M.A. Course: Thesis, counting at least 3 units, and courses to complete the requirements of section 9 above.

Candidates are expected to have a reading knowledge of French and German.

Economics

Prerequisites: Honours; or Economics 200, 300, 301 or 330, and 335, and 6 units in advanced courses in Economics, Political Science, or Sociology.

M.A. Course: Economics 500, 540, and 549, and sufficient additional advanced courses to complete the requirements of section 9 above.

Education

Prerequisites: The Teacher Training Course with at least Second Class standing in each of Education 500 to 503 inclusive, and First Class standing in at least two of these; or a Bachelor's degree with at least 6 units in Education, of which at least 3 units must be with First Class standing, and First Class standing in at least 3 other units.

M.A. Course: Thesis, counting at least 3 units, and courses to complete the requirements of section 9 above. Attendance at a seminar may be required, and, when necessary, Education 582 or its equivalent will be required.

Students may not take Education courses for credit towards the M.A. degree without approved teaching experience.

English

Prerequisites: Honours, or at least 15 units in the Department chosen from courses offered in the Third and Fourth Years.

M.A. Course: Thesis, counting 3 units, English 442 or its equivalent, and other courses to complete the requirements of section 9 above. Candidates must write an examination in the history of English literature and demonstrate an adequate reading knowledge of the foreign language offered.

French

Prerequisites: Honours; or French 101, 202, and 12 additional units in the Department chosen from courses in the Third and Fourth Years.

M.A. Course: Thesis, counting at least 3 units, French 501 and other courses to complete the requirements of section 9 above.

Geography

Prerequisites: Honours; or 12 units in advanced courses in Geography.

M.A. Course: Thesis, counting 3 units, and courses to complete the requirements of section 9 above. All graduates must attend the Geography Honours seminar.

Geology

Prerequisites: Honours; or Geology 200, 302, and 18 additional units in Geology.

M.A. Course: Thesis, counting at least 3 units, and courses to complete the requirements of section 9 above.

German

Prerequisites: Honours; or German 100, 200, and 12 additional units in the Department chosen from courses in the Third and Fourth Years.

M.A. Course: Thesis, counting 3 units, 6 units selected from German 500, 501, and 502, and other courses to complete the requirements of section 9 above.

A comprehensive written and oral examination on the history of German literature is required of all candidates.

History

Prerequisites: Honours; or one of History 101, 202, 203, 404, or an equivalent course in Senior Matriculation; 15 units to be chosen from the Third and Fourth Year courses in History, and the Third and Fourth Year Honours seminars.

M.A. Course: Thesis, counting at least 3 units, and courses to complete the requirements of section 9 above.

All candidates must attend an M.A. seminar, counting 3 units.

Latin

Prerequisites: Honours; or Latin 310, 410 and 12 additional units in the Department chosen from courses offered in the Third and Fourth Years.

M.A. Course: Thesis, counting at least 3 units, and courses to complete the requirements of section 9 above.

Candidates are expected to have a reading knowledge of French and German. Acquaintance with Greek also is of high importance.

Mathematics

Prerequisites: Honours; or Mathematics 300, 302, 401, 440, Physics 200, and 8 additional units in the Department chosen from courses in the Third and Fourth Years.

M.A. Course: Thesis, counting at least 3 units, and courses to complete the requirements of section 9 above.

Philosophy

Prerequisites: Honours; or Philosophy 100 or 205, 202, and 9 additional units in Philosophy, including at least two of Philosophy 210, 310, 410, 415.

M.A. Course: Thesis, counting at least 3 units, and courses to complete the requirements of section 9 above.

Physics

Prerequisites: Honours; or Physics 200, 300, 304, 308, 401, 402.

M.A. Course: Thesis, counting at least 3 units, Physics 501, 502, 503, 504, and courses to complete the requirements of section 9 above.

Political Science

Prerequisites: Honours in Political Science; or in Economics; or in Economics in combination with some other subject; or 9 units in Political Science and 6 additional units in Economics or Political Science.

Three units in Political Science or 3 units in Economics or 3 units in each may be replaced by an equivalent number of units chosen from History 309, 310, 311, 312, 419, 420, International Studies 400, and Slavonic Studies 308, 330, and 412.

M.A. Course: Political Science 540 and 549, and other courses to complete the requirements of section 9 above.

The courses listed in the preceding paragraph may, with the approval of the Department, be counted as courses in Political Science.

Psychology

Prerequisites: Honours; or Psychology 100 and 12 additional units in Psychology; Philosophy 100 or 205 and Philosophy 202; and any 6 units in Mathematics or a science.

M.A. Course: Thesis, counting at least 3 units, and courses to complete the requirements of section 9 above.

Sociology

Prerequisites: Honours; or any three of Sociology 300, 325, 330, 400, 425, 430, 435, and 3 additional units in Economics, Political Science, or Sociology chosen from courses in the Third and Fourth Years.

M.A. Course: Sociology 540 and 549, and sufficient other advanced courses to complete the requirements of section 9 above.

Spanish

Prerequisites: Honours; or Spanish 101, 201, and 12 additional units chosen from courses in the Third and Fourth Years.

M.A. Course: Thesis, counting at least 3 units, Spanish 501, and other courses to complete the requirements of Section 9 above.

Zoology

Prerequisites: Honours; or Biology 100, Zoology 200, Botany 200, Chemistry 100 or 101, Physics 100 or 101, and 15 additional units in Zoology.

M.A. course: Thesis, counting 6 units, and courses to complete the requirements of section 9 above.

The number of M.A. students who can be accepted in any one year is limited.

THE DEGREE OF MASTER OF APPLIED SCIENCE

Chemical Engineering

Prerequisites: B.A.Sc. in Chemical Engineering and the completion of the requirements of section 5 (b) above.

M.A.Sc. Course: Thesis, counting normally 6 units, Chemistry 548, 550, and other courses to complete the requirements of section 9 above.

Civil Engineering

Prerequisites: Graduation in Civil Engineering and the completion of the requirements of section 5 (b) above.

M.A.Sc. Course: Thesis, counting normally 6 units, at least one course (or 3 units) chosen from graduate courses in the Department, and other courses to complete the requirements of section 9 above.

Electrical Engineering

Prerequisites: Graduation in Electrical Engineering and the completion of the requirements of section 5 (b) above.

M.A.Sc. Course: Thesis, counting normally 6 units, at least one course (or 3 units) chosen from graduate courses in the Department, and other courses to complete the requirements of section 9 above.

Engineering Physics

Prerequisites: Graduation in Engineering Physics and the completion of the requirements of section 5 (b) above.

M.A.Sc. Course: Thesis, counting at least 3 units, at least 6 units chosen from graduate courses in the Department and other courses to complete the requirements of section 9 above.

Geological Engineering

Prerequisites: Graduation in Geological Engineering and the completion of the requirements of section 5 (b) above.

M.A.Sc. Courses: Thesis, counting at least 3 units, the required courses in the chosen option, and other courses to complete the requirements of section 9 above.

Options:

Economic Geology: Geology 526 and 3 units chosen from Geology 520, 523, 524 or 525.

Mineralography: Geology 524 and 3 units chosen from Geology 523, 525, 526.

Mineralogy: Geology 523 and 3 units chosen from Geology 520, 524, 525, 526.

Palaeontology: Geology 521 or 531 and 3 units chosen from Geology 520, Biology 400, Zoology 200, 300 or 301.

Petrology: Geology 525 and 3 units chosen from Geology 523, 524, 526.

Stratigraphy: Geology 520 and 3 units chosen from Geology 521 or 531, 525 and Agronomy 415.

Mechanical Engineering

Prerequisites: Graduation in Mechanical Engineering and the completion of the requirements of section 5 (b) above.

M.A.Sc. Course: Thesis, counting normally 6 units, at least one course (or 3 units) chosen from graduate courses in the Department, and other courses to complete the requirements of section 9 above.

Metallurgical Engineering

Prerequisites: Graduation in Metallurgical, Mining, Chemical, or Mechanical Engineering and the completion of the requirements of section 5 (b) above.

M.A.Sc. Course: Thesis, counting normally 3 units, at least one course (or 3 units) chosen from graduate courses in the Department, and other courses to complete the requirements of section 9 above.

THE DEGREE OF MASTER OF FORESTRY

Forestry

Prerequisites: Bachelor's degree equivalent to the B.S.F. or B.A.Sc. in Forest Engineering of the University of British Columbia, and the completion of the requirements of section 5 (b) above.

The prerequisites in the case of each applicant to be determined by the Department in relation to the field of the proposed thesis.

M.F. Course: Thesis, counting at least 3 units, at least 3 units chosen from graduate courses in the Department, including Forestry 553, and other courses to complete the requirements of section 9 above.

THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE

Agricultural Economics

Prerequisites: Honours; or at least 12 units in the Department and Economics 200, 335 and Agricultural Economics 301.

M.S.A. Course: Thesis, counting at least 5 units, and courses to complete the requirements of section 9 above.

Agricultural Mechanics

Prerequisites: Honours; or Second Class standing in at least 12 units in the Department chosen from courses offered in the Third and Fourth Years.

M.S.A. Course: Thesis, counting 6 units, and courses to complete the requirements of section 9 above.

Agronomy

Prerequisites: Honours; or completion of required undergraduate courses in the option selected for graduate study.

M.S.A. Course: Thesis, counting at least 5 units, research and other courses to complete the requirements of section 9 above.

Certain courses in related departments with the approval of the Head of the Department count for credit in Agronomy.

Animal Husbandry

Prerequisites: Honours; or at least 12 units in the Department chosen from courses offered in the Third and Fourth Years.

M.S.A. Course: Thesis, counting at least 5 units, and courses to complete the requirements of section 9 above.

Dairying

Prerequisites: Honours; or at least 12 units in the Department chosen from courses offered in the Third and Fourth Years.

M.S.A. Course: Thesis, counting at least 5 units, and courses to complete the requirements of section 9 above.

Horticulture

Prerequisites: Honours; or completion of required undergraduate courses in the option selected for graduate study.

M.S.A. Course: Thesis, counting at least 5 units, research and other courses to complete the requirements of section 9 above.

Poultry Husbandry

Prerequisites: Honours; or completion of required undergraduate courses in the option selected for graduate study.

M.S.A. Course: Thesis, counting at least 5 units, research and other courses to complete the requirements of section 9 above.

COURSES LEADING TO THE DEGREE OF Ph.D.

1. To become a candidate for the Ph.D degree graduate students must complete application forms which may be obtained from the Registrar's office and file them with the Registrar. Such applications should be submitted before March 1st and will not be accepted after September 1.

2. Candidates for the Ph.D. degree must satisfy the Executive Committee of the Faculty of Graduate Studies that they are competent to proceed to the course of study proposed and must hold either

(a) a Master's degree (or the equivalent), or

(b) a Bachelor's degree with Honours (or the equivalent), in which case additional work will be required.

3. The Executive Committee of the Faculty of Graduate Studies may require students who have taken all (or the greater part) of their previous work at the University of British Columbia to broaden their experience by spending at least one year at another research institution before receiving their Ph.D. degree.

4. The progress of all Ph.D. candidates will be reviewed in the spring of each year, and the Executive Committee of the Faculty of Graduate Studies may require any candidate to withdraw if his work has not been satisfactory.

5. Candidates for the Ph.D. degree normally will be required to spend three Winter Sessions at the University, though candidates qualified under 2 (a) may have this time reduced in exceptional cases by the Executive Committee of the Faculty of Graduate Studies.

6. Unless, in the opinion of the Executive Committee of the Faculty of Graduate Studies the delay has been justified by circumstances that are altogether exceptional, candidates who have not received their degree at the end of six Winter Sessions will be required to withdraw.

7. Candidates must satisfy the Executive Committee of the Faculty of Graduate Studies by the spring after registration at the latest of their ability to read technical material in two, at least, of the French, German and Russian languages; provided that the department concerned may accept some other language in substitution for one of the required languages if the character of the candidate's proposed work justifies this substitution. This rule shall not restrict the right of any department to require a reading knowledge of additional languages, or to require a higher standard of one or more of the languages offered by a candidate.

8. The work of each candidate will be supervised by a Candidate's Committee consisting of not less than three members, at least one of whom may be chosen from a department other than that in which the candidate is writing his thesis. This Committee will assist the candidate to plan his work, supervise his research, and direct the preparation of his thesis.

9. The programme of study proposed by a candidate must be approved both by the Candidate's Committee and by the Executive Committee of the Faculty of Graduate Studies. Work for the Ph.D. degree will consist of seminars, assigned readings, consultations, and such formal courses as may be deemed essential for the fulfilment of the requirements for the degree. A major part of a candidate's work will consist of a thesis embodying the results of original and independent research. The Executive Committee of the Faculty of Graduate Studies may require the thesis to be submitted to an outside examiner or examiners, and may also require its publication in whole or in part as a condition of granting the Ph.D. degree.

10. A candidate's thesis must be presented in the form prescribed in the leaflet entitled *Preparation of Ph.D. Theses*, copies of which may be obtained from the Registrar.

11. As the number of candidates that can be accommodated is limited, students, no matter how well qualified, can be accepted only if there is a vacancy in the specific field in which they propose to major.

12. Candidates will normally be required to take courses totalling not less than 6 units in their major field and at least 6 units in related subjects, but they may be required to take any additional courses that, in the opinion of the department concerned, are necessary to complete their knowledge of their chosen field of study.

13. The examinations required will be determined by the department concerned, with the approval of the Executive Committee of the Faculty of Graduate Studies. Generally speaking these will consist of the following: (a) course examinations, in which candidates are required to secure at least Second Class standing; (b) examinations to test the candidate's ability to read the foreign languages required for his programme of study

(see regulation 7 above); (c) a comprehensive examination, which normally will be held when the candidate has completed all course work required, and which is intended to test his grasp upon his chosen field of study as a whole, and (d) an oral examination upon his thesis.

14. At the end of the first year, i.e., in April, candidates will be required to write examinations in at least 3 units of work in their major field and at least 3 units of the related subjects. Examinations in the remainder of the formal course work must be written before a candidate takes the oral examination on his thesis.

15. A candidate may not assume teaching duties for which he receives sessional remuneration exceeding \$700 without the permission of the Executive Committee of the Faculty of Graduate Studies.

At present Ph.D. courses are offered by the following departments only. Particulars of the fields in which this work is offered follow:

Biology and Botany

1. Courses are offered in two major fields:
 - (a) **Plant Morphology.** Thesis direction is offered in Cytology and Histology and in the Taxonomy of Spermatophytes, Fungi and Algae.
 - (b) **Physiology.** Specialization is possible in certain fields of General Physiology: hormones, vitamins, respiration and biotic membranes; in Plant Physiology.
 - (c) **Plant Pathology.**
 - (d) **Plant Ecology.** Primarily in Synecology.
2. Related Subjects:

Courses in cognate subjects will be selected in consultation with the Departments.
3. The following courses will be accepted for the Ph.D. credit:
 - (a) Graduate courses (numbered 500 or above) offered in the Department concerned with the major field provided that credit has not already been obtained for such courses.
 - (b) Certain courses numbered 400 or above in related subjects as approved in particular cases on the recommendation of the departments concerned.

