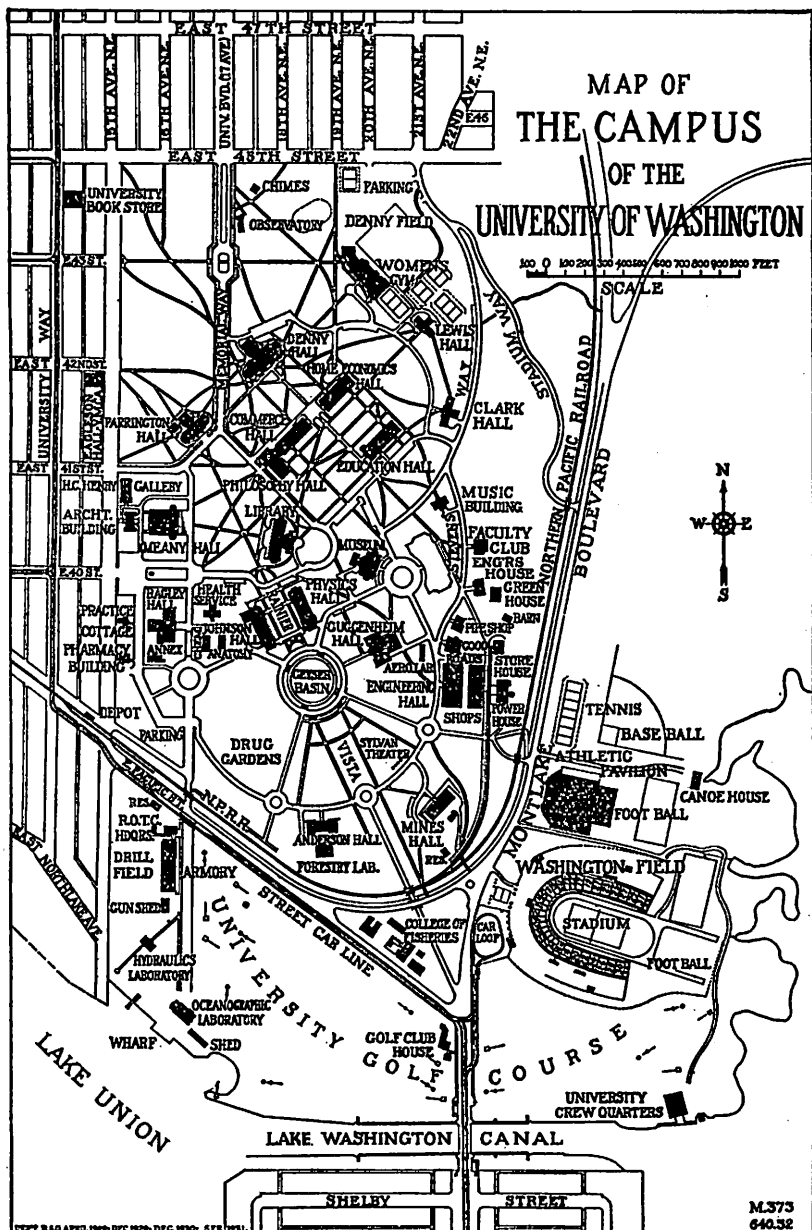


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SCALE



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CATALOGUE NUMBER

For 1932-1933 Sessions

UNIVERSITY OF WASHINGTON



SEATTLE, WASHINGTON
June, 1932

Seattle
University of Washington Press
1932

NOTICE

The University and its various colleges and schools reserve the right to change the rules regulating admission to, instruction in and graduation from the University and its various divisions, and any other regulations affecting the student body. Such regulations shall go into force whenever the proper authorities may determine, and shall apply not only to prospective students but also to those who may, at such time, be matriculated in the University. The University also reserves the right to withdraw courses, or change fees at any time.

CONTENTS

	Page
MAP.....	3
CALENDAR.....	9
BOARD OF REGENTS.....	10
OFFICERS OF ADMINISTRATION.....	11
FACULTY.....	12
THE UNIVERSITY.....	30
History.....	30
Equipment.....	30
GENERAL INFORMATION.....	33
The University Organization	33
Admission to the University.....	35
Requirements for Admission to the University, and Colleges, and Curricula..	36
Admission to Advanced Standing.....	38
Admission by Examination.....	38
Admission of Special Students.....	41
Registration.....	43
Expenses.....	45
Degrees.....	51
Fellowships, Scholarships and Aid.....	52
Prizes.....	55
Student Loan Funds.....	56
Associations and Clubs.....	56
General Scholastic Regulations.....	57
COLLEGE OF BUSINESS ADMINISTRATION	61
Admission and Requirements	61
Curricula.....	63
SCHOOL OF EDUCATION.....	74
Admission.....	76
Requirements for Degrees.....	77
Requirements for Normal and Life Diplomas.....	78
Curricula.....	81
COLLEGE OF ENGINEERING.....	92
Admission and Requirements.....	94
Curricula and Degrees.....	95
COLLEGE OF FINE ARTS.....	100
Admission and Requirements.....	100
Curricula.....	101
COLLEGE OF FORESTRY	110
Admission and Requirements.....	110
Curricula.....	112
GRADUATE SCHOOL	115
Admission.....	116
Degrees.....	117
SCHOOL OF JOURNALISM	121
Admission.....	122
Curriculum.....	124
SCHOOL OF LAW	128
Admission.....	129
Requirements for Graduation	130
COLLEGE OF LIBERAL ARTS.....	133
Admission.....	133
Requirements for the degree of Bachelor of Arts	137
Curricula.....	138
LIBRARY SCHOOL	145
Admission.....	145
Curricula.....	147
COLLEGE OF MINES.....	148
Degrees.....	148
Admission.....	150
Curricula.....	150

Note: See Index, page 309, for detailed information.

CONTENTS (Continued)

	Page
COLLEGE OF PHARMACY	152
Admission and Requirements	154
Curricula	154
COLLEGE OF SCIENCE	157
Curricula	157
DEPARTMENTS OF INSTRUCTION	179
Aeronautical Engineering	181
Anatomy	182
Anthropology	183
Architecture	184
Astronomy	185
Aviation (see Naval Science)	262
Bacteriology	186
Botany	187
Ceramics (see Mining)	250
Chemistry	189
Civil Engineering	193
Classical Languages and Literature (Greek, Latin)	196
Economics and Business Administration	199
Education	211
Electrical Engineering	209
Engineering Shops	204
English (Composition, Drama, Speech and Literature)	212
Fisheries	219
Forestry and Lumbering	219
General Engineering	222
General Literature	223
Geology and Geography	224
German	227
History	230
Home Economics	234
Journalism	236
Law	238
Liberal Arts	241
Library Science	241
Mathematics	243
Mechanical Engineering	245
Metallurgy (see Mining)	250
Military Science and Tactics	247
Mining	250
Music	254
Naval Science and Tactics	262
Nursing Education	263
Oceanographic Laboratories	266
Oriental Studies	267
Painting, Sculpture and Design	269
Pharmacy, Pharmaceutical Chemistry, Materi Medica and Food Chemistry	272
Philosophy	273
Physical Education and Hygiene for Men	275
Physical Education and Hygiene for Women	276
Physics	279
Political Science	281
Psychology	285
Romanic Languages	287
Scandinavian Languages and Literature	292
Sociology	293
Zoology and Physiology	296
SUMMER QUARTER	299
UNIVERSITY OF WASHINGTON OCEANOGRAPHIC LABORATORIES	301
EXTENSION SERVICE	302
DEGREES CONFERRED, 1931	304
SUMMARY OF ENROLLMENT	306
INDEX	309

Note: See Index, page 309, for detailed information.

THE UNIVERSITY CALENDAR 1932-1933

AUTUMN QUARTER

Pre-registration dates.....May 9 to June 3; June 27 to August 26.
 Latest day for payment of fees for students who preregister..Wednesday, September 14.
 Registration dates for students who do not pre-register.....September 26 to 29, inclusive.
 Last registration day before beginning of instruction.....Thursday, September 29.
 Freshman Week....Begins Friday, September 30, 8:30 a.m.; ends Saturday, October 1.
 Instruction begins.....Monday, October 3, 8 a.m.
 Last day for registration with late fee, and to add a course..Saturday, October 8, 12 m.
 President's annual address.....Friday, October 7, 11 a.m.
 Regular meeting of faculty.....Tuesday, October 25, 4 p.m.
 Latest day to withdraw and receive a "W" without grade..Saturday, October 29, 12 m.
 Thanksgiving recess begins.....Wednesday, November 23, 6 p.m.
 Thanksgiving recess ends.....Monday, November 28, 8 a.m.
 Regular meeting of faculty.....Tuesday, December 6, 4 p.m.
 Instruction ends.....Tuesday, December 20, 6 p.m.

WINTER QUARTER

Pre-registration dates.....November 1 to December 20.
 Latest day for securing reserved sections by payment of fees for students who preregister.....Tuesday, December 20.
 Registration dates for students who do not pre-register..December 21 to December 31, 12 m.
 Last registration day before beginning of instruction.....Saturday, December 31, 12 m.
 Instruction begins.....Tuesday, January 3, 8 a.m.
 Last day for registration with late fee, and to add a course.....Monday, January 9.
 Regular meeting of faculty.....Tuesday, January 24, 4 p.m.
 Latest day to withdraw and receive a "W" without grade..Monday, January 30, 4:30 p.m.
 Washington's birthday (Founders' Day).....Wednesday, February 22.
 Regular meeting of faculty.....Tuesday, March 7, 4 p.m.
 Instruction ends.....Friday, March 17, 6 p.m.

SPRING QUARTER

Pre-registration dates.....February 1 to March 17.
 Latest day for securing reserved sections by payment of fees for students who preregister.....Friday, March 17, 4:30 p.m.
 Registration dates for students who do not pre-register.....March 18 to March 25, 12 m.
 Last registration day before beginning of instruction.....Saturday, March 25, 12 m.
 Instruction begins.....Monday, March 27, 8 a.m.
 Last day for registration with late fee, and to add a course..Saturday, April 1, 12 m.
 Regular meeting of faculty.....Tuesday, April 18, 4 p.m.
 Latest day to withdraw and receive a "W" without grade..Saturday, April 22, 12 m.
 Campus Day.....Wednesday, April 19.
 Memorial Day (holiday).....Tuesday, May 30.
 Regular meeting of faculty.....Wednesday, May 31, 4 p.m.
 Instruction ends.....Friday, June 9, 6 p.m.
 Class Day and Alumni Day.....Saturday, June 10.
 Baccalaureate Sunday.....Sunday, June 11.
 Commencement.....Monday, June 12.