Forestry in cooperation with Biology and Botany

1. Courses are offered in five major fields:
 - (a) **Forest Ecology.**
 - (b) **Forest Genetics.**
 - (c) **Forest Pathology.**
 - (d) **Wood Anatomy.**
 - (e) **Tree Physiology.**
2. Related subjects:

These may include Agronomy, Biology, Botany, Chemistry, Forestry, Geography, Geology, Horticulture, Mathematics, Physics, Zoology.
3. The following courses will be accepted for Ph.D. credit:
 - (a) Graduate courses (numbered 500 or above) offered in the department concerned provided that credit has not already been obtained for such courses.
 - (b) Certain courses numbered 400 or above in related subjects as approved in particular cases on the recommendation of the departments concerned.

Forestry in cooperation with Zoology

1. Courses are offered in two major fields:
 - (a) **Forest Entomology.**
 - (b) **Wild Life Biology.**
2. Related subjects:

These may include Agronomy, Biology, Botany, Chemistry, Forestry, Geography, Geology, Horticulture, Mathematics, Physics, Zoology.
3. The following courses will be accepted for Ph.D. credit:
 - (a) Graduate courses (numbered 500 and above) offered in the department concerned with the major field provided that credit has not already been obtained for such courses.
 - (b) Certain courses numbered 400 or above in related subjects as approved in particular cases on the recommendation of the departments concerned.

Mathematics

1. Courses are at present offered in two major fields only.
 - (a) **Algebra.** Particularly Theory of Groups, Rings, Ideals.
 - (b) **Applied Mathematics.** Particularly Exterior Ballistics, Hydro and Aerodynamics, Non-linear Mechanics, Eigen-value problems.

Note: Thesis direction cannot be offered in all branches of the above fields. The Department reserves the right to refuse admission to a student, no matter how well qualified, if no staff member is available to supervise the student's research.
2. Related subjects:

These may include Physics, Electrical Engineering, Philosophy.
3. The following courses will be accepted for Ph.D. credit:
 - (a) Graduate courses (numbered 500 or above) offered in the Department provided that credit has not already been obtained for such courses.
 - (b) Certain courses numbered 400 or above in related subjects as approved in particular cases on the recommendation of the departments concerned.

Physics

1. The Department offers opportunities for Ph.D. work in the following major fields: Nuclear Physics, Spectroscopy, Low Temperatures, Theoretical Physics and Biophysics.
 - (a) For work in **Nuclear Physics** there is considerable equipment, including a 4 Mev Van de Graaff Generator, and such ancillary apparatus as beta-ray spectrometers, magnets, scalars, and Geiger counters.
 - (b) In **Spectroscopy**, the Department has the following: vacuum grating, 21' grating, quartz spectrographs, Perkin-Elmer infra-red spectrometer, moll-microphotometer measuring micrometers, and also wave guides, sources, and detectors for micro-wave work.
 - (c) **Low Temperatures**, a Collins-type helium cryostat.
 - (d) Some equipment such as Tischuis Electrophoresis apparatus, Beckmann Spectrophotometer, Polarograph is available for work in **Biophysics** and it is expected that, with the establishment of a Medical School, further facilities will be provided.

2. Related Subjects:

These may include Mathematics, Chemistry, Electrical Engineering and Metallurgy.

3. The following courses will be accepted for Ph.D. credit:

- (a) Graduate courses (numbered 500 or above) offered in the Department provided that credit has not already been obtained for such courses.
- (b) Certain courses numbered 400 or above in related subjects as approved in particular cases on the recommendation of the departments concerned.

Zoology

1. Courses are offered in three major fields:

- (a) **Fisheries and Marine Zoology.** Research in the fundamental and applied biology of fishes and marine invertebrates.
- (b) **Wildlife Biology.** Research in the ecology of the birds and mammals of British Columbia, particularly those referred to as game animals.
- (c) **Experimental Zoology.** Research in the responses of animals and animal populations to environmental conditions and the comparative physiology of animal species.

2. Related subjects in which courses may be taken are as follows:

Agronomy, Animal Husbandry, Bacteriology, Chemistry, Forestry, Geology, Mathematics and Physics.

3. The following courses will be accepted for Ph.D. credit:

- (a) Graduate courses (numbered 500 or above) offered in the Department provided that credit has not already been obtained for such courses.
- (b) Certain courses numbered 400 or above in related subjects as approved in particular cases on the recommendation of the departments concerned.

4. A candidate who has not previously spent a study period at a Marine Biological Station will be encouraged to do so before the completion of his Ph.D. course.

INSTITUTE OF OCEANOGRAPHY OF THE UNIVERSITY OF BRITISH COLUMBIA

The Institute of Oceanography was established at the University of British Columbia in the fall of 1949. It is supported in part by the Defence Research Board and by the Joint Committee on Oceanography, the latter body representing the interests of the Royal Canadian Navy, the National Research Council, the Fisheries Research Board and the Hydrographic Service.

The increasing interest in the problems of the sea has created a demand in Canada for trained scientists to undertake oceanographic investigations. The Institute represents the cooperative effort of the three departments of Chemistry, Physics, and Zoology to train graduate students in one or more of these branches in the principles and techniques of oceanographic research.

The Institute is further charged with the responsibility for fundamental research in Oceanography. Its location is particularly suited to this purpose. The fjords of British Columbia present special features which facilitate the study of water properties under restricted conditions. The large volume of fresh water discharged into the Gulf of Georgia from the Fraser river represents an estuarine condition which is amenable to detailed study. The strong tidal currents typical of many channels along the coast provide opportunities for the investigation of turbulent mixing. Easy access to the open ocean is obtained through the Strait of Juan de Fuca.

The wide ranges of salinity and concentration of plant nutrients present special problems in the chemistry of seawater and establish a variety of environmental conditions reflected in the diversified fauna and flora of the region.

The interrelations between populations of marine organisms, especially fish, and their environmental conditions offer problems of particular significance on the Pacific Coast of Canada.

The importance of the sea in the economy of the Pacific Coast forecasts an increasing industrial application of oceanography.

Opportunity for investigation, observation and collection at sea is available to the staff and students of the Institute through the facilities and research ships of the Pacific Oceanographic Group and the Pacific Naval Laboratory.

The Institute is directed by a Committee on Oceanography representing the cooperating departments and supporting organizations. The Committee reviews the qualifications of candidates entering the field of oceanography and passes on the professional competence of graduating oceanographers.

A student desiring to specialize in Oceanography should discuss his programme with the head of the department in which he is majoring, who will then submit the programme to the Committee for review. Each such student will be required to take Oceanography 500, 503, Chemistry 509, Physics 536, and Zoology 511. Additional courses may be recommended by the Committee.

Committee on Oceanography

Chairman

W. A. CLEMENS, M.A. (Toronto), Ph.D. (Cornell), F.R.S.C., Professor and Head of the Department of Zoology.

Members

N. 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, Ottawa, Bristol), D.C.L. (Whitman), F.R.S.C., President of the University of British Columbia.

HENRY F. ANGUS, B.A. (McGill), B.C.L., M.A. (Oxon), LL.D. (McGill), F.R.S.C., Dean of the Faculty of Graduate Studies.

J. GILBERT HOOLEY, M.A. (Brit. Col.), Ph.D. (Mass. Inst. of Technology), Professor and Chairman of the Department of Chemistry.

F. H. SANDERS, M.B.E., B.A. (Brit. Col.), Ph.D. (California), Superintendent, Pacific Naval Laboratory.

GORDON MERRITT SHRUM, O.B.E., M.M., E.D., M.A., Ph.D. (Toronto), F.R.S.C., Professor and Head of the Department of Physics.

Staff

W. M. CAMERON, M.A. (Brit. Col.), Honorary Associate Professor.

G. L. PICKARD, M.B.E., M.A., D.Phil. (Oxon), Associate Professor.

J. P. TULLY, M.B.E., B.Sc. (Man.), Ph.D. (Wash.), A.I.C., F.C.I.C., Honorary Lecturer.

Courses are offered in the following fields:

General Oceanography

500. (1) **Introduction to Synoptic Oceanography.**—Survey of oceanic circulation, distribution of temperature and salinity, energy budget. Text-book: Sverdrup, Johnson and Fleming, *The Oceans*. Mr. Cameron. [2-0; 0-0]

501. (1) **Advanced Synoptic Oceanography.**—Detailed study of the water masses of the oceans, enclosed basins, estuaries. Distribution of dissolved substances. Prerequisites: Oceanography 500, Physics 536. Mr. Cameron. [0-0; 1-2]

502. (1) **Special Topics.** — Instrumentation, submarine geology, marine meteorology, navigation. Staff. [1-0; 1-0]

503. (2) **Oceanographic Methods.**—Observation and collection at sea; processing and analysis of data. Cruises to be arranged. Staff. [0-3; 0-3]

Chemistry

509. (1) **Seawater Analysis.**—Standard methods for the chemical analysis of seawater; salinity, oxygen, carbon dioxide, nutrient salts. Mr. Tully. [1-3; 0-0]

510. (2) **Chemistry of Seawater.**—Properties, reactions, and constitution of seawater. Mr. Tully. [0-0; 2-6]

Physics

536. (1) **Introduction to Dynamic Oceanography.** — Hydrostatics, geostrophic flow, continuity, eddy viscosity and diffusion. Mr. Cameron, Mr. Pickard. [2-0; 0-0]

537. (1) **Advanced Dynamic Oceanography.**—A more intensive study of the dynamics of ocean and coastal currents. Prerequisites: Oceanography 500, Physics 536. Mr. Pickard. [0-0; 2-0]

538. (1) **Hydrodynamics.** — Systematic exposition of principles governing flow of fluids, ideal and real, turbulent flow in the oceans. Mr. Pickard. [1-0; 1-0]

539. (1) **Waves and Tides.**—Surface and internal waves, tides of the oceans, tidal currents. Prerequisite: Physics 536. Mr. Pickard. [1-0; 1-0]

Zoology

511. (1) **Introduction to Biological Oceanography.**—Biology of the sea related to physical and chemical conditions. Prerequisites: Oceanography 500, Physics 536. Mr. Cameron. [0-0; 2-0]

512. (2) **Advanced Biological Oceanography.**—Collection, identification, enumeration of marine plankton; correlation of distribution with environment. Prerequisites: Oceanography 500, 501, Chemistry 509, Physics 536, Zoology 511. Mr. Cameron. [1-3; 1-3]

DOUBLE DEGREES

1950-1951

1950-51

DOUBLE DEGREES

Students who intend to take two Bachelor's degrees are advised to spend the full time required for each. For those who are unable to do so, the following regulations have been made. Attention is drawn in all cases to notes (a) to (d) below. Attention of students from other universities is called to note (d).

I. The Degree of B.A. combined with the degree of B.A.Sc. (Engineering), B.Arch., B.H.E., B.P.E., B.S.A., B.S.F., or B.S.P.

A student taking a course of study leading to the degree of B.A.Sc. (Engineering), B.Arch., B.H.E., B.P.E., B.S.A., B.S.F., or B.S.P. may obtain the B.A. degree in the General Course by completing not less than 48 units in courses regularly offered for the B.A. degree. Of these 48 units, credit up to a maximum of 15 units may be granted for courses which are taken to meet the requirements for the other degree, but only in the case of subjects numbered under 300. The remaining units, 33 or more, must be chosen so that the student's combined course meets the requirements of the First and Second Years in Arts and Science, as outlined on pages 96-99. In addition they must include at least 15 units of courses numbered 300 or higher. Courses involving a duplication of work required for the other degree will not be counted. (See notes, below).

The special arrangements for the degree of B.A. combined with the degree of B.Com. have been discontinued except for those students who had commenced such a course in or before the Session 1949-50.

II. The Degree of B.A. combined with the Degree of B.A.Sc. (Nursing)

First, Second, and Third Years

Students register in the Faculty of Arts and Science for three years' work as follows: English 100 and 101, Mathematics 101, a language course numbered 100-199, Chemistry 100 or 101, Biology 100, in the First Year; English 200, the second course in the language numbered 200, 201, 202, or 203, Bacteriology 201, in the Second Year; Physics 110, Zoology 200, Psychology 100, in the First, Second, or Third Year; Bacteriology 301, Nursing 151, Nursing 152, in the Third Year; 9 additional units to be chosen from courses regularly offered for the B.A. degree, numbered 300 or higher. (See notes, below).

Fourth, Fifth, and Sixth Years (Professional)

Upon completion of the professional years the student is granted the degree of B.A. by the University and the diploma by the hospital school of nursing.

Final Year

As in Nursing A; 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).

III. The Degree of B.A. combined with the Degree of LL.B.

Completion of at least 48 units in courses regularly offered in the Faculty of Arts and Science for the B.A. degree and of three complete years in Law, is required for the combined degrees of B.A., LL.B. The 48 units must be chosen to meet the requirements of the First and Second Years of Arts and Science, as outlined on pages 96-99, and in addition must include at least 15 units of courses numbered 300 or higher. Students must comply with the admission requirements for the Faculty of Law, page 273. Courses in Arts and Science may not be taken concurrently with work in Law. (See notes, below).

Notes

(a) Courses for the degree of B.A. combined with the degree of B.H.E. or B.P.E. must be approved by the Dean of the Faculty of Arts and Science and the head of the department concerned. Courses for the degree of B.A. combined with the degree of B.A.Sc., B.Arch., B.S.A., B.S.F., B.S.P., or LL.B. must be approved by the deans of the faculties concerned.

Students who intend to study for a double degree are advised to obtain approval of their courses as early as possible. Failure to do so may mean that they are unable to qualify in the minimum time or with the minimum number of units.

(b) The B.A. degree will not be conferred until the student has obtained full standing in all but the final year of his course for the other degree.

(c) Students taking a combined course who are fulfilling the language requirements as indicated in B and H, page 97, by including a course numbered 90, must complete the third course in the language, unless they qualify under note 5 (iii), page 98.

(d) Credit toward the combined degrees for courses taken at other universities is limited to courses in the First Year of Arts and Science.

UNIVERSITY SUMMER SESSION

Seven Weeks—July 3rd-August 17th

The announcement of the courses to be offered in the Summer Session will be issued before Easter, if possible.

The regulations, etc., governing the Summer Session are as follows:

1. The degree of B.A. in the General Course will be granted on completion of courses amounting to a minimum of 60 units chosen in conformity with Calendar regulations. (See pages 95-100).

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 6 units.

4. Attention of students is drawn to regulations in the following sections of this Calendar:

Summer Session and other Credits, page 95;

Senior Matriculation Credits, page 96;

General Regulations (1, 3, 6, 8, 9), page 96;

First and Second Years, page 96;

Third and Fourth Years, page 99;

General Course Curriculum, page 99.

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 will be classified in accordance with the regulations given on page 40 under Registration and Attendance.

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 44.

Examinations and Advancement

1. Summer Session examinations are held at the close of the Summer Session.

2. A student in the Summer Session will receive credit for each course in which he obtains a grade of 50 per cent.

3. In any course which involves both laboratory work and written examinations, students will be required to make satisfactory standing in both parts. Results in laboratory work will be announced prior to the final examinations, and students who have not obtained a mark of at least 50% will neither be permitted to write the examination nor to receive credit for the course. If the course is repeated no exemption will be granted from the work in either part.

4. A candidate in the Summer Session will be granted a supplemental in a subject which he has taken during that session, provided (i) he has written the final examination and has obtained a final mark of not less than 35%, and (ii) he has obtained three units of credit in that session. Supplemental examinations in Summer Session courses are held in the first week of the Summer Session.

CORRESPONDENCE COURSES FOR ACADEMIC CREDIT

The University of British Columbia is developing a programme of correspondence studies which will be available to persons who wish to earn credit towards a Bachelor of Arts degree, but cannot attend the regular sessions of the University. These courses will, for the most part, be offered at the Second and Third Year level.

The correspondence courses currently offered by the University are listed in the Correspondence Course Syllabus available from the Department of University Extension.

General regulations governing enrolment in correspondence courses are given below; detailed information regarding University regulations will be found in this Calendar (pages 95-110).

Admission

Correspondence courses are open to applicants with full First Year or full Senior Matriculation standing, who have fulfilled the prerequisites for the course concerned. All requirements for admission to the University, as set forth in the Calendar, pages 38-39, apply to correspondence students.

Applicants must have reached their 18th birthday at the time they register for correspondence work.

Students registered in the Winter Session of the University are not allowed to enroll in correspondence courses.

Registration

Students will be permitted to register at any time of the year, but it is recommended that if possible they register at the time of the opening of the Winter Session, in September.

Course Credit

Upon completion of all assignments and examinations, full credit toward graduation will be granted.

Correspondence students will note that, of the last 45 units for the Bachelor of Arts degree, at least 30 units must be taken in attendance during the Winter or Summer Session.

Course credit will be granted only when the student has completed his correspondence work within two years of registration for the course.

The University will not grant credit for work taken concurrently at another university.

Fees

Fees charged for a correspondence course are the same as those charged for similar courses in the Winter Session. The course fees may be paid in three equal instalments, the first at the time of registration, the second in advance of receiving the ninth paper, and the third in advance of receiving the eighteenth paper. For details of fees see page 44.

Examinations

Upon satisfactory completion of all course papers and assignments, correspondence students are requested to notify the Extension Department of the date and centre selected for their final examinations.

Students so qualified are permitted to write their final examination at any of the following times: the Christmas examination period, the sessional examination period (April), or the supplemental examination period (the last week in August).

The Registrar of the University will endeavour to arrange the supervision of the examination, usually by a local educational official, at the centre selected by the student or at an alternative centre conveniently located.

Students who fail in two final examinations in any one course will not be permitted to register again for that correspondence course.

Standards in the final examinations will be the same as those for resident students:

First Class, 80% or over; Second Class, 65 to 80%; Passed, 50 to 65%; Failed, under 50%.

EXTRA-SESSIONAL CLASSES

1. Extra-session classes in the evenings or late afternoons 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, are qualified for registration as Second Year students (full undergraduate or conditioned) or hold Normal School diplomas, and who have the prerequisite standing.

2. Students attending the extra-session classes will be tested by the ordinary Winter Session examinations. Credit will be given for the course if a grade of at least 50% is obtained.

3. Regulations in respect to credits, standing, extra-mural work, examinations, and supplementals are given on pages 95, 96, 125, 126.

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.

The Department is responsible for the administration of the rural section of the Dominion-Provincial Youth Training Programme, sponsored jointly by the Dominion Department of Labour and the Provincial Department of Agriculture.

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 also assists in the administration and supervision of film circuits for the National Film Board, and acts as coordinating agency for the B. C. Circulating Film Exchange.

The present activities of the Department include the following:

(a) **Extension Lectures.**

Arrangements are made for members of the University teaching staff to give lectures at various centres throughout the Province.

(b) **Evening Classes.**

Evening classes on various subjects are held in the City of Vancouver and adjacent centres. Certain courses carry University credit.

(c) **Correspondence Courses for Academic Credit.**

The following courses are now available: Education 520 (History of Education), English 200 (A Survey of English Literature), Psychology 301 (Psychology of Childhood and Adolescence), and History 304 (Mediaeval History 500 to 1300).

(d) **Discussion Group Courses.**

Discussion group courses offered each year include specially prepared study bulletins, books and pamphlets in the following fields: parent education; drama, music, art, and literature; public speaking; current affairs; cooperative education.

(e) **Visual Education.**

The Department has one thousand 16 mm. motion picture films and eleven hundred sets of film strips and slides which are available on a rental basis. Projection equipment may also be obtained. Films are distributed for the National Film Society and the National Film Board.

(f) **Dramatics.**

The Department offers the following services to groups and individuals interested in the theatre: Play Lending Library, Summer School of the Theatre, correspondence courses, short courses, and general advisory service.

(g) **Agriculture.**

Short courses are arranged in cooperation with the University Faculty of Agriculture, the Provincial Department of Agriculture, and agricultural organizations. A pamphlet service is also maintained.

(h) **Home Economics.**

The Extension Department offers lectures and workshops related to Homemaking. Information and pamphlets concerning foods, clothing, textiles and home crafts are available upon request.

(i) **Handicrafts.**

The Department offers information about decorative and printing processes, leatherwork, weaving and many other crafts. Instruction is available in the form of short courses, lectures, demonstrations, books, pamphlets and films.

(j) **Parent Education.**

Lectures, short courses, printed materials, films, and advisory services are included in the Department's programme for individuals and groups interested in child development.

(k) **Extension Library.**

The Extension Library provides books in fields of current interest for groups and individuals.

(l) **Art and Music.**

Through short courses given by a visiting instructor, discussion group courses, a phonograph record loan service, books, films, and slides, the Department endeavours to be of assistance to groups and individuals interested in art and music.

(m) **Radio.**

The Department serves as Provincial Office for the C.B.C. programmes, Citizens' Forum and National Farm Radio Forum.

(n) **Public Relations.**

A regular news and information service on University activities is provided for newspapers, radio stations, and other agencies. A monthly news sheet is mailed on request.

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

UNIVERSITY SERVICE TRAINING CORPS

Selected students who can meet the physical requirements may take training in the University Contingent of the Canadian Officers' Training Corps, the University Naval Training Division, or the University Flight, R.C.A.F. (Aux.). 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., U.N.T.D., and R.C.A.F. (Aux.) University Flight, the Deans of the Faculties of Arts and Science, Agriculture, and Applied Science, and representatives from the Navy, the Army, and the Air Force. Applications are made at the respective unit offices located in the University Armoury.

(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, 1,452 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. Approximately \$100,000 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 fund 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 is now on a voluntary basis. The newly-revised programme governing training in the C.O.T.C. provides an opportunity for selected students to qualify for commissions in the Canadian Army, Active and Reserve. Prospective officer candidates are required to apply in writing for ad-

mission to the C.O.T.C. Upon acceptance, the candidate is appointed as an Officer Cadet with the rank and status of a 2/lt. and is required to devote a minimum of three hours per week at the Armoury to theoretical training during the Winter Session and from 3½ to 4 months each summer in Training at the various Active Force Corps Schools across Canada under Active Force officers and instructors. On the successful completion of his military training and in the case of engineers, upon graduating from the University, the Officer Cadet may emerge qualified for the rank of Captain in the Reserve Force and for the rank of Lieutenant in the Active Force. A limited number of these officers may be accepted into the Active Force each year. In some cases applicants for the Active Force may be accepted during their final year at University.

All inquiries for information should be directed to the Officer Commanding. Consultation with the Resident Staff Officer may be had at the C.O.T.C. Orderly Room situated in the University Armoury.

(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. Lieutenant H. M. McIlroy was appointed by the Naval Service as Commanding Officer of the U.N.T.D. with the rank of Lieutenant-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, not only as an ultimate career, but to benefit themselves by improving and developing such qualities as leadership, responsibility, loyalty, sound physique and self-confidence. Some of these may already be possessed by instinct or acquired by chance, but for the most they would be deliberately inculcated during the years of Required Training in the U.N.T.D. The present Commanding Officer, Lieutenant-Commander (g) F. J. E. Turner, R.C.N. (R) took over command of the unit in September, 1947, when Lieutenant-Commander McIlroy, R.C.N. (R) retired as a Commander. In September, 1949, Lieutenant J. W. de P. Greene, R.C.N. (R) was appointed as Resident Staff Officer U.N.T.D., with offices in the University Armoury.

Members of the U.N.T.D. are attested in the fall, as ratings in the R.C.N. (Reserve) on Divisional Strength at H.M.C.S. Discovery. Prior to February 1st they appear before an Officers' Selection Board and, if passed by the Board, are promoted to Cadets R.C.N. (R). Upon completion of a four year training syllabus Cadets qualify for a commission in the R.C.N. (Reserve) and may apply for a permanent force commission. Training involves twenty three-hour parades during the University session and a minimum of two full summers' training during vacation periods, and at least two weeks' duty in two other vacation periods. Provision is also made for those who desire additional sea duty. At the present time the Naval Service is looking towards the U.N.T.D. as an important source of future officers in the permanent establishment of the R.C.N.

Full information pertaining to the Unit and an interview with the Resident Staff Officer may be obtained by applying at the U.N.T.D. Office in the University Armoury.

(c) **RCAF (Reserve) University Flight.**

In 1948 a Reserve University Flight of the Royal Canadian Air Force was established on the Campus.

The University Flight offers students an opportunity to qualify for Commissions in the RCAF Regulars, Reserves, or Supplementary Reserve. Candidates must be Canadian citizens or British subjects, between the ages of 17½ years and 22 years. They are required to meet RCAF medical standards and to have good academic records. To qualify for a commission in one of the components of the RCAF a Flight Cadet must complete three years of training at the University and at Air Force Units.

While they undergo training, members of the Flight have the status of officers and hold the rank of Flight Cadet. Not only do members qualify for commissions, but they also receive payment for attendance at lectures and summer training. Pay of a Flight Cadet is equivalent to that of a Pilot Officer.

Each year a limited number of Cadets from the University Flight are selected to learn aircrew trades in the University Air Training Plan. Successful trainees gain their wings in three successive summers. In addition to summer flying training, Flight Cadets who train as pilots may, at the discretion of the Officer Commanding, fly with the City of Vancouver 442 (F) Reserve Squadron at least once weekly during the University term.

Full information may be obtained at the RCAF (Reserve) UBC Flight Orderly Room in the University Armoury.

STUDENT ORGANIZATION

Alma Mater Society

President: James J. Sutherland.

Secretary: Kay MacDonald.

Treasurer: Walter Ewing.

The Alma Mater Society with its governing executive, the Students' Council, handles all student activities. Each student on admission 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 a compulsory fee of \$10.00 per student, plus a compulsory levy of \$5.00 for the War Memorial Gymnasium Fund and a compulsory fee of \$1.00 for a Foreign Students' Scholarship Fund, a total of \$16.00.

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 competitions 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. A room-booking office is maintained in the Auditorium Building in cooperation with the University.

Book Exchange

This bureau operates to exchange second-hand books between students in the most convenient manner possible.

Publications Board

The Publications Board has charge of the "Ubyssy", the student newspaper published three times a week; of the "Totem", the Society's year-book; 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

President: Margaret P. Low-Beer.

Secretary: Ed. Pedersen.

The Literary and Scientific Executive comprises the full membership of the following campus clubs which are classified into two groups, Major Clubs and Minor Clubs. The Major Clubs are the Players' Club, Musical Society, Radio Society, Mamooks, Parliamentary Forum and Student Christian Movement. The presidents of these Major Clubs and five presidents of Minor Clubs elected at a general meeting constitute the Major Executive of the L.S.E. The Major Executive controls the activities of the constituent organizations and its chairman represents them on Students' Council.

The Players' Club presents to the public three one-act plays at Christmas, one of which may be entered in the Inter-Varsity Drama Festival, and a full-length play in the spring which tours the province. Membership is open to all students interested in any phase of the drama, and is granted after an interview.

The Musical Society presents its annual operetta in the spring and maintains a strong Glee Club; the orchestra and chorus are under professional leadership. Membership in the Musical Society is achieved through participation in tryouts.

The Radio Society broadcasts several weekly radio programmes. It has its own campus studio in the basement of the Brock Memorial Building. Membership is open to persons interested in script writing, announcing, producing, or technical work.

The Mamooks is the campus service organization which handles the painting of posters, the selling of tickets and the decorations for social functions.

The Student Christian Movement, the Newman Club, the B'nai B'rith Hillel Foundation, the Varsity Christian Fellowship, the Lutheran Students' Organization and the Christian Science Organization provide opportunity for fellowship and worship to adherents of various Christian denominations and the Jewish faith.

The public speaking and debating clubs are the Parliamentary Forum, open to all students, and a member of the Western Universities Debating League featuring the McGoun Cup Debates; and the Women's Public Speaking Club, which provides an opportunity for inexperienced speakers to achieve confidence through mutual criticism and coaching.

Instrumentalists may play in the Varsity Band, the Musical Society Orchestra, the University Symphony Orchestra, or the Pipe Band.

The engineering clubs are the Civil Engineering Club, the G. M. Dawson Club, the Forest Club, the American Institute of Electrical Engineers, the American Society of Mechanical Engineers, the American Institute of Chemical Engineers, the Engineering Institute of Canada, the Chemical Institute of Canada, the Engineering Physics Society, the American Society of Agricultural Engineers, the Society of Automotive Engineers, and the Engineers' Music Club.

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, the Letters Club, the Slavonic Circle, the Classics Club, the Historical Society, the International Relations Club, the Biological Discussion Club, the Mathematics Club, the Physics Society, the Psychology Club, le Cercle Français, the Architectural Club, the Pre-Optometry Club, the Geography Club, the Pre-Dental Club, the Society of Microbiologists, and the Junior Agricultural Institute of Canada.

Other clubs not restricted to any year are the Social Problems Club, the Student C.C.F. Club, the Student Liberal Club, the Student Progressive Conservative Club, the Student L.P.P. Club, the Student Technocracy Study Group, the Student Civil Liberties Union, the United Nations Society, the Chess Club, the Jazz Society, the Music Appreciation Club, the Philatelic Society, the Pharmaceutical Society, the Chinese Students' Club, the Hansard Society, the Scottish Country Folk Dance Club, the Fish and Game Club, the Rover Club, the International Students' Club, the Amateur Radio Operators Association, the Alpha Omega Society, Authors Anonymous, the German Club, the U.B.C. Aero Association, the Botanical Garden Society, and the U.B.C. Dance Club.

Recognition of outstanding members of the L.S.E. takes the form of election to the Literary and Scientific Honorary 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. The object of the Society is to consider and advance the interests of the women students through the promotion of extra-curricular activities. These activities include a welcome to the women of the freshmen class, many social functions such as tea dances, mixers, a Coed Ball, Hi-Jinx, and various other functions throughout the year.

Women's Athletics

The Women's Athletic Association, under the jurisdiction of the Women's Athletic Directorate, includes all the women's athletic clubs of the University and is affiliated with the Women's Amateur Athletic Federation of Canada. The W. A. D., made up of the President of the W. A. A., the Director of Physical Education for Women, two faculty members, and seven 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, and the Grass Hockey Club, which enters two teams in the Lower Mainland League and also plays challenge games.

Women may also join the Badminton, Fencing, Archery, Swimming, Tennis, Golf, Outdoor Ski, and Fish and Game Clubs.

Women's gymnasium classes meet during morning and afternoon 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. Individual awards are also given.

Big Blocks are awarded to outstanding members of women's teams. The Women's Big Block club was organized to maintain a high standard of awards.

Detailed information may be obtained from the "Student Handbook" or from any of the executive of the Women's Athletic Directorate.

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 the Evergreen Conference, consisting of the University of B.C. and seven American colleges of the Pacific Northwest.

The Association is supervised by the Men's Athletic Directorate, made up of the President of the Men's Athletic Association, two faculty members, the Director of Physical Education, the five senior managers of the five major sports, namely, basketball, American football, English rugby, soccer and ice hockey, a representative from minor sports, an Alumni Association representative, a treasurer, a secretary, an ex-officio member of the Publications Board, and the Graduate Manager of Athletics, who sits as a non-voting member.