SUMMER QUARTER 1933

Pre-registration dates.....April 24 to June 10, 12 m.
 Latest day for securing reserved sections by payment of fees for students who preregister (1st term).....Saturday, June 10, 12 m.
 Last registration day before beginning of instruction.....Tuesday, June 13.
 Instruction begins.....Wednesday, June 14, 8 a.m.
 Last day to add a course (1st term).....Friday, June 16, 4:30 p.m.
 Last day to add a course (full quarter).....Tuesday, June 20, 4:30 p.m.
 Latest day to withdraw and receive a "W" without grade (1st term).....Tuesday, June 27, 4:30 p.m.
 Independence Day (holiday).....Tuesday, July 4.
 Latest day to withdraw and receive a "W" without grade (full quarter).....Tuesday, July 11, 4:30 p.m.
 First term ends.....Friday, July 21, 6 p.m.
 Latest day for securing reserved sections by payment of fees (2nd term).....Friday, July 21, 4:30 p.m.
 Last registration day before beginning of instruction (2nd term).....Saturday, July 22, 12 m.
 Second term begins.....Monday, July 24, 8 a.m.
 Last day to add a course (2nd term).....Wednesday, July 26, 4:30 p.m.
 Latest day to withdraw and receive a "W" without grade (2nd term).....Saturday, August 5, 12 m.
 Instruction ends.....Thursday, August 24, 6 p.m.

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Term ends March, 1932	
JAMES V. PATERSON, Vice-President.....	Seattle
Term ends March, 1934	
WILLIAM NEAL WINTER, Secretary.....	Medina
Term ends March, 1934	
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Term ends March, 1935	
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Term ends March, 1933	
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Term ends March, 1932	
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Term ends March, 1938	

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Oceanographic Laboratories.....	Farrell, Perry, Paterson
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Student Welfare.....	Kumm, Balch, Perry
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Lands.....	Balch, Johns, Winter
Metropolitan Lease.....	Farrell, Winter, Kumm
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Allen, H. C.

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HAROLD SHEPHERD, J.D.....Dean of the School of Law
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WILLIS LEMON UHL, Ph.D.....Dean of the School of Education
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RUTH WORDEN, B.A.....Dean of the Library School

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ERNA GUNTHER, Ph.D.....Director of the Museum
DAVID CONNOLLY HALL, M.D.....University Health Officer
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KIMMEL, EDWARD, M.A.....Colonel, U.S. Military R.O.T.C.
CARL EDWARD MAGNUSSON, Ph.D., E.E..Director, Engineering Experiment Station
HARVEY WILLIAM McCORMACK.....Commander, U.S. Naval R.O.T.C.
HALLEY SAVERY.....Curator of the Henry Art Gallery
HARRY EDWIN SMITH, Ph.D.....Director of Extension Service
THOMAS GORDON THOMPSON, Ph.D.....Director, Oceanographic Laboratories
WILLIAM R. WILSON, Ph.D.....Director, Administrative Research
HARRY FAGAN YANCEY, Ph.D..Acting Supervising Engineer, U.S. Bureau of Mines

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1932-1933

- Spencer, Matthew Lyle.....President of the University
Ph.D., Chicago; LL.D., Northwestern; Litt.D., College of Puget Sound.
- Adams, Henrietta.....Assistant Professor of Nursing Education; Director
of Nursing Education at Harborview Hospital
R.N., Seattle General Hospital; B.S., Washington.
- Alden, Charles.....Lecturer in Architecture
B.S., Massachusetts Institute of Technology.
- Alexander, James Lindsay.....Assistant Professor of Forestry
B.Sc.F., Toronto.
- Alfonso, Marie.....Assistant Professor of Library Science
B.A., B.L.S., Washington.
- Anderson, Iris Canfield.....Instructor in Music
B.A., Washington.
- Andrews, Siri.....Instructor in Library Science
B.S. (L.S.) Washington.
- Ankele, Felicie Charlotte.....Associate in Germanic Languages
M.A., Washington.
- Auernheimer, August A.....Instructor in Physical Education for Men
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- Ayer, Leslie James.....Professor of Law
B.S., Upper Iowa; J.D., Chicago.
- Ballaine, Genevieve Knight.....Associate in Latin
B.A., Olivet College.
- Ballantine, John Perry.....Associate Professor of Mathematics
Ph.D., Chicago.
- Ballard, Arthur C.....Research Associate in Anthropology
B.A., Washington.
- Barnes, Donald G.....Professor of History
Ph.D., Harvard.
- Beardsley, Arthur Sydney.....Law Librarian; Associate Professor of Law
LL.B., Ph.D., Washington.
- Beck, Eleanor N.....Associate in Music
Pupil of Marcel Grancjany, Harpist, American School at Fontainebleau, Paris.
- Bell, F. Heward.....Lecturer in Fisheries
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- Belshaw, Roland.....Assistant Professor of Physical Education for Men
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- Benham, Allen Rogers.....Professor of English
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- Benson, Edna.....Assistant Professor of Design
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- Benson, Henry Kreitzer.....Professor of Chemical Engineering
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- Benson, Merritt E.....Assistant Professor of Journalism
LL.B., Minnesota.
- Best, Charles L.....Commander, U.S.N., Assistant Professor of Naval
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Graduate, U.S. Naval Academy.

- Beuschlein, Warren Lord.....Associate Professor of Chemical Engineering
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- Bird, Winfred Wylam.....Instructor in English
M.A., Washington.
- Bishop, Eugene A.....Professor of Education
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- Blankenship, Russell.....Associate in English
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- Bliss, Addie Jeanette.....Assistant Professor of Home Economics
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- Brakel, Henry Louis.....Associate Professor of Engineering Physics
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- Brown, Robert Quixote.....Assistant Professor of General Engineering
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- Brown, Stephen Darden.....Assistant Professor of Business Administration
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M.D., Jefferson.
- Burd, Henry Alfred.....Professor of Business Administration; Director of
the Summer Quarter
Ph.D., Illinois.
- Butterbaugh, Grant I.....Assistant Professor of Business Administration
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M.A., Brown.
- Byers, Maryhelen.....Instructor in Painting
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M.S. in Phar., Washington.
- Carlson, John A.....Associate in Mathematics
M.S., Washington.
- Carpenter, Allen Fuller.....Professor of Mathematics
Ph.D., Chicago.
- Cederstrom, Moyle F.....Associate in English
Ph.D., Washington.
- Cheadle, J. Kennard.....Assistant Professor of Law
LL.M., Harvard.
- Chessex, Jean Charles William...Assistant Professor of Romanic Languages
M.A., Lausanne (Switzerland).

- Childs, Herbert Ellsworth.....Associate in English
B.A., Oberlin.
- Chittenden, Hiram Martin.....Instructor in Civil Engineering
B.S. (C.E.), Washington.
- Christian, Byron Hunter.....Assistant Professor of Journalism
M.A., Washington.
- Cohen, Joseph.....Associate in Sociology
M.A., Washington.
- Cole, Kenneth C.....Associate Professor of Political Science
Ph.D., Harvard.
- Cole, Thomas Raymond.....Professor of Education
Ph.B., DePauw; LL.D., Upper Iowa.
- Collier, Ira Leonard.....Assistant Professor of Civil Engineering
C.E., Washington.
- Conway, John Ashby.....Assistant Professor of Dramatic Art
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- Coon, Shirley Jay.....Professor of Economics and Business Administration;
Dean of the College of Business Administration
Ph.D., Chicago.
- Cooper, James G., Jr., Captain, Infantry.....Assistant Professor of Military
Science and Tactics
- Corbally, John E.....Assistant Professor of Education
Ph.D., Washington.
- Corey, Clarence Raymond.....Associate Professor of Mining Engineering
and Metallurgy
E.M., Montana State School of Mines; M.A., Columbia.
- Cornu, Donald.....Assistant Professor of English
LL.B., Ph.D., Washington.
- Cory, Herbert Ellsworth.....Professor of Liberal Arts
Ph.D., Harvard.
- Cox, Edward Godfrey.....Professor of English
Ph.D., Cornell.
- Cox, William Edward.....Professor of Economics
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- Craig, Joseph A.....Lecturer in Fisheries
M.A., Stanford.
- Cramlet, Clyde Myron.....Assistant Professor of Mathematics
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- Creer, Leland Hargrave.....Assistant Professor of History
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- Crim, Lemuel P., Captain, Ordnance.....Assistant Professor of Military
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B.S., Washington.
- Dahlin, Ebba.....Assistant Professor of History
Ph.D., Stanford.
- Dakan, Carl Spencer.....Professor of Business Administration
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- Daniels, Joseph.....Professor of Mining Engineering and Metallurgy
M.S., Lehigh.

- Davidson, Frederick A.....Lecturer in Fisheries
- Davidson, Lucy W....Assistant Professor of Physical Education for Women
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- Davis, Erma Nelson.....Associate in History
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- Davis, Pearce Crane.....Lecturer in Accounting
C.P.A.
- Dehn, William Maurice.....Professor of Organic Chemistry
Ph.D., Illinois.
- Demetracopoulou, Dorothea.....Instructor in Anthropology
Ph.D., California.
- Demmery, Joseph.....Associate Professor of Business Administration
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- Denny, Grace Goldena.....Associate Professor of Home Economics
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- Densmore, Harvey Bruce.....Associate Professor of Greek
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- de Rohan, Frederick J., Major, Infantry.....Assistant Professor of Military
Science and Tactics
- de Vries, Louis Peter.....Associate Professor of French
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- de Vries, Mary Aid....Assistant Professor of Physical Education for Women
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- Dial, Mabel.....Lecturer in Pharmacy, Harborview Hospital
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- Dickey, Frances.....Associate Professor of Music
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- Dobie, Edith.....Instructor in History
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- Draper, Edgar Marion.....Associate Professor of Education
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- Draper, Oscar Eldridge.....Lecturer in Business Administration
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- Dresslar, Martha Estella.....Assistant Professor of Home Economics
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- Dunlap, Clarence E.....Instructor in Naval Science and Tactics
- Dunlop, Harry A.....Lecturer in Fisheries
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- Dvorak, August.....Associate Professor of Education
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- Earle, Frances M.....Assistant Professor of Geography
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- Eastman, Austin Vitruvius....Assistant Professor of Electrical Engineering
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- Eastman, Fred S.....Instructor in Aeronautical Engineering
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- Eastwood, Everett Owen....Professor of Mechanical Engineering; Director of
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- Eby, Edwin Harold.....Assistant Professor of English
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- Edmundson, Clarence.....Associate in Physical Education for Men
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- Esper, Erwin Allen.....Associate Professor of Psychology
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- Evans, Claire.....Instructor in Pharmacy
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- Farquharson, Frederick Burt.....Assistant Professor of Civil Engineering
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- Farwell, Raymond Forrest.....Assistant Professor of Business Administration
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- Foote, Hope Lucile.....Assistant Professor of Interior Design
M.A., Columbia.
- Foster, Henry Melville.....Associate Professor and Director of Physical
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- Frazer, William D., Major, C.A.C.....Associate Professor of Military
Science and Tactics
B.S. (C.E.), Michigan State College.
- Frein, Pierre Joseph.....Professor of Romanic Languages
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- Frye, Theodore Christian.....Professor of Botany
Ph.D., Chicago.
- Fuller, Richard E.....Assistant Professor of Geology on Research
Appointment
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- Garcia-Prada, Carlos.....Assistant Professor of Spanish
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- Gavett, George Irving.....Associate Professor of Mathematics
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- Gillette, Alletta Maria.....Instructor in English
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- Glover, Harriet F.....Instructor in Physical Education for Women
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- Goggio, Charles.....Associate Professor of Romanic Languages
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- Goodrich, Forest Jackson.....Associate Professor of Pharmacy and
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- Goodsell, Julia.....Associate in Physiology
M.S., Washington.
- Goodspeed, George Edward.....Associate Professor of Geology
B.S. (Min.E.), Massachusetts Institute of Technology.
- Gould, James Edward.....Professor of Maritime Commerce
M.A., Harvard.
- Gowen, Herbert Henry.....Professor of Oriental Studies
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- Gowen, Lancelot.....Associate Professor of Architecture
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- Graves, Dorsett.....Associate in Physical Education for Men
- Gregory, Edgar M., First Lieutenant C.A.C....Assistant Professor of Military
Science and Tactics
Graduate, U.S. Military Academy.
- Gregory, Homer Ewart.....Associate Professor of Business Administration
M.A., Chicago.
- Griffith, Dudley David.....Professor of English; Dean of the College of
Liberal Arts
Ph.D., Chicago.
- Grondal, Bror Leonard.....Professor of Forestry
B.A., Bethany; M.S.F., Washington.
- Gross, Mary Emma..Associate Professor and Director of Physical Education
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M.A., Columbia.
- Groth, John Henry.....Assistant Professor of German
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- Guberlet, John Earl.....Professor of Zoology
Ph.D., Illinois.
- Gundlach, Ralph.....Assistant Professor of Psychology
Ph.D., Illinois.
- Gunther, Erna..Assistant Professor of Anthropology; Director of the Museum
Ph.D., Columbia.
- Guthrie, Edwin Ray.....Professor of Psychology
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- Guthrie, Elton.....Instructor in Sociology
B.A., Washington.
- Haas, Harold Milburn.....Instructor in Business Administration
B.S. (M.E.), Purdue; M.B.A., Washington.
- Hall, Amy Violet.....Instructor in English
M.A., Washington.
- Hall, David Connolly.....Professor of Hygiene; University Health Officer
Sc.M., Chicago; M.D., Rush Medical College.
- Hall, Helen.....Instructor in Music
B.M., Washington.
- Hall, James Kendall.....Associate Professor of Business Administration
Ph.D., Stanford.

- Hall, John F.....Lecturer in Sociology
- Haller, Mary Elizabeth.....Associate in Mathematics
M.S., Washington.
- Hamack, Frank Hartmond..Associate and Adviser in Business Administration
LL.B., Georgetown.
- Hamilton, Malcolm.....Instructor in Naval Science and Tactics
- Hamilton, Rachel Elizabeth.....Associate in French
M.A., Washington.
- Harris, Charles William.....Professor of Hydraulic Engineering
C.E., Cornell.
- Harris, Joseph Pratt.....Professor of Political Science
Ph.D., Chicago.
- Harrison, Joseph Barlow.....Associate Professor of English
B.A., Oxford.
- Harsch, Alfred E.....Assistant Professor of Business Administration
B.A., LL.B., Washington.
- Hatch, Melville H.....Assistant Professor of Zoology
Ph.D., Michigan.
- Hauan, Merlin James.....Lecturer in Civil Engineering
B.S. (E.E.), Washington.
- Hawthorn, George Edward.....Assistant Professor of Civil Engineering
C.E., Washington.
- Hayner, Norman Sylvester.....Associate Professor of Sociology
Ph.D., Chicago.
- Heeremans, Harold.....Associate in Music
M.A., Keble College, Oxford.
- Helmilingé, Charles Louis.....Associate Professor of Romanic Languages
M.A., Washington.
- Henderson, Joseph E.....Assistant Professor of Physics
Ph.D., Yale.
- Henry, Bernard S.....Instructor in Bacteriology
Ph.D., California.
- Henry, William Elmer.....Librarian Emeritus; Dean Emeritus of the
Library School
M.A., Indiana.
- Hepler, Alexander B.....Lecturer in Urology, Harborview Hospital
M.D., Bellevue Hospital, New York University.
- Hermans, Thomas G.....Associate in Psychology
M.A., Washington.
- Herrman, Arthur Philip.....Associate Professor of Architecture
B.A. (Arch.), Carnegie Institute of Technology.
- Higgs, Paul McClellan.....Instructor in Physics
B.S., Washington.
- Hill, Raymond L.....Assistant Professor of Painting
Rhode Island School of Design; California School of Fine Arts.

- Hirtle, Eugene G.....Instructor in General Engineering
B.S. in C.E., Washington.
- Hoard, George Lisle.....Assistant Professor of Electrical Engineering
M.S. (E.E.), Washington.
- Hoffstadt, Rachel Emilie.....Assistant Professor of Bacteriology
Ph.D., Chicago; D.Sc., Johns Hopkins.
- Holmes, Harlan B.....Lecturer in Fisheries
M.A., Stanford.
- Hotson, John William.....Associate Professor of Botany
Ph.D., Harvard.
- Houston, Frances.....Assistant Health Officer
B.S., Chicago; M.D., Rush Medical College.
- Hughes, Glenn.....Professor of English
M.A., Washington.
- Isaacs, Walter F.....Professor of Fine Arts; Acting Dean of the College of
Fine Arts
B.S. (F.A.), James Millikin.
- Jacobs, Melville.....Instructor in Anthropology
Ph.D., Columbia.
- Jacobsen, Philip A.....Instructor in General Engineering
B.S., Washington.
- Jacobsen, Theodore Siegmundt.....Assistant Professor of Astronomy and
Mathematics
Ph.D., California.
- James, Burton Wakeley.....Assistant Professor of English
Emerson College.
- James, Florence B.....Assistant Professor of English
Emerson College.
- Jeffers, Dwight S.....Professor of Forestry
B.A., Illinois Wesleyan; M.F., Yale.
- Jensen, Alfred.....Instructor in General Engineering
B.S. in C.E., Washington.
- Jerbert, Arthur Rudolph.....Assistant Professor of Mathematics
Ph.D., Washington.
- Jessup, John H.....Associate Professor of Education
M.A., Iowa.
- Johnson, Arlien.....Lecturer in Sociology
M.A., Columbia.
- Johnson, Charles Willis.....Professor of Pharmaceutical Chemistry; Dean of
the College of Pharmacy
Ph.C., Ph.D., Michigan.
- Jones, Robert William.....Associate Professor of Journalism
LL.B., Missouri; M.A., South Dakota.
- Kahin, Helen.....Associate in English
M.A., Indiana.
- Karshner, Warner Melvin.....Lecturer in Bacteriology
M.S., Washington; M.D., Northwestern Medical.
- Kennedy, Fred Washington.....Director of Journalism Laboratories

- Kennedy, Roy J.....Research Professor in Physics
Ph.D., Johns Hopkins.
- Kenworthy, Ray W.....Instructor in Physics
M.S., Iowa.
- Kerrigan, Sylvia Finlay.....Associate in English
M.A., Washington.
- Kimmel, Edward, Colonel, C.A.C....Professor of Military Science and Tactics
B.S.; M.A., State College of Washington.
- Kincaid, Trevor.....Professor of Zoology
M.A., Washington.
- King, Joseph C.....Instructor in Naval Science and Tactics
- Kirchner, George.....Instructor in Music
Leipzig.
- Kirsten, Friedrich Kurt.....Professor of Aeronautical Engineering
B.S., E.E., Washington.
- Kobe, Kenneth Albert.....Instructor in Chemical Engineering
B.S. in C.E.; Ph.D., Minnesota.
- Kunde, Norman Frederick.....Instructor in Physical Education for Men
M.A., Washington.
- Lamont, D. J.....Associate in Physical Education for Men
LL.B., Loyola University.
- Lamson, Joseph Voris.....Instructor in General Engineering
B.S. in E.E., Washington.
- Landes, Henry.....Professor of Geology and Mineralogy; Dean of the
College of Science
M.A., Harvard.
- Langenhan, Henry August.....Professor of Pharmacy
Ph.C., Illinois; Ph.D., Wisconsin.
- Lantz, Harvey.....Professor of Law
M.A., DePauw; LL.B., Kent Law School.
- Larsen, Margaret A....Instructor in Pediatric Nursing, Harborview Hospital
R.N., Women's Hospital, Philadelphia; B.S., Texas.
- Lawrence, Charles Wilson.....Assistant Professor of Music
M.A. (Music), Washington.
- Lawson, Jane Sorrie.....Assistant Professor of English
M.A., St. Andrews (Scotland).
- Leach, Katherine.....Instructor in Operating Rooms, Harborview Hospital
R.N., Presbyterian Hospital, Chicago; B.A., Brown.
- Lindblom, Roy Eric.....Assistant Professor of Electrical Engineering
M.S. (E.E.), Washington.
- Listman, Grace.....Instructor in Supervising at Harborview Hospital
R.N., Swedish Hospital, Seattle; B.S., Washington.
- Littell, Roland B.....Instructor in Naval Science and Tactics
- Loew, Edgar Allen.....Professor of Electrical Engineering
E.E., Wisconsin.
- Loughridge, Donald H.....Assistant Professor of Physics
Ph.D., California Institute of Technology.

- Lucas, Henry Stephen.....Associate Professor of History
Ph.D., Michigan.
- Lynch, James E.....Associate Professor of Fisheries
Ph.D., California.
- Lynn, Eldin Verne.....Professor of Pharmacology and Chemistry
Ph.D., Wisconsin.
- McConahey, James.....Lecturer in Business Administration
M.S., LL.B., Northwestern; C.P.A.
- McCormack, Harvey William, Commander, U.S.N.....Professor of Naval
Science and Tactics
Graduate, U.S. Naval Academy; M.A., Columbia; Graduate, Naval War College.
- McCreery, Ruth Allen.....Instructor in Music
B.M., Washington.
- McFarlan, Lee Horace.....Assistant Professor of Mathematics
Ph.D., Missouri.
- McGownd, Matilda Jane.....Assistant Professor of Physical Education for
Women
M.A., Columbia.
- McGrew, J. Fred.....Assistant Professor of English
M.A., Wisconsin.
- McIntyre, Harry John.....Associate Professor of Mechanical Engineering
B.S. (M.E.); M.B.A., Washington.
- McKay, George F.....Assistant Professor of Music
B.Mus., Rochester.
- McKenzie, Vernon.....Professor of Journalism; Dean of the School of
Journalism
M.A., Harvard.
- McMahon, Edward.....Professor of American History
M.A., Wisconsin.
- McMahon, Theresa Schmid.....Professor of Economics
Ph.D., Wisconsin.
- McMinn, Bryan Towne.....Assistant Professor of Mechanical Engineering
M.E., Washington.
- MacDonald, Burns, Jr., Lieutenant, U.S.N.....Assistant Professor of Naval
Science and Tactics
- Mackenzie, Donald H.....Instructor in Business Administration
M.B.A., Washington.
- Magnusson, Carl Edward.....Professor of Electrical Engineering; Director
of Engineering Experiment Station
E.E.; Ph.D., Wisconsin.
- Mander, Linden A.....Associate Professor of Political Science
M.A., Adelaide (Australia).
- Mansfield, Robert S.....Instructor in Journalism
M.A., Michigan.
- Martin, Charles Emanuel.....Professor of Political Science
Ph.D., Columbia.
- Martin, Howard Hanna.....Associate Professor of Geography
Ph.D., George Washington.