A certain scholastic standing is required of students wishing to represent the University on any team, and this is sufficiently high to ensure that scholastic achievement is not subordinated to athletic prowess. By this means, athletics at the University are maintained on a sound and healthy level.

Detailed information may be obtained from the "Student Handbook" and from any of the executive of the above sports or the Men's Athletic Directorate.

Fraternities

Fraternities are officially recognized as active student organizations. They are governed by an Inter-fraternity Council composed of representatives of each of the fraternities and a member of the Faculty. Mutual friendship and interest in the University are stressed by the individual fraternities. Membership is by invitation.

Sororities

Sororities, also, are officially recognized by Senate as active student organizations. The Women's Panhellenic Association is established to regulate all matters of common interest to the sororities on the campus, and to advise and foster sorority and inter-sorority relations. Membership in sororities is by invitation.

SUMMER SESSION STUDENTS' ASSOCIATION

1949-50 EXECUTIVE

President: V. Montaldi.

Secretary: D. A. Smith.

Treasurer: Miss G. Owen.

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 made it of major importance on the summer campus.

Dances, banquets, teas, musicals, lectures, variety programmes, athletic tournaments embracing golf, tennis, badminton, horseshoes, soft-ball, and table tennis, all fall within the Executive's 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.

ALUMNI ASSOCIATION

OFFICERS OF THE ALUMNI ASSOCIATION

President: John M. Buchanan, B.A.

1st Vice-President: James A. Macdonald, B.A.

Secretary-Manager (Permanent): Frank J. E. Turner, B.A., B.Com.

Treasurer: Harry A. Berry, B.A., B.Com.

Chairman, Publications Board: Ormonde J. Hall, B.Com., LL.B.

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 contributed to the Alumni-U. B. C. Development Fund or who have paid their annual fee or the life membership fee. Associate membership includes all other graduates of the University or former students at University of British Columbia, Victoria College or old McGill College, who successfully completed fifteen units during attendance.

The aims and objects of the Association are:

- (a) to bring about the unity of all graduates and former students at the University of British Columbia and to further among them the spirit of friendship of undergraduate days;
- (b) to instill in all graduates and former students at 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 similar 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, alumni 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, University of British Columbia alumni, and persons interested in education generally, through the Secretary-Manager. The latter is employed by the Association on a full-time basis.

In the Fall of 1948, a new Society was formed known as the "Trustees of the Alumni-U. B. C. Development Fund." This Society receives donations from Alumni and these donations are income tax exempt. The Alumni Association agreed to appoint a Board of Directors for this annual giving programme and organize annual collections of monies to be used for the general purposes of the University and the encouragement and advancement of education in the Province. Mr. Joseph F. Brown, Jr., B.A., was selected as the first Chairman of the Directors, while the Alumni Secretary-Manager was appointed Executive Secretary.

The Association magazine, formerly called "The Graduate Chronicle", is now called the "U. B. C. Alumni Chronicle", and is issued quarterly throughout the calendar year. "The Chronicle" is mailed to all contributors to the Alumni-U. B. C. Development Fund and to other Association members.

Further information concerning the Association may be obtained through the Alumni Office, Room 201, Brock Memorial Building, U. B. C. (Alma 3044).

Notices of change of address and reports in regard to the activities of members should be sent to the Alumni Office.

VICTORIA COLLEGE

VICTORIA, B. C.

(In affiliation with the University of British Columbia)

Staff

- JOHN M. EWING, B.A. (Queens), D.Paed. (Toronto), Principal, Professor of Philosophy and Psychology.
- JEFFREE A. CUNNINGHAM, B.A. (Queen's), Vice-Principal, Associate Professor of Biology, Botany and Zoology.
- GEORGE P. BLACK, M.A. (Man.), Associate Professor of Classics.
- W. HARRY HICKMAN, M.A. (Brit. Col.), D. Lett. (Univ. of Paris), Associate Professor of French.
- G. REID ELLIOTT, B.A. (Sask.), M.A. (Toronto), Associate Professor of Economics and Commerce.
- WILLIAM H. HUGHES, B.A. (Queen's), B.Sc. (Sask.), Associate Professor of Physics.
- ROBERT T. D. WALLACE, M.A. (Brit. Col.), Associate Professor of Mathematics.
- LEWIS J. CLARK, B.A. (Brit. Col.), M.Sc. (Washington), Associate Professor of Chemistry.
- SYDNEY G. PETTIT, M.A. (Brit. Col.), Assistant Professor of History and Sociology.
- 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.
- RODNEY P. D. POISSON, M.A. (Brit. Col.), Assistant Professor of English.
- W. GORDON FIELDS, B.A. (Brit. Col.), A.M. (Stanford), Assistant Professor of Biology.
- MISS PHYLLIS BAXENDALE, M.A. (Brit. Col.), Assistant Professor of German.
- WILLIAM H. GADDES, M.A. (Brit. Col.), Assistant Professor of Psychology.
- MRS. O. PHOEBE NOBLE, B.A. (Brit. Col.), Assistant Professor of Mathematics.
- CHARLES H. HOWATSON, M.A. (Brit. Col.), Assistant Professor of Geology and Geography.
- G. GRANT McORMOND, M.A. (Sask.), Assistant Professor of English.
- JOHN L. CLIMENHAGA, M.A. (Sask.), Instructor in Physics.
- CLAUDE TREIL, Certificats D'Etudes Supérieures (Sorbonne), Instructor in French.
- MISS DOROTHY M. CRUICKSHANK, B.A. (Brit. Col.), Registrar.
- MRS. E. JOYCE McKAY, B.A. (Man.), Assistant Registrar.
- MISS KATHLEEN R. MATTHEWS, B.A. (McMaster), M.S. (Columbia), Librarian.
- MISS PATRICIA SULLIVAN, B.A. (Sask.), Assistant to the Registrar.

The College at Victoria, B. C., gives instruction in the first two years of the course in Arts and Science (including Commerce). The courses offered are as follows:

First and Second Years

1. The requirements of the First Year consist of 15 units. In the Second Year, students proceeding to a B.A. degree in the General Course must take 15 units; those proceeding to a B.A. degree in an Honours course must take 15 to 18 units, according to the requirements of individual departments. Courses in the first two years must also be chosen in conformity with the requirements (a)-(f) below and the special regulations in notes 1-14. Details of courses are given under the various departments.

Each student must take: Units

- | | |
|--|---------|
| (a) In the First Year English 100 and 101, and in the Second Year English 200 | 6 |
| (b) The first two courses in a language offered for University Entrance, one course in each year.....
(See notes 1-6) | 6 |
| (c) In the First Year Mathematics 101 or the option indicated in Note 10 | 3 |
| (See notes 7-11) | |
| (d) One course chosen from:
Economics 100, 200; Geography 201; History 101, 202, 203, 304;
Philosophy 100, 205; Psychology 100; Sociology 200..... | 3 |
| (See notes 7, 12, 14) | |
| (e) One course chosen from:
Biology 100; Chemistry 100, 101; Geography 101; Geology 200;
Physics 100, 101, 103..... | 3 |
| (See notes 6-8, 12, 14) | |
| (f) At least three courses—not already chosen—selected from the following:
Biology 100; Botany 200; Chemistry 100 or 101, 200, 210; Commerce 251; Economics 100, 200; English 205; French 101, 202, 203; Geography 101, 201, 202; German 90, 100 or 101; Greek 90; Greek A*, 101, 202; History 101, 202, 203, 304; Latin 90, 101, 202; Mathematics 101, 200, 201, 202; Philosophy 100 or 205; Physics 100 or 101 or 103, 200; Psychology 100, 200; Sociology 200; Zoology 200 | 9 or 12 |
| (See notes 4-8 and 11-14) | |

For notes 1-14 see Victoria College Calendar, pages 22-25.

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.

* See note 2.

UNION COLLEGE OF BRITISH COLUMBIA

(United Church of Canada)

VANCOUVER, B. C.

(In affiliation with the University of British Columbia)

Principal

REV. W. S. TAYLOR, M.A., B.D., Ph.D.

Registrar

REV. PROFESSOR S. V. FAWCETT, B.A., B.D.

Union College offers courses of instruction in Theology leading to the degrees of B.D., B.Th. and B.R.E. and to diplomas in Theology and in Religious Education, 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 96).

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. K. E. TAYLOR, O.B.E., M.A., B.D., D.D.

Professor and Librarian

REV. D. P. WATNEY, M.A., B.D., D.D.

Registrar

REV. T. BAILEY, B.A.

The Anglican Theological College offers courses in Theology leading to the Diploma of Licentiate in Theology, the Diploma of Scholar 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 96).

For further information in reference to Faculty, courses of study etc., see Calendar of the College.

THE UNIVERSITY OF BRITISH COLUMBIA

Registration for 1949 - 1950

FACULTY OF ARTS AND SCIENCE	<i>Men</i>	<i>Women</i>	<i>Total</i>
First Year Arts.....	708	331	1039
First Year Home Economics.....		43	43
First Year Physical Education.....	15	6	21
Second Year Arts.....	573	243	816
Second Year Commerce.....	98	13	111
Second Year Home Economics.....		44	44
Second Year Physical Education.....	29	12	41
Third Year Arts.....	508	207	715
Third Year Commerce.....	115	8	123
Third Year Home Economics.....		54	54
Third Year Physical Education.....	21	9	30
Fourth Year Arts.....	511	214	725
Fourth Year Commerce.....	172	9	181
Fourth Year Home Economics.....		50	50
Fourth Year Physical Education.....	25	6	31
Teacher Training.....	175	40	215
Bachelor of Education.....	4		4
Bachelor of Social Work.....	41	64	105
Master of Social Work.....	24	44	68
	3019	1397	4416

FACULTY OF APPLIED SCIENCE	<i>Men</i>	<i>Women</i>	<i>Total</i>
First Year.....	239	1	240
First Year Architecture.....	20		20
First Year B.S.F.....	30		30
Second Year.....	259		259
Second Year Architecture.....	14		14
Second Year B.S.F.....	29	1	30
Third Year.....	373		373
Third Year Architecture.....	26	2	28
Third Year B.S.F.....	69		69
Fourth Year.....	509		509
Fourth Year Architecture.....	18		18
Fourth Year B.S.F.....	79		79
Fifth Year Architecture.....	7		7
	1672	4	1676

NURSING

	<i>Women</i>	<i>Total</i>
First Year	24	24
Second Year	8	8
Third Year	17	17
Fourth Year	14	14
Certificate Course	40	40
	103	103

FACULTY OF AGRICULTURE

	<i>Men</i>	<i>Women</i>	<i>Total</i>
First Year	55	12	67
Second Year	76	7	83
Third Year	68	3	71
Fourth Year	114	15	129
Fifth Year	14	1	15
Occupational Course	12	2	14
	<u>339</u>	<u>40</u>	<u>379</u>

FACULTY OF LAW

	<i>Men</i>	<i>Women</i>	<i>Total</i>
First Year	148	8	156
Second Year	132	8	140
Third Year	144	6	150
	<u>424</u>	<u>22</u>	<u>446</u>

FACULTY OF PHARMACY

	<i>Men</i>	<i>Women</i>	<i>Total</i>
Second Year	46	9	55
Third Year	54	11	65
Fourth Year	59	9	68
	<u>159</u>	<u>29</u>	<u>188</u>

FACULTY OF GRADUATE STUDIES

	<i>Men</i>	<i>Women</i>	<i>Total</i>
Course leading to Ph.D.	20	1	21
Course leading to M.A.	195	32	227
Course leading to M.A.Sc.	33	.....	33
Course leading to M.S.A.	27	6	33
Course leading to M.F.	1	.....	1
Non-Degree Candidates	35	14	49
	<u>311</u>	<u>53</u>	<u>364</u>
TOTALS	<u>5924</u>	<u>1648</u>	<u>7572</u>

Veterans	— Men	1984
	Women	100
Non-Veterans	— Men	3940
	Women	1584
		<u>7572</u>

	<i>Men</i>	<i>Women</i>	<i>Total</i>
EXTRA-SESSIONAL CLASSES 1949-50	33	15	48
BOTANY EVENING CLASS 1949-50	14	7	21
CORRESPONDENCE COURSES	170	87	257
SUMMER SESSION 1949			
All Years	999	431	1430

GIFTS, GRANTS AND BEQUESTS

(a) (September 1, 1948 to April 15, 1949)

THE HAMBER ENDOWMENT

A gift from Chancellor and Mrs. E. W. Hamber, creating the Hamber Endowment, to be used for the purposes of Medical Education\$50,000.00

GRANTS AND GIFTS FOR RESEARCH AND RESEARCH EQUIPMENT

Atomic Energy Control Board:
to the Department of Physics for the Van de Graaf Generator.....\$25,000.00

British Columbia Academy of Sciences:
annual research grant 150.00

Canadian Cancer Society (B. C. Division):
to the Department of Physics for cancer research 15,000.00

Defence Research Board:
to the Department of Physics for research 14,950.00

National Cancer Institute of Canada:
to the Department of Physics for cancer research 3,300.00

National Research Council:
to the Departments of Biology and Botany, Chemistry, Dairy
Bacteriology, Mining and Metallurgy, and Physics for various
research projects 38,270.00

North American Cyanamid Ltd. (Niagara Falls):
for a special project in Horticulture 800.00

Provincial Department of Agriculture:
(a) for investigational work by the Faculty of Agriculture and
the Provincial Department in seed cleaning and potato
harvesting machinery 1,500.00
(b) special contribution to the Faculty of Agriculture for con-
ference expenses 400.00

GRANTS AND GIFTS FOR CHAIRS OF INSTRUCTION, LECTURESHIPS, COURSES, SPECIAL FACILITIES AND EQUIPMENT

American Council for Learned Societies (Pacific Coast Committee
for the Humanities):
travel and study grant for a member of the Department of
Music\$ 750.00

Brettell Electric Company Ltd.:
for the construction of the Art Gallery 250.00

British Columbia Electric Railway Company Ltd.:
for the lighting of the Art Gallery 1,500.00

British Columbia Forest Products Ltd.:
for instruction in Forest Entomology 5,000.00

Canadian Association for the Advancement of Pharmacy:
for assistantships in Pharmacy 600.00

Canadian Club of Vancouver:
for the Canadian Club Lectureship 500.00

Cariboo Gold Quartz Mining Company Ltd.: for equipment in Geology.....	\$ 100.00
Department of National Health and Welfare, Ottawa: to the Departments of Bacteriology and Preventive Medicine, and Nursing and Health, for extension of facilities and training of personnel in public health.....	19,500.00
Fiddes, Mr. Robert: for the Chair of Music.....	5,000.00
Fisher, the estate of the late May C.: for work in Aeronautics.....	750.00
Gibson, Mr. David (Robert Simpson Company, Toronto): for Slavonic Studies.....	100.00
Lady Davis Foundation: for a special appointment in Geology and Geography and for expenses in connection with an appointment in Mathematics.....	3,500.00
Marwell Construction Company Limited: for the purchase of visual material in Architecture.....	600.00
MacMillan, Mr. H. R., C.B.E.: for the purchase of the Raley Collection for the Anthropological Museum.....	5,000.00
MacMillan Export Company Ltd., the H. R.: for instruction in Forest Mensuration.....	4,000.00
Pacific Coast Copper Company Limited: to the Department of Geology for special equipment.....	100.00
Rockefeller Foundation (New York): to Slavonic Studies for the purchase of audio-visual aids.....	1,000.00
Shell Oil Company (Vancouver): for equipment in Chemistry.....	250.00
Stevens, Mr. W. L.: to the Department of Physics for special equipment.....	75.00
Vancouver Board of Trade, Advertising and Sales Bureau: to the Department of Commerce for special courses in Adver- tising.....	1,000.00

MISCELLANEOUS

British Columbia Electric Railway Company Ltd.: membership for the University in the International Conference of Large Electric Systems (C.I.G.R.E.).....	50.00
Community Arts Council of Vancouver: further contribution to the Housing Survey.....	57.12
Imperial Order Daughters of the Empire: for the nursery play school at Little Mountain.....	700.00
Pemberton Women's Institute (Pemberton): for Home Economics.....	10.00
Ravenhill, Dr. Alice: for Home Economics.....	10.00
Stewart, Mrs. Douglas M.: for the President's Fund.....	200.00
Victoria Home Economics Association (Victoria): for Home Economics.....	25.00
Anonymous: for the President's Fund.....	40.00

GIFTS FOR CAMPUS DEVELOPMENT

Eddie, H. M. and Sons:

five hundred hybrid tea and hybrid polyantha roses to plant in the new "display and experimental rose garden".