- Martin, Robert.....Associate in Sociology
M.A., Washington.
- May, Charles Culbertson....Professor of Civil Engineering and Architecture;
Superintendent of Buildings and Grounds
B.S. (C.E.), Washington.
- Maydahl, Bergete.....Associate in Physical Education for Women
B.S. in Physical Education, Washington.
- Meany, Edmond Stephen.....Professor of History
M.S., Washington; M.L., Wisconsin; LL.D., College of Puget Sound.
- Mechem, Frank Lawrence.....Professor of Law
LL.B.; Ph.B., Chicago.
- Meisnest, Frederick William.....Lecturer in German
Ph.D., Wisconsin.
- Miller, Alfred Lawrence.....Associate Professor of Civil Engineering
C.E., Washington.
- Miller, Charles John.....Assistant Professor of Business Administration
M.B.A., Washington.
- Miller, John William.....Assistant Professor of Aeronautical Engineering
C.E., Nebraska.
- Miller, Robert Cunningham.....Associate Professor of Zoology
Ph.D., California.
- Milliman, Loren Douglas.....Associate Professor of English
B.A., Michigan.
- Mills, Russell.....Associate Professor of Forestry
B.S. in Forestry, Washington.
- Milner, Fred C., Captain, Infantry.....Assistant Professor of Military
Science and Tactics
- Mitchell, Thomas G.....Assistant Health Officer
M.D., Michigan.
- Moran, Edward J., Lieutenant Commander, U.S.N.....Assistant Professor of
Naval Science and Tactics
Graduate, U.S. Naval Academy.
- More, Charles Church.....Professor of Structural Engineering
M.S.; C.E., Lafayette; M.C.E., Cornell.
- Moritz, Harold Kennedy.....Assistant Professor of Civil Engineering
B.S. (M.E.), Massachusetts Institute of Technology.
- Moritz, Robert Edouard.....Professor of Mathematics
Ph.D., Nebraska; Ph.N.D., Strassburg.
- Mullemeister, Hermance.....Assistant Professor of Mathematics
Ph.D., Royal University of Utrecht, Holland.
- Mund, Vernon A.....Assistant Professor of Economics and Business
Administration
Ph.D., Princeton.
- Munro, Kathleen.....Assistant Professor of Music
M.A., Columbia.
- Neikirk, Lewis Irving.....Assistant Professor of Mathematics
Ph.D., Pennsylvania.

- Nielson, Henry S., Lieutenant, U.S.N.....Assistant Professor of Naval Science and Tactics
Graduate, U.S. Naval Academy.
- Nelson, Everett.....Assistant Professor of Philosophy
Ph.D., Harvard.
- Newbury, Kirsten Larssen.....Instructor in Physics
Ph.D., Minnesota.
- Nix, Martha J.....Associate in English
M.A., Washington.
- Norris, Earl R.....Assistant Professor of Chemistry
Ph.D., Columbia.
- Northrup, Mary W.....Instructor in Diet Therapy, Harborview Hospital
M.S., Columbia.
- Nottelmann, Rudolph H.....Professor of Law
M.A., Illinois; LL.B., Yale.
- O'Bryan, Joseph Grattan.....Professor of Law
B.A., Jesuit College (Denver); LL.D., Regis College.
- O'Keefe, Jessie.....Instructor in Home Economics
M.S., Washington.
- Olcott, Virginia.....Instructor in Clinical Practice for Harborview Hospital
M.S., Washington.
- Oliver, Louise Benton.....Instructor in Music
B.M., Washington.
- Orr, Frederick Wesley.....Professor of English
G.C.D., Boston School of Expression; M.A., Lawrence College.
- Osborn, Frederick Arthur.....Professor of Physics
Ph.D., Michigan.
- Padelford, Frederick Morgan....Professor of English; Dean of the Graduate School; Assistant Vice President
Ph.D., Yale.
- Patterson, Ambrose.....Assistant Professor of Painting
Melbourne National Gallery, Victoria, Australia; Julien, Colorossi and Delocluse Academies, Europe.
- Patzer, Otto.....Professor of French
Ph.D., Wisconsin.
- Payne, Blanche.....Assistant Professor of Home Economics
M.A., Columbia.
- Pellegrini, Angelo.....Associate in English
B.A., Washington.
- Penington, Ruth.....Instructor in Painting
M.F.A., Washington.
- Phelan, James.....Associate in Physical Education for Men
B.A., Notre Dame.
- Phifer, Lyman D.....Assistant Director of Oceanographic Laboratories; Instructor in Oceanography
Ph.D., Washington.
- Phillips, Herbert Joseph.....Associate in Philosophy
B.A., Washington.
- Pollard, Robert Thomas.....Assistant Professor of Oriental Studies
Ph.D., Minnesota.

- Powell, Sargent.....Assistant Professor of Chemistry
Ph.D., Illinois .
- Powers, Francis Fountain.....Assistant Professor of Education
Ph.D., Washington.
- Pratt, Dudley.....Assistant Professor of Sculpture
B.A., Yale.
- Preston, Howard Hall.....Professor of Business Administration
Ph.D., Iowa.
- Pries, Lionel Henry.....Instructor in Architecture
B.A., California; M.Arch., Pennsylvania.
- Priest, Harold Ragan, Captain, Infantry.....Assistant Professor of Military
Science and Tactics
- Putnam, Marguerite.....Associate in Library Science; Acquisition Librarian
B.A., B.S. (L.S.), Washington.
- Puymbroeck, Lea.....Associate in Design
B.F.A., Washington.
- *Quainton, Cecil Eden.....Assistant Professor of History
B.A., Cambridge.
- Rader, Melvin Miller.....Assistant Professor of Philosophy
Ph.D., Washington.
- Radford, Anne.....Instructor in Surgical Nursing, Harborview Hospital
R.N., Boston City Hospital School of Nursing.
- Radford, Ethel Sanderson.....Associate in Chemistry
B.A., McGill.
- Rahskopf, Horace G.....Assistant Professor of English
M.A., Iowa.
- Raitt, Effie Isabel.....Professor of Home Economics
M.A., Columbia.
- Ramsey, J. Finlay.....Lecturer in General Medicine, Harborview Hospital
B.S., Washington; M.D., Oregon.
- Read, William Merritt.....Assistant Professor of Classical Languages
Ph.D., Michigan.
- Reed, Florence.....Instructor in Physical Education for Women
M.A., Teachers' College, Columbia.
- Renner, George Thomas, Jr.....Associate Professor of Geography
Ph.D., Columbia.
- Rhodes, Fred H., Jr.....Instructor in Civil Engineering
B.S. (M.E.), B.S. (C.E.), Washington.
- Rhodes, Helen Neilson.....Assistant Professor of Design
B.A., Washington.
- Richards, John W.....Assistant Professor of Law
LL.M.; J.S.D., Harvard.
- Richardson, Oliver Huntington.....Professor Emeritus of European History
Ph.D., Heidelberg.
- Rigg, George Burton.....Professor of Botany
B.Di., Iowa; Ph.D., Chicago.

*On leave, autumn quarter, 1932-33.

- Ritchie, John III.....Assistant Professor of Law
B.S., Virginia; J.S.D., Yale.
- Rivers, Elizabeth Anne.....Assistant Professor of Home Economics
M.A., Columbia.
- Roberts, Milnor.....Professor of Mining and Metallurgy; Dean of the
College of Mines
B.A., Stanford.
- Robinson, Rex J.....Instructor in Analytical Chemistry
Ph.D., Wisconsin.
- Rosen, Moritz.....Professor of Music
Graduate, Warsaw Conservatory, Russia.
- Rounsefell, George A.....Lecturer in Fisheries
Ph.D., Stanford.
- Rowlands, Thomas McKie.....Instructor in General Engineering
B.S. (Nav. Arch. and Marine Engr.), Mass. Institute of Technology.
- Rowntree, Jennie Irene.....Associate Professor of Home Economics
Ph.D., Iowa.
- Rulifson, Leone Helmich.....Associate in Physical Education for Women
B.S., Washington.
- Savery, William.....Professor of Philosophy
Ph.D., Harvard.
- Schaller, Gilbert Simon.....Associate Professor of Shop Engineering
B.S., Illinois; M.B.A., Washington.
- Schertel, Max.....Associate in German
Ph.D., Washington.
- Schultz, Leonard Peter.....Assistant Professor of Fisheries
Ph.D., Washington.
- Seagrave, Mabel.....Lecturer in Gynecology, Harborview Hospital
B.A., Wellesley; M.D., Johns Hopkins.
- Seeman, Albert L.....Assistant Professor of Geography
Ph.D., Washington.
- Sergev, Sergius I.....Instructor in Civil Engineering
M.E., Washington.
- Shaw, Joseph W.....Lecturer in Dermatology and Syphilology, Harborview
Hospital
M.A.; M.D., Michigan.
- Shefelman, S. Harold.....Lecturer in Law
Ph.B., Brown; LL.B., Yale.
- Shepherd, Harold.....Professor of Law; Dean of the Law School
B.A.; J.D., Stanford.
- Shuck, Gordon Russell.....Associate Professor of Electrical Engineering
E.E., Minnesota.
- Sidey, Thomas Kay.....Professor of Latin and Greek
Ph.D., Chicago.
- Simpson, Lurline Violet.....Instructor in French
Ph.D., Washington.
- Sivertz, Victorian.....Instructor in Chemistry
Ph.D., McGill.

- Slyfield, Frederick.....Lecturer in Tuberculosis, Harborview Hospital
M.D., Iowa.
- Skinner, Macy Milmore.....Professor of Business Administration
Ph.D., Harvard.
- Smith, Charles Wesley.....Librarian; Professor of Library Science
B.A.; B.L.S., Illinois.
- Smith, Eli Victor.....Associate Professor of Physiology
Ph.D., Northwestern.
- Smith, Frederick Charnley.....Instructor in General Engineering
C.E., Washington.
- Smith, George McPhail.....Professor of Inorganic Chemistry
Ph.D., Freiburg (Germany).
- Smith, George Sherman.....Assistant Professor of Electrical Engineering
E.E., Washington.
- Smith, Harriett.....Assistant Professor of Nursing Education, Harborview
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R.N., Seattle General Hospital; B.A., Mount Holyoke.
- Smith, Harry Edwin.....Professor of Business Administration; Director of
the Extension Service
Ph.D., Cornell.
- Smith, Stevenson.....Professor of Psychology; Director of the Gatzert
Foundation
Ph.D., Pennsylvania.
- Soule, Elizabeth.....Associate Professor of Nursing Education
R.N., Malden Hospital, Massachusetts; M.A., Washington.
- Specter, Itzehak.....Associate in English
Ph.D., Chicago.
- Sperlin, Ottis Bedney.....Lecturer in English
Ph.M., Chicago.
- Steiner, Jesse Frederick.....Professor of Sociology
Ph.D., Chicago.
- Stiley, Joseph F., Captain, C.A.C....Assistant Professor of Military Science
and Tactics
- Stirling, Brents.....Associate in English
B.A., LL.B., Washington.
- Stone, Edward Noble.....Associate Professor of Classical Languages
M.A., Olivet.
- Strother, Charles.....Associate in English
B.A., Washington.
- Sullivan, Ora.....Instructor in Psychiatric Nursing, Harborview Hospital
R.N., Presbyterian Hospital, New York; B.S., Washington.
- Tartar, Herman Vance.....Professor of Chemistry
Ph.D., Chicago.
- Taylor, Edward Ayres.....Professor of English
Ph.D., Chicago.
- Terrell, Margaret Elma.....Instructor in Home Economics; Director of
Dining Halls and Dormitories
M.A., Chicago.