Fyfe-Smith, Mr. and Mrs.:

perennial plants for the rock garden.

Students, Faculty of Agriculture:

design fountain and planting in the Library reflection pool, in appreciation of the work of Professor Frank E. Buck in landscaping the University Campus.

Vancouver Board of Park Commissioners:

shrubs for campus use and teaching purposes.

Anonymous:

three bronze plaques for use or attachment at suitable points on the campus to deal with the establishment of the University, the uniqueness and grandeur of the present site, and the students' gifts of buildings.

GIFTS TO THE LIBRARY

Bell, Mrs. Gordon: approximately 50 volumes of foreign publications.

Canadian Medical Association (Montreal): a large number of medical books.

CIBA (Chemistry and Allied Business): bound volumes of the CIBA Review, Zeitschrift, etc.

Conklin, Dr. J. S.: a large number of medical books.

Hope, Mr. C. E. (Milner, B. C.): Journal of the Royal Society of Arts, vols. 55 to 96.

Imperial Oil Company (Vancouver): handbooks, tables, and manuals.

Larsen: Prof. Thorleif: a large number of volumes on medicine, drama, etc.; various transactions, periodicals, etc.

Manley, Mr. Leander: rare copy of the London Daily Mail, printed in gold ink to commemorate the Diamond Jubilee of Queen Victoria.

Miller, Mr. David Hunter (Victoria): United States Department of State Papers relating to foreign relations, 1861-1914, totalling 65 volumes, some rare and out-of-print.

Miller, Mr. Leonard: miscellaneous collections of volumes and pamphlets.

MacMillan, Mr. H. R., C.B.E.: various pamphlets published by the Newcomen Society, and other volumes.

Stanford University Library (Palo Alto, California): volumes and numbers of the University series on Biology, Geology, etc.

Wood, Professor F. G. C.: journals relating to the theatre, including the Theatre Magazine.

Other generous gifts from: Agriculture, Faculty of, U.B.C.: Allan, Mr. J. N.; American Consul-General (Vancouver); American Dairy Science Association (Corvallis); American Feed Manufacturers' Association (Chicago); Archibald, Mrs. E. H.; Architecture Department, U.B.C.; Beardall, Miss G. (Salmon Arm); Bell, Dr. F. C.; Bibliotheque de la Banque de Syrie (Paris); Blackwell's Ltd. (Oxford); Blagdon-Phillips, Mr. N. D.; British Columbia Electric Railway Company Ltd.; British Columbia Lumber Manufacturers' Association; Bryce, Mr. Murray D.; Buckland, Mr. F. M. (Kelowna); Burdick, Mr. U. L. (Cheltenham,

Mass.); Cambridge University (Cambridge, Eng.); Canadian Blower & Forge Company (Kitchener, Ont.); Canadian Engineering Publications (Montreal); Canadian Institute of International Affairs (Toronto); Canadian Jersey Breeder Ltd.; Carnegie Institute of Washington; Christie, Mr. Hugh (Regina); Christopherson, Mr. A.; Chronicle Publishing Company (Oliver); Clarke, Irwin & Co. (Toronto); Claudet, Mr. H. H. (Victoria); Cock, Miss Eleanor F.; Colgrave, Mr. Sydney (Chase); Cowan, Mr. M. M.; Doe, Mr. W. A.; Dominion Brewers' Association (Ottawa); Donnelley, Mr. T. C. (Chicago); Duncan, Mr. George; Empire Club of Canada (Toronto); Extension Department, U.B.C.; Food Research Institute (Stanford University); Forestry Department, U.B.C.; Forward, Prof. Frank; Foundation for Foreign Affairs (Washington, D.C.); French Government; Gage, Dean W. H.; Geological Society of America (New York); Gibson, Mr. W. W. (San Francisco); Guthrie, Prof. P. C. F.; Herschdorffer, Dr. M. (Zurich); Hoffars' Ltd.; Imperial Bureau of Biological Control (Belleville); Inspector of Schools (Point Grey District); International Association of Game, Fish, and Conservation Commissioners; International Nickel Company (New York); International Paper Company (Montreal); Institut Danois des Echanges (Copenhagen); Institute Panamericano de Geografia e Historia; Jewish Public Library (Montreal); Jimeno, Prof. E. (Madrid); Johnson, Mr. G. H. F.; Kelly, Mr. L. V.; Kemp, Dr. W. N.; Klinck, Dr. L. S.; Kraks Legat, Nytorv (Copenhagen); Lamb, Dr. W. K.; Layfield, Mr. H. A.; Lett, Mrs. Sherwood; Lloyds' Register of Shipping (Vancouver); Main, Mr. Robert (Nelson); Metford, Dr. J.; Midwest Livestock Press (Hutchinson, Kansas); Millbank Memorial Fund (New York); Morgan, Prof. S. C.; Moresby-White, Miss Ann (Dewdney); Mott, Dr. John R. (Orlando, Fla.); Murdoch, Dr. D. C.; Murdoch, Mr. R. (Brooklyn, N.Y.); McCloy, Mr. T. R.; McDonald, Miss Ruth E.; MacKenzie, Dr. N. A. M.; McQueen, Miss Kate; McLennan, Mr. Lester W. (Oleum, Calif.); National Liberal Federation of Canada; Neil, Mrs. Rupert; Nelson, Mr. Robert S.; Nemetz, Mr. Nathan; Newton, Dr. R. (Edmonton); Non-Marine Underwriters of Lloyds' (London); Orange Press (Winter Park, Fla.); Paines, James C. (Librarian, Royal Institute of British Architects, London); Patterson, Mr. D. S. L. (Toronto); Paul, Mr. J. David; Peel, Mrs. K. R.; Perkins, Mr. Ronald A.; Players' Club, U.B.C.; Ragatz, Prof. L. (St. Louis); Reed College, (Portland, Ore.); Reprint Society of Canada (Toronto); Ross, Mr. Allan; Royal Canadian Institute (Toronto); Royal Institute of British Architects (London); Saunders, S. J. Reginald, Ltd.; Seabury-Western Theological Seminary (Evanston, Ill.); Schwitzer, Mrs. E. V.; Scott, Mrs. A. H.; Sedgewick, Dr. G. G.; Seyer, Dr. W. F.; Smith, Mr. P. B.; Social Work Department, U.B.C.; Soward, Prof. F. H.; Spencer, Prof. J. G.; Stewart, Mr. L. I.; Swiss Office for the Development of Trade (Lausanne); Taylor, Mr. John P. (London, Eng.); Taylor, Dr. W. H. (Washington, D.C.); Tennant & Co., Charles (Toronto); Tipografica Editora Argentina (Buenos Aires); Transvaal Chamber of Mines (Johannesburg); Ukrainian National Federation, Vancouver; United Church Publishing House (Toronto); United Kingdom Information Office; University of Toronto School for Social Work; U. S. Pulp Producers' Association (New York); Vancouver Iron Works; Van Nostrand Company (Toronto); Venereal Disease Education Institute (Raleigh, N.C.); Volkoff, Mrs. G. M.; Walsh, Mr. Anthony (Vernon); Watters, Dr. R. E.; Williams, Dr. M. Y.; Wood, Prof. F. G. C.; Wood, Gundy & Company (Toronto); Anonymous gifts of various books, pamphlets, etc.

GIFTS TO THE LAW LIBRARY, FACULTY OF LAW

- Bain, Mr. A. H.; miscellaneous periodicals.
Black, Dr. Edgar: Old Canada Statutes.
Briggs, Mr. Joseph: Western Weekly Reports (1920-1927) and miscellaneous text-books.
Canadian Law List Publishing Company (Toronto): miscellaneous Irish Reports, text-books and Statutes.
Cassady, George L., K.C. (New Westminster): Law Journal Reports, vols. 35-83.
Chalmers, Mr. J.: Hansard, 1948.
Davis, Hossie, and Company: Proceedings Canadian Bar Association (25 vols.).
Douglas, Symes, and Brissenden; miscellaneous B. C. Reports, Canada Law Reports, and Canadian Bar Review.
Doull, Mrs. A. J.: text-books belonging to Lt. Comdr. J. R. Doull, R.C.N.
Duncan, Mr. George: copies of British Columbia Reports, Canadian Law Review, Canadian Bar Review, Western Weekly Reports, and Advocate.
Harper, Mr. A. M.: Texts, Statutes, and Debates.
Law Society of British Columbia: two sets of B. C. Reports.
Lawson, Lundell, and Lawson: Revised Statutes of B. C.; 1936 and Annuals.
Meredith, Mr. Elmore: Current B. C. Reports, Canadian Bar Review, and Canada Law Reports.
Montgomery, McRae, and Montgomery: Current Reports.
MacIntyre, Dr. M. M.: Statutes of Manitoba, 1948.
MacKinnon, Mr. J. W. (Prince Edward Island): Statutes of P. E. I. for 1930-48 inclusive.
McTavish, Mr. D. S. (Salmon Arm): The Jurist.
Nemetz, Mr. N. T.: text-books.
Russell and Du Moulin: Statutes, Proceedings of the Canadian Bar Association.
Stevenson, Mr. R. C. (Montreal): History of Lloyd's.
Walkem, Mr. Knox: American Bank Attorneys, June, 1947.
Wilson, Mrs. James: miscellaneous British Columbia and Canadian Law Reports.
Yates, the late Mr. Stuart: a number of rare and valuable volumes on History and Institutions.
Attorney-General for Alberta: Revised Statutes of Alberta 1942 with Annual Statutes, 1943-47.
Attorney-General for Manitoba: Revised Statutes of Manitoba 1940 with annual volumes, 1940-47.
Attorney-General for Ontario: Statutes of Ontario, 1947-48.
Attorney-General for Prince Edward Island: Statutes for Prince Edward Island, 1930-48.

MISCELLANEOUS GIFTS**Agricultural Engineering**

- Air-Seal Western Limited: vacuum flask for sub-zero testing of lubricating oils.
American Can Company: can-closing machine.
Continental Can Company: can-closing machine.

Fleck Brothers Ltd.: cut-away sections of refrigerator compressors, valves, etc.

Nilnoc Company Ltd.: anemometer for wind studies.

Anthropological Museum

Borden, Dr. C. E.: archeological specimens.

Buchanan, Mr. J. M.: collection of Indian baskets and pipes.

Carl, Dr. G. C. (Provincial Museum, Victoria): Mexican bullfighter implements.

Clough, Mrs. Nancy (Duncan): African artifacts.

Cooper, Mrs. J. B. G.: model double Papuan canoe.

Darby, Mrs. G. E.: loan of Bella Bella and Kwakiutl cultural material.

MacMillan, Mr. H. R., C.B.E.: collection of stone pipes and other Indian artifacts.

Nation, Mr. J. C.: carving of bear.

Provincial Museum (Victoria): African artifacts.

Raley, Dr. G. H.: Kwakiutl canoe and other objects.

Read, Professor S. E.: photographs of Skeena River District.

Scott, Mrs. Allan A.: B. C. Indian artifacts, hammers, beads, etc.

Taylor, Mr. E. Jeremy: Northern B. C. type of Adze.

White, Mr. A. L. (Bellingham): stone figure found near Sumas.

Architecture

Bain, Mrs. A. H.: artists' colours and instruments and picture frames.

Barrett Company Ltd. (Montreal): working model of roof flashing and manuals for students.

Hobbs Glass Company Ltd. (London, Ont.): glass blocks and sample glass; student binders.

Townley, Mr. Fred: two plaster heads (Leonardo da Vinci and Michael Angelo).

Biology and Botany

Provincial Department of Agriculture (Victoria): 16,000 herbarium sheets of B. C. plants collected and prepared by Mr. J. W. Eastham.

Civil Engineering

Canadian Institute of Steel Construction (Toronto): 112 copies of hand-books of the American Institute of Steel Construction.

Commerce

Abbott, Mr. H. P.: 300 copies of address given at Princeton University.

B. C. Bond Dealers' Association: Moody's Industrials and supplement.

Boucher, Mr. D. A.: copies of issues of Fortune.

Figgis, Mr. D. W. (American Can Co., N.Y.): copies for graduating students of commencement address delivered at Stevens Institute of Technology.

King, Mr. Earl C.: complete set of Executive Manuals issued by La Salle University Extension at Chicago, consisting of 100 manuals in 48 volumes.

Sprange, Mr. A. E.: several text-books on investments.

Tindle, Mr. Arthur (Dun & Bradstreet of Canada): The Sinews of American Commerce (Foulke).

Trans-Canada Investment Corporation Ltd.: 18 copies of Portfolio of Trans-Canada Investment Corporation Ltd.

Electrical and Mechanical Engineering

English Electric Company of Canada Ltd. (through Mr. E. Wolstencroft, district manager), modern type single phase distribution transformer.

Precise Engineering Company (through Mr. Walter Fahrni): one reciprocal electric hand drill attachment.

Stevens, Mr. W. L. (New Westminster): model of Puntledge Hydro-Electric Power House in glass case (built by John H. Boffy, Senior Operator, and his son).

Yuill, Mr. A. C. R.: vols. 47-52 of the Transactions of the American Institute of Electrical Engineers.

Forestry

B. C. Forest Products Limited: wood samples and fire control planning maps.

Bloedel, Stewart, and Welch (Port Alberni): flow diagrams of sulphate pulp mill.

California Forest and Range Experimental Station (Placerville, Calif.): collection of seed of species of conifers for use in forest nursery and arboretum.

Canadian Forest Products Limited: wood samples.

Coe, Mr. Alan: set of lantern slides showing logging operations.

Davidson, Prof. John: bulletins and pamphlets.

Department of Lands and Mines (Alberta): 200 trees from Alberta Government.

Finning Tractor and Equipment Co.: fifteen slides of logging systems.

International Plywood Company Ltd. (Gatineau, Que.): sample boards of eastern Canadian hardwoods.

Kania, Mrs. J. E.: Torrey pine seeds.

L. & T. Sawmills: wood samples.

Mulholland, Mr. F. D. (Canadian Western Lumber Co., Ladysmith): tree seed.

Pacific Logging Congress (Portland, Oregon): eight copies of loggers' handbook.

Shier, Mr. Morley: handbook on explosives.

Skagit Iron & Steel Works (Sedro-Woolley, Wash.): series of folders describing logging systems and machinery.

Southeastern Forestry Experimental Station (Asheville, N.C.): fuel moisture sticks and danger meter.

United States Forest Service (Portland, Oregon): fire prevention posters.

Universal Box Company Ltd.: wood samples.

Western Shook Mills Ltd.: wood samples.