- Terry, Miriam.....Instructor in Music
B.M., Washington.
- Terzieff, Otilie.....Associate in German
M.A., Washington.
- Thomas, Harlan.....Professor of Architecture
B.S., State Agricultural College of Colorado.
- Thompson, Thomas Gordon.....Professor of Chemistry; Director of
Oceanographic Laboratories
Ph.D., Washington.
- Thompson, William F.....Professor of Fisheries
Ph.D., Stanford.
- Thomson, David.....Professor of Latin; Vice President
B.A., Toronto.
- Tiemroth, Harold H., Lieutenant (J.G.), U.S.N.....Assistant Professor of
Naval Science and Tactics
Graduate, U.S. Naval Academy.
- Torney, John F.....Instructor in Physical Education for Men
M.A., Columbia.
- Truax, Arthur.....Lecturer in Business Administration
- Tuttle, Aileen.....Instructor in Medical Nursing, Harborview Hospital
R.N., Presbyterian Hospital, Chicago; B.S., Washington.
- Tyler, Richard G.....Professor of Sanitary Engineering; Dean of the
College of Engineering
C.E., Texas.
- Tymstra, Sybren Ruurd.....Instructor in General Engineering
M.E., Zwickau (Germany)
- Uhl, Willis Lemon.....Professor of Education; Dean of the School of
Education
Ph.D., Chicago.
- Ulbrickson, Alvin.....Associate in Physical Education for Men
B.B.A., Washington.
- Umphrey, George Wallace.....Professor of Romanic Languages
Ph.D., Harvard.
- Utterback, Clinton Louis.....Associate Professor of Physics
Ph.D., Wisconsin.
- Van de Walker, Frank Chester.....Instructor in Business Administration
M.B.A., Washington.
- Van Horn, Robert B.....Assistant Professor of Civil Engineering
C.E., Washington.
- Van Ogle, Louise.....Associate Professor of Music
Theoretical work, Dr. Bridge, Chester, England; Richter, Leipzig; Piano,
Godowsky, Berlin; Lhevinne, Berlin; Harold Bauer, Paris.
- Venino, Albert Franz.....Professor of Music
New York Conservatory of Music; Pupil of Leschetizky.
- Vickner, Bertha Almen.....Associate in English
M.A., Washington.
- Vickner, Edwin John.....Professor of Scandinavian Languages
Ph.D., Minnesota.
- Wade, Arthur E.....Lecturer in Home Economics
B.S., Cornell College; M.D., Sioux City College of Medicine.

- Wagenknecht, Edward Charles.....Assistant Professor of English
B.T., Union Theological College; Ph.D., Washington.
- Walters, Margaret C.....Associate in English
M.A., Yale.
- Warner, Frank Melville.....Associate Professor of Engineering Drawing
B.S. (M.E.), Wisconsin.
- Weaver, Charles Edwin.....Professor of Paleontology
Ph.D., California.
- Weinzirl, John.....Professor of Bacteriology
Ph.D.; Dr.P.H., Harvard.
- Welch, Ralph.....Associate in Physical Education for Men
- Welke, Walter.....Instructor in Music
B.M. (Edu.), Michigan.
- Werner, August.....Professor of Music
B.S., College of Agriculture, Stend, Norway.
- Wesner, Elenora.....Associate in German
M.A., Northwestern.
- West, Ossian J.....Lecturer in Anatomy, Harborview Hospital
M.D., Willamette.
- Wheeler, Bayard O.....Instructor in Business Administration
M.A., Washington.
- Whittlesey, Walter Bell.....Assistant Professor of French
M.A., Washington.
- Wilcox, Chester.....Associate in Physical Education for Men
B.S. (C.E.), Purdue.
- Wilcox, Elgin Roscoe.....Associate Professor of General Engineering
B.S.; Met.E., Washington.
- Williams, Curtis Talmadge.....Associate Professor of Education
Ph.D., Clark.
- Wilson, Florence Bergh.....Assistant Professor of Music
B.M., Washington; M.A., Columbia.
- Wilson, Francis Graham.....Associate Professor of Political Science
Ph.D., Stanford.
- Wilson, George Samuel....Professor of Mechanical Engineering; Consulting
Engineer
B.S., Nebraska.
- Wilson, Hewitt.....Professor of Ceramics
Cer.Engr., Ohio State University.
- Wilson, William Charles Eade.....Assistant Professor of Spanish
Ph.D., Washington.
- Wilson, William R.....Professor of Psychology; Director of
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Ph.D., Washington.
- Wiltamuth, Ralph, Captain, Infantry.....Assistant Professor of Military
Science and Tactics

- Wendesheim, Karl A.....Instructor in English
M.A., Washington.
- Winger, Roy Martin.....Professor of Mathematics
Ph.D., Johns Hopkins.
- Winkenwerder, Hugo.....Professor of Forestry; Dean of the College of
Forestry
M.F., Yale.
- Winslow, Arthur Melvin.....Professor of Mechanical Engineering
Ph.B., Brown; B.S., Massachusetts Institute of Technology.
- Winther, Sophus Keith.....Assistant Professor of English
Ph.D., Washington.
- Woerner, William.....Associate in Physical Education for Men
M.E., Purdue.
- Wood, Carl Paige.....Professor of Music
M.A., Harvard.
- Woodcock, Edith.....Instructor in Music
B.M., Rochester.
- Woolston, Howard B.....Professor of Sociology
Ph.D., Columbia .
- Worcester, John Locke.....Professor of Anatomy
M.D., Birmingham School of Medicine, Alabama.
- Worden, Ruth.....Assistant Professor of Library Science; Dean of the
Library School
B.A., Wellesley.
- Worman, Eugenie.....Associate in Design
B.A. (Educ.), Washington.

THE UNIVERSITY

HISTORY

The University was established at Seattle by the territorial legislature in January, 1861, and classes were opened on November 4 of that year in a building erected on a ten-acre tract which now lies in the heart of Seattle's metropolitan district. The University was moved to its present location on the shores of Lakes Washington and Union in 1895.

GOVERNMENT

Under the constitution and laws of the State, the government of the University is vested in a Board of Regents, consisting of seven members appointed by the Governor by and with the advice and consent of the Senate. Each regent is appointed for a term of six years.

ENDOWMENT AND SUPPORT

The University derives its support from legislative appropriation, student fees, and the income from real estate owned by the University.

EQUIPMENT

GROUNDS

The campus contains 582 acres, 109 of which are open water. The land is all within the city limits of Seattle and lies between Lakes Washington and Union, with a shore line of more than one mile on Lake Washington and of about a quarter mile on Lake Union.

BUILDINGS

The buildings now in use on the campus include the Aerodynamical Laboratory, Anderson Hall, Anatomical Laboratory, Bagley Hall and Annex, Central Store House, Commerce Hall, Denny Hall, Dormitories (Lewis and Clark), Education Hall, Engineering Hall, Fisheries Building, Forest Products Laboratory, Foundry and Shop Building, Good Roads Building, Green House, Guggenheim Hall, Men's and Women's Gymnasiums, Health Service Building, Henry Art Gallery, Home Economics Hall, Hydraulics Laboratory, Johnson Biological Laboratory, Library, Meany Hall, Mines Laboratory, Music Building, Observatory, Oceanographic Laboratory, Parrington Hall, Pharmacy Building, Philosophy Hall, Physics Hall, Power House, Practice Cottage, R.O.T.C. Armory and Headquarters Buildings.

LIBRARIES

The University Library contains 253,986 bound volumes. A stock of publications needed in advanced research is rapidly accumulating and special collections are being formed in a few fields. The Law School Library, with 57,710 volumes, is separately administered by the Law School. In addition to the libraries on the campus, the Seattle Public Library, with 501,704 volumes, is available to students.

MUSEUM

The museum of the University of Washington was created the State Museum by law in 1899. It aims to have its collections representative of the history, ethnology, geology and natural history of the state and adjacent regions, and of those countries with which the state has special relations.

HORACE C. HENRY GALLERY

The Horace C. Henry Gallery, with its collection representing the work of about 200 representative nineteenth century painters, is the gift of the late Horace C. Henry of Seattle. To supplement the permanent collection, travelling exhibitions are shown during the college year.

LABORATORIES

The University has laboratories fully equipped for work in all fields of study included in the curriculum.

UNITED STATES BUREAU OF MINES NORTHWEST EXPERIMENT STATION

The Department of Commerce maintains at the College of Mines its Northwest Experiment Station, which serves the Pacific Northwest and the coast regions of Alaska. The Mine Safety Station of the United States Bureau of Mines is also located on the campus.

ENGINEERING EXPERIMENT STATION

The Engineering Experiment Station was organized in 1917 to co-ordinate the engineering investigations in progress and to facilitate development of industrial research in the University.

BAILEY AND BABETTE GATZERT FOUNDATION FOR CHILD WELFARE

This foundation was established in 1910 by means of a gift from Sigmund Schwabacher and the executor of the will of Abraham Schwabacher and is under the administrative control of the Department of Child Welfare.

GENERAL INFORMATION

THE UNIVERSITY ORGANIZATION

The University of Washington is one of five institutions of higher education which complete the state's system of public education, the others being the state college and the three normal schools. To the University is given exclusive authority to instruct in the following major lines: aeronautical engineering, architecture, commerce, fisheries, forestry, journalism, law, library science, marine engineering and medicine.

The University has concurrent authority with the state college to instruct in the following major lines: chemical engineering, civil engineering, electrical engineering, home economics, liberal arts, mechanical engineering, mining, pharmacy, professional training of high school teachers, school supervisors and school superintendents, and pure science.

Schools and Colleges and Their Fields. The University is organized in the following schools and colleges:

(a) *The Colleges of Liberal Arts and Science*, which provide a liberal education in arts and pure science, in a course normally requiring 12 quarters of residence, leading to the degrees of bachelor of arts and bachelor of science.

(b) The professional and technical schools and colleges, including:

1. *The College of Business Administration*, covering the fundamental scientific training in industry and commerce in a course of 12 quarters leading to the degree of bachelor of business administration.

2. *The School of Education* requires for admission six quarters of approved work in any college of the University, and offers an advanced course of six quarters preparing students for careers as high school teachers and school administrators. The degrees are bachelor of arts or bachelor of science, in education. Students in the College of Liberal Arts may major in the department of education and receive the degree of bachelor of arts.

3. *The College of Engineering* has six departments: aeronautical, chemical, civil, electrical, mechanical and commercial engineering, with curricula of 12 quarters leading to the degree of bachelor of science in the special field chosen by the student. The degree of master of science in each field is open to graduate students.

4. *The College of Fine Arts* offers curricula of 15 quarters in architecture, and 12 quarters in vocal, instrumental or public school music, or musical theory, painting, sculpture and design, public school drawing, and music and drawing, leading to the degrees of bachelor of architecture, bachelor of music and bachelor of fine arts, or bachelor of arts with a major in one of the subjects named.

5. *The College of Forestry* offers a curriculum of 12 quarters preparing for work in scientific forestry or in the lumber industry, leading to the degree of bachelor of science in forestry. The full professional course is 15 quarters, with a liberal allowance of electives, giving opportunity for specialization in forest service and state work, logging engineering, forest products, or the lumber business. For this course the degree of master of science in forestry or master of forestry is given in the Graduate School.

6. *The School of Journalism* requires for entrance junior standing, that is, completion of two years of college work in liberal arts. The curriculum leads to the degree of bachelor of arts in journalism and prepares its students for practical newspaper work.

7. *The School of Law* is a member of the Association of American Law Schools, approved by the American Bar Association, and is the

standard of approved law schools for admission to the bar of this state. The curriculum of the school covers nine quarters, leading to the degree of bachelor of laws. The degree of juris doctor (J.D.) is given also. Beginning with the academic year of 1934, all students entering the Law School must have three years of academic training.

8. *The Library School* prepares students for librarianship in a technical curriculum extending through three quarters following either three or four years of academic study. On completion of the library school curriculum (45 credits), the degree of bachelor of science in library science is given.

9. *The College of Mines* offers curricula of 12 quarters leading to the degree of bachelor of science in mining and metallurgy, mining and geology, and ceramic engineering. The fields open to graduates of this college are indicated by these divisions. The college also offers a curriculum in ceramics (clay, glass and cement products). The degree of master of science, with a major in one of these lines, may be obtained in the Graduate School.

10. *The College of Pharmacy* offers a four-year course providing a well-rounded scientific training in this field, and leading to the degree of bachelor of science in pharmacy. A fifth year in the Graduate School offers an opportunity for graduate research work leading to the degree of master of science in pharmacy. Students may continue graduate work leading to the degree of doctor of philosophy with major in pharmacy.

(c) *The Graduate School* offers work leading to the degrees of master of arts, master of science, master of arts or master of science in technical subjects, certain technical or professional master's degrees (as, for example, master of business administration), and doctor of philosophy. A master's degree presupposes at least one year of resident work of high grade and special character, and a doctor's degree at least three years of such work.

Definitions and Explanations. In all statements relating to the University the word *course* refers to a single study pursued for a definite period, for which credit may be given toward University requirements for graduation in accordance with the number of hours taken. A *curriculum* is a group of courses arranged to be followed consecutively or concurrently. A *department* is the unit of instructional organization in a particular science or art, as the department of geology. A *college* gives full curricula, beginning with the work of the freshman year and covering 12 quarters. The work of a *school* is preceded by two or more years of college work.

The four-year programs of the Colleges of Liberal Arts and Science are divided into the *lower division* (freshman and sophomore) and *upper division* (junior and senior).

The term *unit* is applied to work taken in high school; a *credit* to work taken in college. To count as a unit, a subject must be taught five times a week, in periods of not less than 45 minutes, for a school year of 36 weeks. A University credit is given for one hour of recitation a week throughout one quarter. Thus a quarter course in which there are five recitations a week is a five-credit course.

The term *major* is applied to the department or subject in which a student elects to specialize.

Special Curricula Within the Schools. Certain semi-professional curricula are given for which no special school or college is provided. Such is the curriculum in fisheries in the College of Science.

The University does not give a medical course, but offers a pre-medical curriculum especially planned as a foundation for study in a medical school.

This may be two years in length for schools not requiring college graduation, or four years for schools requiring that amount of preparation.

Under provisions of the National Defense Act, students in the University may attain commissions as reserve officers in the United States Army by meeting the requirements for advanced work in military science. This can be done without interference with the student's regular academic work.

The Four-Quarter System. The University is operated on the four quarter system, each quarter having approximately 12 working weeks. The autumn quarter begins in October, the winter quarter in January, the spring quarter in April, and the summer quarter in June. The University is closed only through September. Careful reading of the calendar will show the working of this plan in detail. Students may enter at the beginning of any quarter. The quarter system permits them to do a full quarter of University work in the summer in most curricula; to complete a university course in three years if health and resources permit; or otherwise to adjust their university residence to meet personal conditions.

ADMISSION TO THE UNIVERSITY

GENERAL STATEMENT

All correspondence regarding admission of students to the resident courses of the University and requirements for graduation, should be addressed to the registrar.

Students are admitted to the resident work of the University by certificate or by examination. Only recommended graduates of fully accredited four-year secondary schools are admitted on certificate. The University reserves the right to reject any application for cause. Students are classified as graduates and undergraduates. Undergraduates are classified as regular students (freshmen, sophomores, juniors and seniors), unclassified students, and special students.

ADMISSION BY CERTIFICATE

A graduate of a four-year accredited secondary school, whose course has covered the requirements for entrance and who meets the scholarship requirement outlined below, will be admitted upon recommendation of his principal and the presentation of a satisfactory certificate. Since school diplomas do not give the necessary information, they cannot be accepted for this purpose. Principals of all accredited high schools in the state are furnished with official blanks, which also may be obtained from the registrar's office. Credentials accepted toward admission to the University are kept on permanent file.

Credentials for students expecting to enter the University in the autumn quarter, 1932, should be filed in the registrar's office not later than August 15. Owing to the congestion of correspondence during the two weeks prior to the opening of each quarter, it is impossible to reply at once to letters and applications sent in during these periods.

It is obligatory to submit at entrance records from all schools previously attended.

No student may be accepted for admission who would not be recommended to the university of his home state.

A student graduating from a school system which provides for less than 12 years of instruction may be held for additional high school work.

ENTRANCE REQUIREMENTS

1. *Graduation from an accredited high school.*

2. *Recommendation.* This consists of a recommendation by the principal based on recommending grades (see definition below) in the secondary work completed, and on his belief that the student is worthy of the educational advantages he is seeking.

3. *Subject Requirements.* These consist of 12 units* taken entirely in the tenth, eleventh, and twelfth grades. Of these there must be two units in English, one unit in plane geometry and at least five additional units in academic groups (English, mathematics, natural science, social science, and foreign language). For an exception in the case of business administration, see below. Less than one unit will not be counted in physics, chemistry, or a foreign language.

4. *Admission to one of the Colleges of the University.* For admission to one of the colleges of the University, satisfactory credentials covering minimum requirements of the particular college must be presented. As part of the 12 unit requirement, the academic subjects (English, mathematics, natural science, social science, and foreign language) must total at least eight units, except in the case of the College of Business Administration. Requirements of each college are shown in the following table:

College	English	Mathematics	For. Lang.	Lab. Science	Other Subjects
Liberal Arts	2	1 (Pl. Geom.)	2nd unit of one†	**	8
Science	2	1 (Pl. Geom.)	2nd unit of one†	***	8
Bus. Admin.	2	1 (Pl. Geom. or Adv. Alg.)	.....	**	9‡
Engineering and Mines	2	2 (Pl. Geom. 1 Scl. Geom. ½ Adv. Alg. ½)	.....	1 (Physics)	7
Fine Arts	2	1 (Pl. Geom.)	2nd unit	**	8
Forestry	2	1½ (Pl. Geom. 1 & Adv. Alg. ½)	2nd unit of one†	***	7½
Pharmacy	2	1 (Pl. Geom.)	.....	**	9

In general the "other subjects" which may be selected by the high school student should include as far as practicable those subjects in the requirements of his chosen college which may be taken either in high school or in college. When these are taken in high school, the student has a wider choice of electives in college. Some of these are: history, including U.S. history, two units; physics or chemistry; a biological science—botany or zoology; foreign language. For further information see the bulletin of the selected college.

The College of Fine Arts is announcing a requirement of one unit in plane geometry effective for the music and fine arts curricula. This is effective beginning with the autumn quarter of 1933. Students prior to that time, applying for architecture, must present plane geometry.

*To count as a unit, a subject must be taught five times a week, in periods of not less than 45 minutes, for a high school year of 36 weeks. In satisfying entrance requirements with college courses, a minimum of ten quarter credits is counted as the equivalent of the entrance unit.

†The first unit may be completed in the ninth grade as a regular part of the junior high school curriculum. As such it does not carry entrance credit. If taken in the senior high school, it will count as a part of the 12 units required.

**It is recommended that at least one unit of a laboratory science be taken.

***Physics is recommended.

‡A student who presents three units of commercial subjects will be held for six academic subjects out of the 12 required units.

The College of Forestry, beginning with the autumn quarter of 1934, will require two units of a foreign language.

The College of Pharmacy announces a requirement of one unit in plane geometry effective beginning with the autumn quarter of 1933. The College of Pharmacy also recommends that prospective students take a foreign language for two years, one of which may be taken in the ninth grade.

Students in any college electing work in the Naval Reserve Officers' Training Corps are required to present plane geometry and plane trigonometry. For the naval course in aviation flight training (entered at the beginning of the senior year), in addition to the above, the student must have had elementary physics, solid geometry, and college algebra. In most cases plane trigonometry and college algebra may be taken during the freshman year, but the student who is planning to apply for admission to the Naval R.O.T.C. should take physics, plane and solid geometry, and advanced algebra while in high school.

A student is advised not to attempt to enter the University until he is able to register without deficiencies in his chosen college. Under certain circumstances, and with the approval of the dean of the college concerned, certain specific college requirements may be removed after entrance in the University. In general, requests of this kind are denied.

5. *Comprehensive Admission Requirements to all Colleges.* If a student is uncertain as to the college he desires to enter, satisfactory completion of the following requirements will make him eligible to any college in the University, although all of the subjects are not required in every college:

English	2	units
Foreign language (second year) ¹	1	unit
Plane and solid geometry	1½	units
Advanced algebra	½	unit
Physics	1	unit
Other subjects (see under 4)	6	units
Total	12	units

6. *Scholarship Required—Recommending Grades.* A minimum of 11 units out of the 12 required in the senior high school must be represented by grades which are at least one step above the passing mark when letters are used to designate grades, or above the passing percentile grade at least one-fourth of the difference between the passing grade and 100 per cent. Such grades shall be known as recommending grades.