Wright, Mr. T. G.: stem analysis sections from Douglas fir.

Yale University (School of Forestry): Yale Forest School Bulletins (52 vols.); bound volumes (32) of Indian Forester (1875-1911).

Geology and Geography

- Baillie, Mr. George H. (Vice-President, Western Division, C. P. R.): model of Glacier Park, Selkirk Mountains, with case and table.
Whiting, Mr. Frank: suite of telluride specimens.

Home Economics

- Abbott, Mrs. J. M. (Victoria): bound volumes (5), *The Ladies' Treasury* (1877-1882).
Abel, Miss M.: copies of food manuals, pamphlets, etc.
B. C. Packers' Ltd.: twelve tins of tuna fish.
Bertois, Mrs. M. L. (Hamilton): texts and illustrative pamphlets.
Booker, Mrs. Constance (Penticton): samples of lace, fans, prints, etc.
Castley, Mrs. W. J. (Duncan): one year's issue, *The Ladies' Friend* (1865).
Delnor Frozen Foods (New Westminster), through Mr. H. B. Pearson, manager: Universal Frozen Food Cabinet; frozen food cook-book.
Elliott, Miss Isabell: illustrative material.
Hood, Dr. Grace Gordon (Winnipeg): illustrative material.
Hoover Company, Ltd., through Mr. H. E. Wilson: Hoover vacuum cleaner (1948 model) and attachments.
Letson and Burpee, Ltd., through Mr. Hague: three combination pressure and steam-jacket saucepans; and steam-jacket pressure saucepan.
Parent Teacher Federation of British Columbia: a Mason & Risch Piano, a radio-phonograph, and \$70 toward the purchase of a carpet, all for the home-management house.
Pineo, Mrs. C. M. (Port Alberni): sample of lace.
Rogers, Mrs. Jonathan: framed photograph of the late Jonathan Rogers, to be placed in the new Home Economics Building.

Horticulture

- Associated Fuels (Mitchell Island): twenty units of sawdust.
Buckerfield's Ltd.: one-half ton of fertilizer.
Dominion Experimental Station (Saanichton): collection of pear varieties.
Dominion Experimental Station (Summerland): collection of grape and apple varieties.
Insulation Industries Ltd.: fifteen bags of Terralite.
Mabee, Mr. G. E.: box of Okanagan apple varieties.
Pilkington Glass Company Ltd. (Vancouver): one set of demonstration glass cloches.
Provincial Staff, through Mr. W. H. Robertson, Provincial Horticulturist: collections of fruit varieties for studies in systematic pomology.

Mining and Metallurgy

- British Columbia Electric Railway Company, through Mr. T. Ingledow, Vice-President: three 25 K.v.a. transformers.
Electro Manganese Corporation (Knoxville, Tenn.): ten pounds of electrolytic manganese.
Ker and Ker, through Mr. Miller: model of Whitewater Mine.

Pharmacy

- Desbergers Ltd. (Montreal): prescription specialties.
Hoffman-La Roche Ltd. (Montreal): prescription specialties.
Jamieson & Co. (Windsor): prescription specialties.

Mowatt & Moore (Montreal): prescription specialties.

Rougier Freres (Montreal): prescription specialties.

Wampole Company Ltd. (Perth, Ontario): prescription specialties.

Slavonic Studies

National Council for Canadian-Soviet Friendship (Vancouver Branch): various Russian books.

Social Work

B. C. Indian Arts and Welfare Society: totem pole for student reading-room.

Edwards, Miss Amy: bound volumes of periodicals, and back copies of Survey Midmonthly and Survey Graphic.

Mess, Miss A. L. (Vernon): magazines, periodicals, and books useful for research.

Morrison, Mr. A. O.: books and pamphlets for Library.

Zoology

Atlantic Biological Station, through Mr. J. A. C. Medcof, (St. Andrews, N. B.): fish and invertebrate specimens.

Beebe, Mr. F.: specimens of mammals, birds, reptiles.

Dorkrill, Mr. A. H. (Bulkley Valley Collieries): fossil mammal bones.

Hart, Dr. J. L. (Pacific Biological Station): fish specimens.

Jobin, Mr. L. (Williams Lake): mammal specimens.

Leech, Mr. H. B. (California Academy of Sciences): case of tropical beetles.

Provincial Game Department (Victoria): 250 Kamloops trout; bird and mammal specimens; complete series Progressive Fish Culture, Washington, D. C.

General

Aero Survey Ltd. (Vancouver): cover photo for the A.A.A.S. Convention Programme.

Eaton, T. Company Ltd. (Vancouver): ten paintings by John Innes and G. H. Southwell, of incidents in B. C. History.

Gideon Bible Association: eight copies of the Bible for reading rooms.

Kirk, Mrs. Thomas H.: group of paintings to be given in perpetuity and to be suitably inscribed as "The Thos. H. Kirk Memorial Collection."

McKechnie, Mrs. R. E.: silver tray for display purposes.

Ridington, Mr. Bernard: portrait of the late John Ridington, former University Librarian.

Schilder, Dr. Gustav: original Fred Varley canvas.

Vancouver Tourist Association: mailing and payment of postage of programmes to 5000 members of the American Association for the Advancement of Science (in connection with meetings of Pacific Division at the University of British Columbia in June, 1949).

Special Acknowledgment

Pearce, Dr. J. A. (Dominion Astrophysical Observatory, Victoria): for naming the new binary-star system, investigated by himself, after the University of British Columbia (U. B. C.).

MEDALS, SCHOLARSHIPS, PRIZES, BURSARIES AND SPECIAL FUNDS

Note: If not otherwise stated, the amount given is the annual value of the award.

New Awards

Alpha Gamma Delta Sorority (Delta Zeta Chapter):	
bursary for women students	\$ 50.00
Alpha Phi Sorority (Beta Theta Chapter):	
bursary for women students	50.00
Baynes Manning Ltd.:	
bursary for engineering students	250.00
Bene, Eva and John:	
to provide a scholarship in Psychology for three years, a donation of	500.00
Beta Sigma Phi Sorority (Xi Alpha Chapter):	
bursary for women students	50.00
British Columbia Electric Railway Company Limited:	
an annual grant of \$5000 to provide	
(1) annual graduate engineering scholarship	600.00
(2) annual undergraduate engineering scholarships	600.00
(3) annual undergraduate proficiency scholarships	1,000.00
(4) annual special scholarships	1,000.00
(5) annual graduate scholarships in Arts, Commerce, Law and Social Work	1,000.00
(6) annual grant to the Agricultural Institute of Canada for a fellowship in Agriculture	800.00
British Columbia Psychological Association:	
bursary for students in Psychology	50.00
Cunningham, Mr. Alvin:	
bursary for students in Pharmacy	200.00
Delta Gamma Sorority (Alpha Phi Chapter):	
contribution to special emergency fund for women students	50.00
Delta Kappa Epsilon Fraternity (Phi Alpha Chapter):	
bursary for men students	50.00
Delta Upsilon Fraternity (B. C. Chapter):	
bursary for men students	50.00
Gault Brothers Limited:	
commemorating the Company's fiftieth year in British Columbia, a donation of \$25,000.00 to provide annual scholarships in Commerce for a period of ten years, as follows:	
(1) three annual scholarships of \$300 each for students entering Fourth Year Commerce	900.00
(2) three annual scholarships of \$300 each for students entering Fifth Year Commerce	900.00
(3) an annual graduate scholarship in Commerce, open to students in any Canadian University, but awarded by the University of British Columbia, for study at any approved institution	700.00
Kappa Kappa Gamma Alumnae:	
(1) annual contribution to set up a trust fund, to provide an annual bursary of	100.00
(2) contribution to a special emergency assistance fund for women	100.00

Kappa Sigma Fraternity (Epsilon Epsilon Chapter):	
bursary for men students	\$ 50.00
Klein, Mr. I. J.:	
donation to provide a prize of \$100 annually for five years	500.00
Minister of Switzerland (Ottawa):	
book prize for proficiency in French	
McGill Women Graduates Society (Vancouver):	
The Euphemia Laurence McLeod Raphael Bursary for women students proceeding to McGill University	100.00
Macmillan Company of Canada Ltd. (Publishers, Toronto):	
an annual prize for five years for the course in creative writing	50.00
Parent Teachers Federation of British Columbia:	
prize for a student graduating in Home Economics	100.00
Phi Gamma Delta Fraternity (Pi Gamma Chapter):	
bursary for men students	50.00
Provincial Department of Agriculture:	
donation to provide prizes in Architecture for design problems of farm homes	250.00
Road Builders and Heavy Construction Association:	
(1) scholarship for Civil (highway) Engineering	250.00
(2) prize for Civil (highway) Engineering	50.00
Rotary Club of New Westminster:	
bursary for students from New Westminster	250.00
Sigma Phi Delta Fraternity (Theta Chapter):	
bursary for men students in Applied Science	50.00
Sperry Phillips Memorial Fund:	
a fund donated by the friends and associates of the late Sperry S. Phillips, B.S.A., to provide an annual bursary of \$100 for students in Agriculture or Home Economics. Total fund	3,520.00
Thompson, Mr. Charles J.:	
donation to provide prizes in Architecture	1,000.00
Trans-Canada Investment Corporation Ltd.:	
scholarship for students in Commerce	150.00
Vancouver Quota Club:	
The Elsie Scobee Carpenter Memorial Bursary for women students in Commerce or Economics	100.00
Vancouver Sun:	
training at the Edith Adams' Cottage for one year with an allowance of \$100 a month for a student graduating in Home Economics	1,200.00
Young, Mr. William Brand:	
medal for special project in Architecture	
Zeta Psi Fraternity (Sigma Epsilon Chapter):	
bursary for men students	50.00

Special Contributions

Bollert, the Misses Florence and Grace:	
contribution to the Mary L. Bollert Fund	250.00
Kappa Kappa Gamma Mothers' Club:	
contribution to Dean of Women's Fund	75.00
Kappa Kappa Gamma Sorority:	
contribution to Dean of Women's Fund	50.00

Lanning, Miss Mabel: contribution to the Dean of Women's Fund.....	\$ 5.00
University of Toronto Alumnae (Marion McElhanney Memorial Bursary): annual contribution to the Dean of Women's Fund.....	50.00
Anonymous: contribution to special bursary funds.....	110.00
Anonymous: contribution to special bursary funds.....	100.00

Existing Awards Increased in Value

Ingledow, Mr. T.: annual prizes for Electrical Engineering.....	150.00
United Empire Loyalists Association (Vancouver Branch): History Medal and a prize of.....	35.00

Established Awards

Alaska Pine Company Ltd.—scholarships.....	600.00
Alberta Meat Company Ltd.—bursary.....	50.00
Alliance Francaise—bursary.....	50.00
Allied Officers' Club Auxiliary (trust fund)—bursary.....	75.00
American Woman's Club—bursaries.....	200.00
Architectural Institute of British Columbia—medals and prizes.....	200.00
Armstead, Mr. and Mrs. Daniel—scholarship and prize.....	300.00
Association of Professional Engineers—prizes.....	125.00
Automotive Transport Association of British Columbia—scholar- ship.....	150.00
B. C. Drugs Limited—scholarship.....	150.00
B. C. Tree Fruits Limited (Kelowna)—prizes.....	300.00
Bell, Mrs. Angela (trust fund)—bursary.....	75.00
B'nai B'rith Chapter No. 77—scholarship.....	50.00
B'nai B'rith Hillel Foundation, Vancouver—scholarships.....	250.00
Boag, Alan (from the Trustees of the Estate)—scholarship.....	250.00
Bolocan, Mr. and Mrs. J. L.—prize.....	25.00
Bostock Memorial Prize.....	25.00
Britannia Mining and Smelting Company Ltd.—scholarship.....	250.00
British Columbia Cooperative Seed Growers' Association— bursary.....	100.00
British Columbia Daily Newspapers Association—scholarship.....	200.00
British Columbia Drug Travellers' Association—bursary.....	200.00
British Columbia Fruit Growers' Association—scholarship.....	125.00
British Columbia Loggers' Association—bursary.....	225.00
British Columbia Lumber Manufacturers' Association—prizes.....	175.00
British Columbia Packers Limited—fellowship.....	1,200.00
British Columbia Sugar Refining Company Ltd.—scholarships.....	2,500.00
British Columbia Teachers' Federation—scholarship.....	100.00
British Columbia Telephone Company Ltd.—scholarships.....	2,500.00
Bruce, the late Hon. R. Randolph (trust fund)—scholarship.....	200.00
Burbidge, Mr. P. W.—scholarships.....	250.00
Canada Law Book Company—book prize.....	25.00

Canadian Association for the Advancement of Pharmacy— scholarships	\$ 200.00
Canadian Association for Health, Physical Education and Recreation—scholarship	50.00
Canadian Forest Products Ltd.—scholarships and prizes	500.00
Canadian Forest Industries Entomological Scholarships	400.00
Canadian Industries Ltd.—fellowship	750.00
Canadian Pulp and Paper Association, Western Branch—fellow- ship	1,000.00
Cariboo Gold Quartz Mining Company Ltd.—scholarship	100.00
Carswell Company Ltd. (Toronto)—book prizes	60.00
Cayley, the late Mrs. (trust fund)—scholarship	100.00
Chemical Institute of Canada—book prizes	50.00
Cohen, Mr. S. J. (trust fund)—bursary	150.00
Consolidated Mining and Smelting Company Ltd.—fellowship	1,200.00
Convocation, University of British Columbia—prize	50.00
Cunningham, Mr. G. T.—scholarship and prize	150.00
Day, Robert S. & Son, Ltd.—bursary	150.00
Delta Gamma Fraternity—bursaries	175.00
Dicks, W. Jack H. (trust fund) bursary	150.00
Dunsmuir Scholarship (trust fund)	150.00
Engineering Institute of Canada—prize	25.00
Engineering Institute of Canada (Vancouver Branch)—prize	25.00
Entomological Society of British Columbia—prize	15.00
Faculty Women's Club—scholarship and bursary	200.00
Frosst, Charles E. Company, Ltd.—prizes	225.00
Gamma Phi Beta Sorority (Alpha Lambda Chapter)—bursary	50.00
General Construction Company Limited—scholarships	500.00
Gladstone Chapter No. 6 C. J. Order of Ahepa—prize	100.00
Governor General of Canada—His Excellency's Gold Medal	
Hobbs Glass Company Ltd.—scholarship	250.00
Hogarth, Major General D. M. (Toronto)—scholarships	250.00
Holland, Laura (trust fund established by friends)—scholarship	100.00
Horner, Frank W., Ltd. (Montreal)—gold medal	
Houghland, Mr. C. D.—prize	100.00
I. O. D. E. (trust fund)—scholarship	100.00
I. O. D. E. (Admiral Jellicoe Chapter)—bursaries	100.00
I. O. D. E. (Sir Charles Tupper Chapter)—bursary	50.00
I. O. D. E. (Triple Entente Chapter)—bursary	75.00
I. O. D. E. (Worthington Memorial Chapter)—bursary	100.00
Inglis Company Ltd., The John (Toronto)—scholarships	250.00
Jones, Mr. J. R. J. Lewellyn—prize	50.00
Kelly, Mr. William N.—prize	15.00
Kelly Douglas and Company Ltd.—scholarship	300.00
Khaki University and Y. M. C. A. (trust fund)—bursaries	500.00
Kirk, Mrs. Thomas H.—scholarship	100.00
Kiwanis Club of Vancouver—gold medal, scholarship and prize	200.00