An application for admission not complying with the above requirements may be reviewed by a committee appointed by the president of the University to determine whether the record gives promise of successful University work and to decide whether the application should be accepted. (For definition of grade points, see page 58.) If a student, however, has less than 11 units of recommending grades out of 12 units, he may be admitted to the University, provided that such student has a 2.5 (B-) grade point average for the work of the tenth, eleventh and twelfth grades.

7. *Students Failing to Meet Scholarship Requirements.* A student who fails to present recommending grades in the required number of units at the time of graduating from high school may either return to high school for further study or take the entrance examinations of the College Entrance Examination Board in certain subjects approved by the dean of the college concerned.

¹ The first unit is usually taken in the ninth grade. If taken later, it will count as part of the 12 units required.

When a student repeats or reviews subjects for the purpose of earning recommending grades, he should choose, when choice is possible, subjects which will be of greatest value to him in his college work. The advice of the high school principal should be sought in deciding upon approved subjects. The University reserves the right to refuse to accept credentials covering repeated or additional high school work as an adequate basis for admission. The high school principal's special recommendation should accompany the transfer of such additional credits.

Information regarding College Entrance Board examinations may be obtained from the College Entrance Examination Board, 431 West 117th St., New York, N.Y.

ACCREDITED SCHOOLS

The University of Washington depends on the State Board of Education for lists of accredited public and private high schools for the State of Washington.

SCHOOLS OUTSIDE OF WASHINGTON

Graduates of public accredited secondary schools outside of Washington will be admitted on the same terms as graduates of the accredited high schools of Washington, except that no such graduate shall be admitted who would not be recommended to the university of his own state. Graduates of accredited private secondary schools outside of Washington, unless in the upper quartile of a graduating class of 12 or more, shall be required to qualify for admission by means of the College Entrance Board Examinations.

ADMISSION BY EXAMINATION

1. Certificate of successful examinations before the College Entrance Examination Board will be accepted. Students planning to enter the University by examination shall arrange their selection of subjects so that they will have no deficiencies for the college they elect, i.e., the College of Science, Liberal Arts, Engineering, etc.

2. Students who have not graduated from high school and who do not plan to do so must enter by examination. All examinations will be given by the College Entrance Examination Board.

3. Definite information regarding the necessary examinations may be obtained from the registrar of the University. Applications for these examinations should be made to the College Entrance Examination Board as directed below.

ADMISSION TO ADVANCED STANDING

Applicants for advanced standing are required to furnish a complete certified statement of both preparatory and college credits, together with a letter of honorable dismissal from the institution last attended.

Advanced Undergraduate Standing. Students who present complete transcripts and letters of honorable dismissal from other colleges of recognized rank, may be admitted to the advanced standing for which their training seems to fit them. For admission, however, the student must present a scholarship record equivalent to that required of resident students of the University of Washington. Definite advanced standing will not be given until the student has been in residence at least one quarter. No advanced credit will be given for work done in institutions whose standing is unknown, except upon examination.

Students Transferring from Colleges Having a Lower Standard of Admission than the University of Washington. A student applying to transfer

from a college having a lower standard of admission than the University of Washington shall be required to furnish the following information:

- (a) His status at the time of admission to college work.
- (b) His status and his detailed record at the end of his period of residence in the college.

In the event that the student's high school record was not such as to have admitted him to the University of Washington, the student will not be admitted until at least two years of college work shall have been completed with recommending grades; provided that a student who presents a record from his college covering one year of study and representing a program of work carried with exceptionally good grades, may be admitted upon the recommendation of the dean of the college which he desires to enter. It is understood that such a student will not be admitted without the recommendation of the college last attended. This rule applies to students making application for entrance to the University of Washington for the autumn quarter of 1933. Prior to the autumn quarter of 1933 one year's work with satisfactory grades will be accepted.

Admission of Normal School Graduates to Advanced Standing. Graduates of the two-year curriculum of approved normal schools may receive junior standing provided their credits meet the requirements of the University for entrance, scholarship standards, and credit-hour load.

For graduation with a bachelor's degree, a student admitted with advanced credit from a normal school must earn in the University a sufficient number of credits to bring the total up to a minimum of 180 quarter credits (exclusive of required physical education or military or naval science). He must satisfy such specific requirements of the degree as have not been fairly satisfied by previous work.

In fulfilling the requirements of university curricula that allow a large number of elective credits, such as that of the School of Education, normal school credits can usually be fairly well applied. As a rule, a student cannot count much more than two years of normal school work toward completion of curricula that require a major of 35 or more credits of consecutive and co-ordinated work in one department. In many set technical or professional courses only a very limited amount of normal school credit can be used.

School of Law. Requirements for admission to the School of Law are: clear entrance to the College of Liberal Arts or the College of Science; 90 credits, (two years) of advanced credit in freshman and sophomore courses, and the required credits of military or naval science or physical education. Students who have not complied with the foregoing, may be admitted to the Law School upon the completion of three years' work leading to a bachelor's degree in the University of Washington or any institution ranking therewith, provided further that such work shall meet with the approval of the dean of the Law School. Beginning with the academic year 1934, all students entering the Law School will be required to have complied with a three-year prescribed pre-law course.

School of Journalism. Requirements for admission to the School of Journalism are: clear entrance to the College of Liberal Arts; 90 credits (two years) of advanced credits in freshman and sophomore courses, covering all prescriptions for admission to upper division standing in the College of Liberal Arts, and the required credits of military or naval science or physical education.

School of Education. Requirements for admission to the School of Education are: clear entrance to any college of the University; 90 credits of college work in courses approved by the faculty of the School of Education and the faculty of the college concerned and the required credits of military or naval science or physical education.

Library School. 1. Graduate students are admitted who hold the baccalaureate degree from any college or university of good standing, whose undergraduate work in either or both high school and college has included at least 20 college credits each in German and French.

2. Students are admitted who have qualified for senior standing in the College of Liberal Arts or in the elective curricula in the College of Science, having earned 135 credits, and the required credits in military science, or physical education, 20 credits each in German and French and all required work. However, students who lack not more than 15 credits of senior standing (including the languages required above) may be admitted with permission of the dean, but such students must complete the required credits for graduation. Beginning with the autumn quarter of 1933 and thereafter, admission to the Library School will be granted only to college graduates who present standard bachelor of arts and bachelor of science degrees and satisfy the requirements in French and German.

ADMISSION TO GRADUATE STANDING

A bachelor's degree from a college or university of good standing is required for admission to the Graduate School. For further details, see the Graduate School section, page 116.

FOREIGN STUDENTS

Students from schools in foreign countries and non-English speaking communities will be admitted under the same general conditions as those from American schools, provided they have a sufficient working knowledge of English, acquaintance with American methods of instruction, and plans of study, to enable them to carry regular college work successfully.

In April of each year the College Entrance Examination Board offers an examination in foreign countries to test competence in the use of the English language on the part of students whose native tongue is not English. The University of Washington requires that its prospective students make a satisfactory rating in this test. The purpose is to dissuade from a long, expensive and fruitless journey those students who are certain to be unsuccessful because of an inadequate knowledge of English. Candidates for admission may obtain the preliminary announcement of this examination from the secretary of the College Entrance Examination Board, 431 West 117th Street, New York City, U.S.A.

Applicants from schools in the Philippine Islands should first have their papers examined and their knowledge of English tested by the Examining Board of the Philippine Islands. Arrangements may be made with Mr. Walter G. M. Buckisch, Commissioner of Private Education, Ayuntamiento, Manila, Philippine Islands.

Students from foreign schools whose standing is not known to be the equivalent of accredited American schools may be required to pass College Entrance Board examinations in representative subjects.

COLLEGE ENTRANCE EXAMINATION BOARD

The College Entrance Examination Board will hold examinations June 20 to 25, 1932, at nearly 400 points in the United States and abroad.

A list of places at which examinations will be held will be published about March 1, 1932. On the Pacific Coast, examinations are usually held at Seattle, Spokane, Portland, Berkeley, San Francisco, Stanford University and Los Angeles. Requests that the examinations be held at particular points should be transmitted to the secretary of the College Entrance Examination Board not later than February 1, 1932.

Detailed definitions of the requirements in all examination subjects are given in a circular of information published annually about December 1. Upon request to the secretary of the College Entrance Examination Board a single copy of this document will be sent to any teacher without charge. In general, there will be a charge of 25 cents, which may be remitted in postage.

All candidates wishing to take these examinations must make application by mail to the secretary of the College Entrance Examination Board, 431 West 117th Street, New York, N.Y. Blank forms for this purpose will be mailed by the secretary of the College Entrance Examination Board to any teacher or candidate upon request by mail.

The applications and fees of all candidates who wish to take the examinations in June, 1932, should reach the secretary of the Board not later than the dates specified in the following schedule:

For examination centers:

In the United States east of the Mississippi River or on the Mississippi.....	May 30, 1932
In the United States west of the Mississippi River or in Canada.....	May 23, 1932
Outside of the United States and Canada, except in Asia	May 9, 1932
In China or elsewhere in the Orient.....	April 25, 1932

Every application for examination which reaches the secretary of the Board on or before the scheduled date should be accompanied by an examination fee of \$10, which may be remitted by postal order, express order, or draft on New York to the order of the College Entrance Examination Board. An application, which reaches the secretary later than the scheduled date will be accepted only upon payment of \$5 in addition to the regular examination fee.

When a candidate has failed to obtain the required blank form of application, the regular examination fee will be accepted if the fee arrive not later than the date specified above and if it be accompanied by a memorandum with the name and address of the candidate, the exact examination center selected, and a list of the subjects in which the candidate is to take the Board examinations.

Candidates who have failed to file applications for examination may be admitted by the supervisor upon payment of a fee of \$5 in addition to the regular examination fee. Such candidates should present themselves at the beginning of the period of registration. They will receive from the supervisor blank forms of application which must be filled out and transmitted to the secretary of the College Entrance Examination Board.

In order to exhibit their tickets of admission and to obtain seats in the examination room, candidates should report for a morning examination at 8:45 and for an afternoon examination at 1:45. The examinations will be held in accordance with the time (standard time or daylight saving time) observed in the local schools.

ADMISSION OF SPECIAL STUDENTS

Special students are students of mature years who have not had the opportunity to complete a satisfactory high school course but who by reason of special preparation and attainments, may be qualified to undertake certain courses, though not as candidates for degrees.

No person less than 21 years of age will be admitted to the status of special student, but it is specifically emphasized that mere attainment of any given age does not constitute adequate qualification for admission to this status.

In general, a student from an accredited high school will not be admitted to this classification if he has been in attendance in the high school during the previous year.

The graduates of an accredited high school are not admitted as special students, but are expected to qualify for regular undergraduate standing in accordance with the general rules.

The University has no "special courses;" all courses are organized for regular students—that is, students who have had the equivalent of a good high school education and have been fully matriculated. Special students are admitted to those regular courses for which, in the judgment of the instructor, they have satisfactory preparation.

Entrance examinations in the subjects of fundamental importance for the work proposed will be assigned in all cases in which the Committee on Special Students deems such examinations advisable.