Klein, Mr. I. J. (trust fund)—scholarship.....	\$ 100.00
Ladner, Mr. Leon J. and Family (trust fund)—scholarship.....	300.00
Lady Laurier Club—bursary.....	100.00
Lambert, Brigadier Noel D.—scholarship.....	200.00
Lauder Mercer and Company Ltd.—bursary.....	250.00
Law Society of British Columbia—gold medal and prize.....	200.00
Lefevre, the late Mrs. J. M. (trust fund)—medal and scholarship.....	150.00
Lions Club (Vancouver Central)—fellowship.....	1,200.00
Lipsett, Mrs. Mary C.—bursary.....	300.00
Mallinckrodt Chemical Works Ltd.—prize.....	25.00
Mathematics, Department of (U. B. C.)—the Daniel Buchanan Scholarship	100.00
Merck & Company Ltd. (Montreal)—book prizes.....	
McGill Graduates Society of B. C. (trust fund)—scholarship.....	125.00
McHattie, Mr. C. T.—bursary.....	300.00
McKee, Mrs. D. A. (trust fund)—prize.....	30.00
McLean, Mr. and Mrs. J. S. (Toronto)—bursaries.....	1,000.00
MacMillan, Mr. H. R.—loan fund maintained.....	
National Council of Jewish Women, Vancouver Section—bursary.....	100.00
National Paper Box Company Ltd.—bursaries.....	400.00
Native Daughters of British Columbia—scholarship.....	50.00
Nicholson, the late Dr. F. J. (trust fund)—scholarships.....	1,000.00
Norgan, Mr. G. W.—scholarships and prizes.....	1,000.00
Northern Electric Company Ltd.—prize.....	100.00
Northern Peat Moss Company Ltd.—prize.....	100.00
Pacific Meat Company Ltd.—bursary.....	200.00
Pacific Mills Ltd.—scholarship.....	250.00
Pattison, Mr. J. W.—bursaries.....	200.00
P. E. O. Sisterhood, Vancouver Chapter—bursary.....	150.00
Pharmaceutical Association of the Province of British Columbia —scholarship and prize.....	150.00
Phi Delta Delta Legal Sorority—Helen Gregory MacGill Loan Fund	
Players' Club Alumni—scholarship.....	50.00
Pop, Mr. R. J.—scholarship.....	150.00
Powell River Company Ltd.—scholarship.....	700.00
Price, Waterhouse & Co.—scholarship.....	250.00
Primrose Club (trust fund)—the Hon. R. L. Maitland Memorial Scholarship	150.00
Pringle, the Flying Officer Reverend George Robert (trust fund established by friends for memorial bursary).....	200.00
Province, The Vancouver Daily—scholarship.....	250.00
Provincial Council of British Columbia, Canadian Daughters' League—bursaries	200.00
Provincial Department of Health and Welfare (Health Branch) —prizes	100.00
R. C. A. F. Veterans' Fund (established by the Wartime Conval- escent Homes, War Charity Fund, Inc.)—bursaries.....	300.00

Rotary Club of Vancouver—bursaries.....	\$ 1,000.00
Royal Institution (trust fund)—scholarships.....	1,600.00
Ryckman, the late Nancy E. (trust fund)—scholarships.....	180.00
Shaffer, Miss Marion A.—bursaries.....	200.00
Shanahan's Ltd.—scholarship.....	500.00
Shaw, the late James Curtis (trust fund established by friends) —scholarship.....	125.00
Shell Oil Company of Canada Ltd.—fellowship.....	1,000.00
Sigma Tau Upsilon Honorary Agricultural Fraternity — gold medal.....	
Standard Oil Company of British Columbia—fellowship.....	1,100.00
Summerland, citizens of—scholarship.....	250.00
Summer Session Students' Association—scholarships.....	150.00
Sun, The Vancouver—scholarships.....	400.00
Swan, Col. and Mrs. W. G.—bursary.....	250.00
Taylor, Mr. Austin C.—scholarship.....	250.00
Teamsters' Joint Council No. 36—bursary.....	250.00
Terminal City Club (trust fund)—scholarship.....	100.00
Thom, David (trust fund from the estate)—bursaries and scholar- ships.....	400.00
Timber Preservers' Ltd.—prizes.....	180.00
Toban, Mr. Louis—bursary.....	100.00
Toronto General Trusts Corporation—prize.....	30.00
Trail Board of Trade—prizes.....	25.00
Transportation and Customs Bureau, Vancouver Board of Trade —prizes.....	300.00
Universities Service Club—Captain Le Roy Memorial Scholarship.....	150.00
University Women's Club—bursaries.....	200.00
Vancouver Bar Association—bursaries.....	300.00
Vancouver Panhellenic Alumnae—bursary.....	200.00
Vancouver Women's Canadian Club (trust funds)—scholarships.....	300.00
Winspear, Hamilton, Anderson and Company—scholarships.....	300.00
Woman's Christian Temperance Union—prize.....	50.00
Woodward, the Hon. W. C.—scholarships.....	250.00
Anonymous—G. M. Dawson Scholarship.....	50.00
Anonymous (trust fund)—International Studies Prize.....	30.00
Anonymous—prizes for Home Economics.....	75.00
Anonymous—book prize for Law.....	25.00

AWARDS MADE BY OTHER INSTITUTIONS, BUT ANNOUNCED BY THE UNIVERSITY

Beaver Club Trust (Toronto)—two scholarships.....	£ 1,000
Canadian Bar Association (Viscount Bennett Trust Fund)— scholarship.....	\$ 1,000.00
Community Planning Association of Canada (Vancouver Branch, through Mr. Hugh Martin)—special prize.....	150.00
Crofton House Alumnae—scholarship.....	175.00

Dominion-Provincial Governments' Student Aid and Provincial Loan Fund—awards for the Session 1948-49 to the total of approximately	\$56,000.00
French Government—scholarships, prizes, and medals	
Hyman, Mr. Sam—bursary for the B'nai B'rith Hillel Foundation on the Campus	50.00
Klein, Mrs. I. J.—bursary for the B'nai B'rith Hillel Foundation on the Campus	100.00
National Research Council—awards of bursaries, studentships and scholarships to graduates of this University, or to students proceeding to graduate work at this University, to the total of	27,450.00
Rhodes Scholarship Trust—scholarship	£ 500
United Odd Fellows—bursaries	\$ 1,200.00
Vancouver Public Library Staff—bursary	150.00

(b) (April 16, 1949 to August 31, 1949)

GRANTS AND GIFTS FOR RESEARCH AND RESEARCH EQUIPMENT

Barley Improvement Institute of Canada: for barley studies by the Department of Agronomy	\$ 2,000.00
Canadian Liquid Air Company: for research in Mining and Metallurgy	2,000.00
Department of National Health and Welfare (Ottawa): research grants to the Department of Bacteriology—estimated value	1,800.00
Dominion Government: grant for Social Work—estimated value	12,100.00
Geological Society of America: for research in biogeochemistry by the Department of Geology and Geography	500.00
Kelowna Exploration Company (Hedley): for research in biogeochemistry by the Department of Geology and Geography	300.00
National Research Council: research grants to the Department of Bacteriology—estimated value	1,500.00

GRANTS AND GIFTS FOR CHAIRS OF INSTRUCTION, LECTURESHIPS, COURSES, SPECIAL FACILITIES, AND EQUIPMENT

British Columbia Loggers' Association: for establishing and equipping the Forest School Camp at Loon Lake	\$120,000.00
contributions to the work in Forestry	6,650.00
British Columbia Lumber Manufacturers' Association: contribution to the work in Forestry	3,750.00
Consolidated Mining and Smelting Company of Canada Ltd.: (a) first instalment of a five-year grant to defray salary and other expenses of a professorship in Geology and Geography	7,500.00
(b) to cover the cost of lead required for installation of a new Geiger Counter in Geology	86.00

Consolidated Red Cedar Shingle Association: contribution to the work in Forestry.....	\$ 1,000.00
Department of Agriculture (Victoria): for completion of refrigeration facilities for the short course in Dairying.....	1,000.00
Department of National Health and Welfare (Ottawa): purchase of linens and furnishings to equip demonstration laboratory, valued at.....	3,000.00
Interior Lumber Manufacturing Association: contribution to the work in Forestry.....	500.00
Lady Davis Foundation: for special fellowship in Biology and Botany.....	2,500.00
for special fellowships in Physics.....	10,000.00
MacMillan, Mr. H. R., C.B.E.: for a professorship in Forestry.....	5,000.00
for a special lecturer in Forestry.....	500.00
Rockefeller Foundation (New York): first instalment of a grant of \$90,000 for Slavonic Studies.....	9,500.00
Summer Session Students' Association: for the purchase of Library books.....	50.00
Western Lumber Manufacturing Association: contribution to the work in Forestry.....	2,000.00
Western Plywood Company Limited: contribution to the work in Forestry.....	100.00

MISCELLANEOUS

Campbell, Anne S. (Estate): for various specified purposes.....	6,944.65
Consolidated Mining and Smelting Company of Canada Ltd.: grant to a member of the Department of Agricultural Eco- nomics to attend the International Conference of Agricultural Economists in Italy during the summer, 1949, valued at.....	1,600.00
Imperial Order Daughters of the Empire: for the nursery play school at Little Mountain.....	300.00
Imperial Order Daughters of the Empire (University Chapter): for the trust fund designated for various projects.....	600.00
Kellogg Foundation, the W. K. (Battle Creek, Michigan): fellowship to members of the staff of Nursing and Health for special studies, to be used over a period ending in 1950, and with an estimated value of.....	10,000.00
Anonymous: for the President's Fund.....	45.00

SCHOLARSHIPS, PRIZES, BURSARIES, LOAN FUNDS

Bastion Chapter (Nanaimo), I.O.D.E.—bursary in the Session 1949-50 for a student veteran from Nanaimo, with the value.....	200.00
B. C. Teachers' Federation—special scholarship awarded in Sum- mer Session, 1949, with the value.....	100.00
Canadian Association for Health, Physical Education and Recreation (B. C. Branch)—special prize for the highest ranking student for the degree of B.P.E. in May, 1949.....	50.00
Department of Mathematics — contributions to the Daniel Buchanan Scholarship Fund.....	235.00

Flesher, Mr. Eric Gregory (see MacGill, Miss Elsie)	
Hughes, Dr. Helen MacGill (see MacGill, Miss Elsie)	
Lipsett, Mrs. Mary C.—contribution to provide the Mary C. Lipsett Bursary for a period of five years.....	\$ 1,500.00
Murphy, the late Paul E. (Ocean Park)—for a student loan fund	100,000.00
MacGill, Miss Elsie (Toronto)—joint contribution of Miss Elsie MacGill, Dr. Helen MacGill Hughes (Chicago) and Mr. Eric Gregory Flesher to the Helen Gregory MacGill Student Aid Fund	200.00
Phi Delta Delta Legal Sorority—contribution to the Helen Gregory MacGill Student Aid Fund	15.00
Rogers, the late Jonathan C. (Estate): for Scholarship Fund	41,193.19
for Scholarship Fund—bonds	10,000.00
Summer Session Students' Association: contribution to Loan Fund	500.00
contribution to Scholarship Fund	700.00
Surrey Potato Club: contribution to the Sperry Phillips Memorial Bursary Fund	10.00

GIFTS TO THE LIBRARY

- Clemens, Dr. W. A.: Biological Abstracts, vols. 1 - 11 (1927-1937) and indexes vols. 12, 14, 16.
- Crease, Mr. A. D. (Victoria): copy of Perkins, A Profitable Booke of Master John Perkins (London, 1586).
- Cunningham, Dr. and Mrs. E. R. (West China Union University, Chengtu): West China Border Research Society Journal, vols. 1-11, 12 A & B—16 A & B, 1922-1946.
- Gillies, the late Dr. B. D. (through Mrs. C. A. Manson, Mrs. D. W. Moffatt and Mrs. R. J. D. Gillies): Miscellaneous books and periodical files, approximately 175 volumes.
- Okulich, the late Mr. J. K. (through Dr. G. M. Volkoff): several boxes of books in Russian and English.
- Other generous gifts from:** Allan, Mr. J.; Amherst College Library (Amherst, Mass.); Arnold, Mr. Hugh E.; Beardall, Miss G. (Salmon Arm); Borden, Mrs. Alice; Boucher, Mrs. H.; Campbell, Mr. D.; Canadian Chamber of Commerce (Montreal); Canadian Industries Limited; Canadian Jewish Congress (Montreal); Canadian Manufacturers' Association (Toronto); Carnegie Endowment for International Peace (Washington, D. C.); Casselman, Mr. Bruce; Cheshire Company, the F. W. (Melbourne, Australia); College Fraternity of the United States and Canada; Committee on Modern Languages (American Council on Education); Crumb, Dr. J. A.; Danish Forest Society (Copenhagen); Department of Architecture (U. B. C.); Department of Commerce (U. B. C.); Dolman, Dr. C. E.; Edwards, Mr. Harold P.; Extension Department (U. B. C.); Federation des industries Belges (Brussels); Gillies, Mrs. R. J. D.; Goodyear Tire and Rubber Company (New Toronto, Ont.); Grauer, Mrs. A. E. Dal; Hankinson, Dr. Cecil H. (Prince Rupert); Harvard University Library (Cambridge, Mass.); Headly, Mr. John A.; Hellenic Christian Educational Society (Chicago); Huntington Library (Cambridge, Mass.); Huntington Library and Art Gallery (San Marino, Calif.); Indian Institute of Science (Bangalore, India); Lamb, Dr. W. Kaye (Ottawa); Lotzkar, Mr. Joe; Lourié, Dr. M.; Manson, Mrs. C. A.; Moffatt, Mrs. D. W.; Moresby-White, Mrs.

J. M. (Dewdney); Morsh, Mrs. J. E.; Morsh, Dr. Joseph; McCloy, Mr. T. R.; McKenzie, Mrs. A. P. (Capilano P. O.); MacLaurin, Dr. D. L. (Victoria); McLennan, Mr. L. W. (Richmond, Calif.); National Research Council (Ottawa); Nevot, Senor Carlos (Argentina); Officers' Reference Library (B. C. Headquarters, Canadian Army, Vancouver); Oldham, Mrs. K. B. (Cobble Hill); Ontario Mining Association (Toronto); Pacific Oceanographic Group (Nanaimo); Parent, Mons. Alphonse-Marie (Quebec); Philosophical Library Inc. (New York); Publications Board (Ubysses); Riddehough, Prof. G. B.; Riddell, Dr. V. H. (London, Eng.); Riddle, Mr. Alexander; Saunders, S. J. Reginald and Co. (Toronto); Sherborne, Mrs. A. G.; Smith, Mr. S. G.; Soward, Prof. F. H.; Standard Oil Company (New York); Strip, Miss O.; Taylor, Dr. W. H. (Washington, D. C.); Uglow, Mrs. W. L.; University of Chicago (Department of Anthropology); University of Minnesota Library; University of Oregon Publications (Eugene, Ore.); University of Texas; Walker, Mrs. Francis; Warren, Dr. H. V.; War Services Committee, National Council of Y. M. C. A.'s of Canada (Toronto); Williams, Mrs. A. H.; Williams, Prof. D. B.

GIFTS TO THE LAW LIBRARY, FACULTY OF LAW

Campbell, Meredith, and Beckett: Law Journal Reports and other volumes.
 Crease, A. D., K.C. (Victoria): miscellaneous text-books.
 Faculty Association: Trial of the Major War Criminals, vols. 10-22 (through the United Kingdom Information Office, Ottawa).
 Macrae, Montgomery, and Macrae: miscellaneous Digests and Ontario Reports.
 Marshall, Mr. T. C.: miscellaneous United States periodicals.
 Schumiatcher, M. C., K.C.: Journal of Comparative Legislation 1903-46.
 Stanford University Libraries: miscellaneous periodicals.
 Symes, Reginald. (Estate): miscellaneous text-books.
 University of Washington Law Library: Proceedings of the American Bar Association, vols. 33-74; American Bar Association Journal, 1925-47.
 Ward, Mr. Donald K.: Western Weekly Reports.

MISCELLANEOUS GIFTS

Agricultural Engineering

Clement, Dean F. M.: Journal of Farm Economics, complete from date of first publication to December, 1948.

Animal Husbandry

Brackman-Ker Milling Co. Ltd., New Westminster (through Mr. Bruce McCurragh): ton of dog ration.
 Buckerfield's Ltd. (through Mr. K. C. Clarke): two tons of rabbit ration.
 James, Mr. (Burnaby): 49 mink.

Anthropology

Lipsett, Mrs. Mary C.: collection of Japanese porcelain, etc.
 Winton, Mr. John: Kwakiutl cedar chest.

Architecture

United Kingdom Information Office (Ottawa): set of 97 slides compiled and presented by the British Council; includes fine box, slide container, and catalogue.

Chemistry

- Archibald, Mrs. E. H.: back copies of the Journal of the American Chemical Society, Chemical Abstracts, and other chemical journals.
- B. C. Sugar Refining Co. Ltd.: miscellaneous numbers of industrial and Engineering Chemistry, Journal of the Society of Chemical Industry, etc.
- General Ceramics and Steatite Corporation (Keasbey, N. J.): two cu. ft. porcelain Raschig rings.
- Knight, Maurice A. (Akron, Ohio): two cu. ft. $\frac{3}{4}$ " Berl saddles.
- Reinhold Publishing Co. (through the offices of the American Institute of Chemical Engineers and its Corporation members): chemical engineering catalogues.
- Sanford, Prof. C.: back copies of Canadian Journal of Research, Chemical and Engineering News, Canadian Chemistry and Process Industries.
- Tyler, Mr. S. L. (American Institute of Chemical Engineers, New York): Annual Editions of the Transactions of the Institution of Chemical Engineers (London), vols. 41-45.
- U. S. Stoneware Co. (New York): two cu. ft. stoneware Raschig rings.
- Wallace & Tiernan Ltd. (Toronto): chlorine testing comparator and file of literature on water chlorination.
- Wilson, Dr. W. Semple (New Westminster): laboratory equipment.

Civil Engineering

- Canadian Institute of Steel Construction Inc. (Toronto): 112 copies of steel construction handbook.

Commerce

- Douglas, Mr. A. H.: back issues of Monetary Times.
- King, Earl C. (Secretary, Western Lumber Manufacturers' Association of Canada, Vancouver): complete set of twelve volumes of Course on Foreign Trade, Business Training Corporation.
- Spitzer and Mills Ltd.: magazines sent to Commerce Department each month.

Education

- Australian Council for Educational Research: books.

Extension

- Beardall, Miss Gwendolen (Salmon Arm): books.
- Davis, Mrs. Esme (Galiano): books.
- Inter-racial Committee of the United Nations Association: donation of \$25.
- Moresby-White, Mrs. J. M. (Dewdney): books.
- Morsh, Mrs. J. E.: books.
- McKenzie, Mrs. A. P. (Capilano): books.
- Oldham, Mrs. K. B. (Cobble Hill): books.

Forestry

- Angus, Mr. George (Industrial Engineering Ltd.): loan of 22" power saw for 3 weeks' period for cutting on experimental plots at University Research Forest, Loon Lake.
- Petrie, Mr. (Industrial Engineering Ltd.): free use for two weeks of 2½ H.P. power saw for experimental thinning work on University Research Forest.
- United States Forest Service: 100 Engleman spruce trees.

Geology and Geography

Highland-Bell Ltd.: 250 lb. sample of ore from Highland-Bell.
Paget, Mr. E. (Zeballos): bone of whale.

History

Sage, Mr. Donald (California): miner's pick, gold scales and pan from California.
Sherborne, Mrs. Grant: collection of Indian masks for museum.

Home Economics

Connor & Son, G. H. (Ottawa) and Mr. A. M. Clark (Manager, Western Agencies Ltd., Vancouver): Connor Thermo Washing Machine.
Morsh, Mrs. J. E.: complete sets of various magazines.
McCallum, Miss J. (Agassiz): textile illustrative material—unusual or discontinued weaves and patterns, period costumes, books.
Richardson, Mrs. Frances: historical articles of clothing, textiles, etc.
Thompson, Miss Irene: solid mahogany dining-room suite, two upholstered easy chairs, grandfather clock, oak card table.
Thomson, Mrs. Jim (St. George's Residential School, Lytton): textile and pottery articles.

Mechanical and Electrical Engineering

Bayley, Mr. Edward H. (Duncan): automobile transmission, sectioned to show working parts.

Mining and Metallurgy

Canadian Westinghouse Ltd. (Hamilton): suite of prepared metallographic specimens.
Cuke, Mr. M. H. (Montreal): donations to University of British Columbia research.
Galloway, the late Mr. J. D. (from his library): collections of publications, about 250 vols. in all.

Pharmacy

British Drug Houses (Canada) Ltd. (Toronto): prescription specialties.
Poulenc Frères Laboratory of Canada Ltd. (Montreal): prescription specialties.

Poultry Husbandry

Merck & Co. (Rahway, N. J.): one lb. experimental animal protein factor, supplement No. 3, for experimental use.

Slavonic Studies

Hellor, Mrs. F.: various Polish and Russian books.

Spanish

Consulate of Mexico (Vancouver): newspapers and periodicals, posters and pamphlets.
Department of External Affairs (Ottawa): newspapers and periodicals.
Embassy of Argentina (Ottawa): newspapers and periodicals.

Zoology

Brandon, Mr. H. (Telkwa): large collection of Cimicidae.
Evans, Mr. David (Vernon): collection of Neuroptera.
Racey, Mr. Kenneth: collection—Ectoparasites of Birds.

General

Graduating Classes of '49: electric scoreboard and accessories to be installed in a suitable position at the north end of the stadium.

ALUMNI-U. B. C. DEVELOPMENT FUND

The Alumni-U. B. C. Development Fund, inaugurated by the U. B. C. Alumni Association in 1948, turned over \$7,000 to U. B. C. in 1949. Of this amount, \$3,000 was earmarked for furnishings in the Women's Residence and \$4,000 was in the nature of an unrestricted gift.

Objectives for the 1950 Fund program are: (1) Unrestricted gift, (2) Sedgewick Memorial, (3) Women's Residence furnishings, (4) Alumni scholarships.

UNIVERSITY PUBLICATIONS

The University of British Columbia issues the following official publications, any of which may be obtained on request from the Registrar:

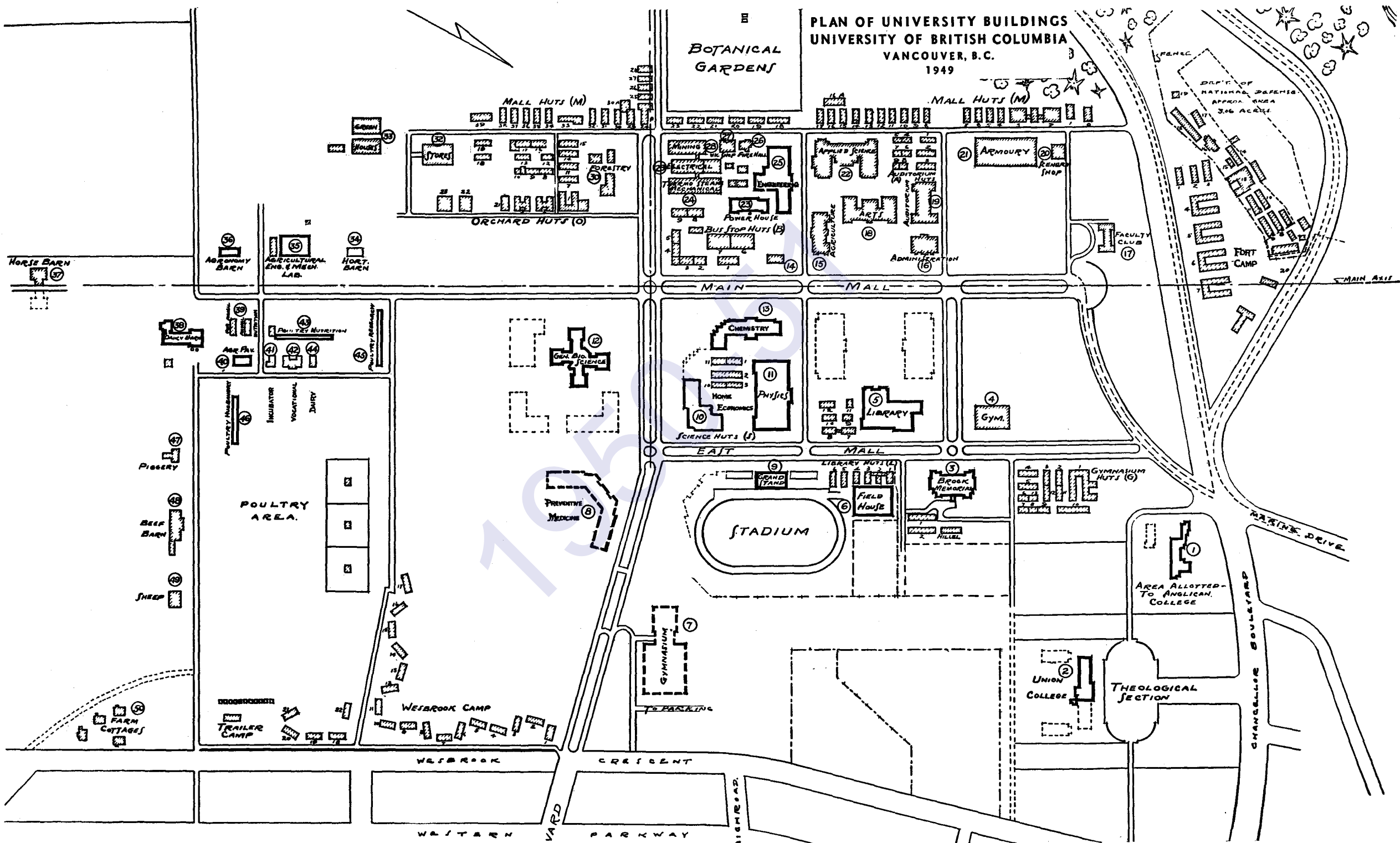
1. Requirements for University Entrance and for Senior Matriculation.
2. The Calendar.
3. Summer Session Announcement of Courses.

• • •

THE UNIVERSITY BOOK STORE

The book store, which occupies a room in Hut A3, was established for the convenience of the students, and has effected a considerable saving to the students in time and money. It is prepared to supply all the text-books required for the various courses offered in the University, also such articles as note books, loose-leaf books, fountain pens, drawing paper, and instruments.

During the Winter Session the book store is open Monday to Friday, from nine to five o'clock, and Saturday, from nine to twelve.



PLAN OF UNIVERSITY BUILDINGS
UNIVERSITY OF BRITISH COLUMBIA
VANCOUVER, B.C.
1949

BOTANICAL
GARDENS

MALL HUTS (M)

MALL HUTS (M)

ORCHARD HUTS (O)

MAIN

MALL

EAST

MALL

STADIUM

PREVENTIVE
MEDICINE

POULTRY
AREA

GYMNASIUM
HUTS (G)

AREA ALLOTTED
TO ANGLICAN
COLLEGE

THEOLOGICAL
SECTION

UNION
COLLEGE

FIELD
HOUSE

BROOK
MEMORIAL

LIBRARY HUTS (L)

GYMNASIUM

WESTBROOK CAMP

TRAILER
CAMP

FARM
COTTAGES

CHANCELLOR BOULEVARD

MARINE DRIVE

CRESCENT

WESTBROOK

PARKWAY

WESTERN

YARD

LIGHT ROAD

DEPT. OF
NATURAL DEFENSE
APPROX. 3.56 ACRES

FORT
CAMP

FACULTY
CLUB

ARMOURY

ADMINISTRATION

ARTS

APPLIED SCIENCE

ENGINEERING

MINING

LIBRARY

POWER HOUSE

STREET

STREET

STREET

STREET

STREET

STREET

STREET

STREET

STREET

STREET

STREET

STREET

STREET

STREET

HORSE BARN

ARMOURY BARN

AGRICULTURAL
ENG. & MECH.
LAB.

HORT. BARN

AGRIC. BLDG.

AGRIC. BLDG.

AGRIC. BLDG.

PIGGERY

BEEF BARN

SHEEP

REFERENCE NUMBERS

1. Anglican College	27. Workshops
2. Union College	28. Mining Laboratories
3. Brock Memorial	29. Electrical Laboratories
4. Gymnasium	30. Federal Forest Products Laboratories
5. Library	31. Forest Nursery
6. Field House	32. Stores
7. Memorial Gymnasium	33. Greenhouses
8. Preventive Medicine	34. Horticultural Barn
9. Stadium	35. Agricultural Engineering, Laboratories
10. Home Economics	36. Agronomy Barn
11. Physics	37. Horse Barn
12. General Bio-Science	38. Dairy Barn
13. Chemistry	39. Fur Animal Laboratories
14. Bus Stop	40. Agricultural Pavilion
15. Agriculture	41. Incubator
16. Administration	42. Vocational
17. Faculty Club	43. Poultry Nutrition
18. Arts	44. Dairy Laboratory
19. Auditorium	45. Poultry Research
20. Scenery Shop	46. Poultry Husbandry
21. Armoury	47. Piggery
22. Applied Science	48. Beef Barn
23. Power House	49. Sheep Barn
24. Mechanical Laboratories	50. Farm Cottages
25. Engineering	
26. Fire Hall	

BUILDINGS

Administration	16	General Bio-Science	12
Agriculture	15	Greenhouses	33
Agronomy Barn	36	Gymnasium	4
Agricultural Engineering		Home Economics	10
Laboratories	35	Horse Barn	37
Agricultural Pavilion	40	Horticultural Barn	34
Applied Science	22	Incubator	41
Arts	18	Library	5
Armoury	21	Mechanical Laboratories	24
Auditorium	19	Medicine	Huts B 6 & 7
Beef Barn	48	Memorial Gymnasium	7
Brock Memorial	3	Mining and Metallurgy	28
Bus Terminal	14	Physics	11
Chemistry	13	Piggery	47
Dairy Barn	38	Poultry Husbandry	46
Dairy Laboratories	44	Poultry Nutrition	43
Electrical Laboratories	29	Poultry Research	45
Engineering	25	Power House	23
Faculty Club	17	Preventive Medicine	8
Farm Cottages	50	Scenery Shop	20
Federal Forest Products		Sheep Barn	49
Laboratories	30	Stadium	9
Field House	6	Stores	32
Fire Hall	26	Theological Colleges	1 & 2
Forest Nursery	31	Vocational	42
Fur Animal Laboratories	39	Workshops	27

HUTS

Auditorium	"A" 1-9
Brock	"BROCK" 1-2
Bus Stop	"B" 1-9
Gymnasium	"G" 1-13
Library	"L" 1-12
Mall	"M" 1-39
Orchard	"O" 1-3 & 7-23
Science	"S" 1-3 & 10-11