All available certified records for previous school work must be submitted to the registrar at least a month before the beginning of the quarter which the student desires to attend. Such a student must file an application for admission showing the kind of work he desires, the reasons for desiring such work, and if no credits can be presented, a detailed statement of any previous educational work and practical experience with a list of subjects in which the candidate is prepared to take entrance examinations. Special blanks for this information are provided.

By virtue of his classification, a special student is not eligible for any degree. He may ultimately become a candidate for a degree, however, by completing the admission requirements of the college in which he is enrolled.

Special students are not eligible to take part in student activities or to be initiated into a fraternity or a sorority.

Persons desiring to be admitted as special students will apply to the registrar for the necessary application and credential blanks.

ADVANCED CREDIT BY EXAMINATION

With the approval of the dean of the college or school concerned, a student may be examined for advanced credit in work that he has not followed in a college class in an accredited institution. Credits and grades so obtained must be certified by the examiner and the dean concerned. In no case shall the addition of these credits result in a total for any quarter above the number of credits for which the student involved would have been allowed to enroll in regular courses.

Persons who, while registered in the University, have attended courses as auditors, shall in no case be permitted to take the examination in such courses or obtain credit therefor.

A student desiring to take an examination for advanced credit must first file an application and obtain a permit at the registrar's office.

Special claims for advanced credit based on credentials are passed on by a committee consisting of the registrar and the dean of the college concerned.

Advanced credit by course examination may not cover more than half of the requirement for graduation. At least one-half of the student's work for a degree must be under the supervision of this or some other accredited university. Work under supervision here includes residence class work, extension class work and home study work.

A fee of \$1 a course number will be charged for all examinations outside the regular schedule.

AUDITORS

With consent of instructors concerned, any mature person, not registered as a student in the University, may be enrolled at the registrar's office as an auditor in not more than two courses on payment of a fee of \$12 each quarter. This provision does not apply to laboratory courses, or to courses offered in the summer quarter.

RULE 1. (a) In the summer quarter, any mature person, with the consent of the dean and the instructor concerned and upon payment of the regular tuition fee, may enroll at the registrar's office as auditor in any number of non-laboratory courses or the lecture parts of any number of laboratory courses.

(b) Persons who, while registered in the University, have attended courses as auditors, shall, in no case, be permitted to take the examination in such courses or obtain credit therefor.

No person may regularly attend any course in which he has not been registered or enrolled as an auditor.

THE EXTENSION SERVICE

Following are certain rules of the faculty and administrative decisions which should be noted by those who wish to obtain credit toward a University degree for their home study work:

(1) "Correspondence students in the Extension Service who have had the required preparation for admission to the University, and whose program has been approved, will upon satisfactory completion of their correspondence work receive a certificate of credit in the University, but the maximum credit for work done by correspondence may not exceed one-half of the credits required of resident students for graduation. Records of credits for correspondence study are filed separately until the student has satisfactorily completed one year in residence, when they become part of the University record."

(2) "The work of the senior year (a minimum of 36 credits earned in 36 weeks) must be done in residence." *Rule 9.*

(3) No student may take an extension course, either correspondence or class, while enrolled as a resident student in the University, without the consent of his dean, approved by the registrar and by the director of the Extension Service. This permission, on forms furnished for the purpose, must be filed in the registrar's office.

REGISTRATION

Autumn Quarter. Students enrolled in the University spring quarter are encouraged to pre-register during the preceding quarter for the autumn quarter. All new students whose credentials have been accepted by the registrar should register in early summer. There will be a four-day registration period before Freshman Week for all students who are not able to complete their registration earlier. Classes are reserved only for students whose fees are paid.

Winter and Spring Quarters. During each quarter there is a period for pre-registration for the following quarter. Every student in residence should take advantage of the opportunity to arrange his schedule in advance and avoid the difficulties arising in delayed registration. Students not in residence may register at any time before the beginning of instruction. Classes are reserved only for students whose fees are paid.

Summer Quarter. Students may register for the summer quarter from May to the beginning of instruction.

Registration is complete when the election blank has been signed by all required registering officers, when approved by sections, and all required fees have been paid. Classes are reserved only for students whose fees are paid. Registration by proxy is not permitted.

Late Registration. All students are expected to complete their registration, including payment of all required fees, prior to the dates given in the

except by special action of the Board of Deans. (If a student has been granted a leave of absence or has withdrawn in good standing during a preceding quarter he may

be given the privilege of late enrollment to complete unfinished courses, with the consent of the instructors concerned.)

University calendar for fee payment. Students failing to do this will be charged an additional fee of \$2 for the first day's delay, and a further cumulative fee of \$1 for each day thereafter. After the first week no student will be permitted to register.)

Changes in Registration. A change of registration is the addition to or the withdrawal from any course that appears on the election blank.

Upon presenting his receipt for fees, a student desiring to change his registration shall satisfy his dean as to the reason for the change and secure a change of registration card from his registering officer. He shall secure the signature of the instructor from whose class he wishes to withdraw, and of the instructor whose class he wishes to enter. He shall present the change of registration card at the sections window in the registrar's office for approval. He shall pay a fee of \$1 at the office of the business manager for each course change including the withdrawal from or the addition of one course at one time.

No change in registration involving entrance into a new course shall be permitted after the first week (seven days) following the beginning of instruction. No withdrawal from a course will be accepted during the last two weeks of the quarter.

RULE 3. Except with the consent of his dean:

- (a) No student shall be registered for less than 12 credits of work.
- (b) No student shall be registered for more than 16 credits of work (exclusive of military or naval science or physical education), or the number for the respective quarters in the prescribed curricula.

RULE 4. With the consent of his dean, a junior or senior whose previous scholastic record has been exceptionally good, may be registered for a maximum of 20 credits (exclusive of military or naval science or physical education).

RULE 5. No student may be registered for more than 20 credits (exclusive of military or naval science or physical education).

RULE 6. Work taken in non-credit courses or to remove entrance deficiencies shall count as a part of the schedule allowed.

RULE 7. A student who is obliged to do outside work must enter on his registration blank a statement of the nature of the work and the number of hours per week so used. In considering petitions for reinstatement the Board of Deans shall take no cognizance of outside work if it has not been noted on the student's registration blank.

RULE 8. A student who registers for an elective course must ultimately complete the course, unless relieved of the necessity by his dean. A student properly withdrawn and given a "W" shall not be affected by this rule.

MEDICAL EXAMINATIONS

All regular undergraduate students entering the University for the first time are required to pass a medical examination as a part of the registration requirements. Men will report to the Pavilion and women to the gymnasium on the date and hour designated when registering. This appointment takes precedence over all others scheduled for that hour. Students failing to appear for the medical examination at the appointed time will be excluded from classes on notice to the registrar. For a second appointment, and to compensate the University for the additional expense thereby necessitated, a special fee of \$5 must be paid.

INTELLIGENCE TEST

An intelligence test shall be given to all undergraduate students, who have not taken it previously, at a time to be announced each quarter.

A student, who for cause, is unable to attend the first test, may attend a make-up test to be given later. The fee for make-up test is \$1 as prescribed for delayed examination in Rule 27 of the General Regulations.

RULE 2. Unsatisfied prerequisites take precedence over other subjects. Any student having any unsatisfied entrance prerequisite must register for the work each quarter until the deficiency is removed. In special cases, permission to postpone the removal may be granted by the dean of the proper college.

EXPENSES

NOTICE: *The right is reserved to change the following fees without notice to present or future students.*

REGULAR TUITION FEES
FOR
AUTUMN, WINTER, AND SPRING QUARTERS

NOTE: Fees listed on next page under "Special Fees and Deposits" should be added to the following when applicable.

Resident Tuition Fee. A general tuition fee of fifteen dollars (\$15) each quarter is charged each regular student (except as noted below under *Exemptions*) who has been domiciled in this state or the Territory of Alaska for a period of one year prior to registration. Children of persons engaged in the military, naval, lighthouse, or national park service of the United States within the State of Washington are considered as domiciled within the meaning of this section and are not subject to the time limit of such domicile.

Deserving resident students who, after a quarter in school have shown a marked capacity for the work done by them, in lieu of paying the resident tuition fee, may give their promissory notes, bearing satisfactory indorsements, with interest at the rate of four per cent per annum. Applications for this concession must be presented to the business manager's office not later than the tenth day previous to the beginning of a quarter.

Non-Resident Tuition Fee. A general tuition fee of fifty dollars (\$50) each quarter is charged each regular student (except as noted below under *Exemptions*) who has not been domiciled in the State of Washington or the Territory of Alaska for a period of one year immediately prior to registration or who is not the child of a person engaged in the military, naval, lighthouse, or national park service within the state.

Prospective students from outside the State of Washington should bear in mind certain fundamental principles governing the legal interpretation of resident and non-resident tuition:

(a) The legal word *domicile* and the word *residence* are not equivalent terms; domicile requires more than mere residence.

(b) No one can acquire a domicile merely by residence in the State of Washington when such residence is for the purpose of attending an institution of learning.

(c) The domicile of a minor is that of his father; in the event of the death of his father, that of his mother; in the event of the death of both parents, that of the last deceased parent.

Exemptions. Employees of the University, teachers in the public schools of the state to whom Cadet Teacher Exemption Certificates are issued, and resident ex-service men and women are exempted from the payment of the general tuition fee. Non-resident ex-service men and women are exempted from the payment of one-half of the non-resident general tuition fee.

SUMMER QUARTER FEES

NOTE: Fees listed below under "Special Fees and Deposits" should be added to the following, when applicable.

At Seattle:

Regular Students. Tuition fee, thirty dollars (\$30); A.S.U.W. fee, one dollar (\$1).

Law Students. Tuition fee, thirty dollars (\$30); Law Library fee, ten dollars (\$10); A.S.U.W. membership fee, one dollar (\$1).

Employees of the University. No tuition fee; A.S.U.W. membership optional.

Auditors. Tuition fee, twelve dollars (\$12); A.S.U.W. membership optional. (See pages 42 and 43 for rules pertaining to auditors.)

At Friday Harbor:

Graduate Students. Tuition fee thirty-two dollars (\$32); A.S.U.W. membership optional.

Employees of the University. No tuition fee; A.S.U.W. membership optional.

SPECIAL FEES AND DEPOSITS

Incidental Fee. Eleven dollars (\$11) each quarter, except the summer quarter, is charged all regular students who *complete* registration on or before the seventh day previous to the last day for payment of pre-registration fees. If registration is not then *complete*, the incidental fee is twelve dollars (\$12), except in the case of properly exempted graduate students.

Associated Students Fee. A fee for membership in the Associated Students of the University of Washington (A.S.U.W.) is collected from all regularly enrolled undergraduate students, as follows: autumn quarter, five dollars (\$5); winter quarter, two dollars and fifty cents (\$2.50); spring quarter, two dollars and fifty cents (\$2.50); summer quarter one dollar (\$1). A.S.U.W. membership is optional for graduate students, employees of the University and auditors. Extension students are not extended the privilege of A.S.U.W. membership. (See page 56 for information relative to the Associated Students.)

Auditor's Fee. Twelve dollars (\$12) each quarter; A.S.U.W. membership optional. (See pages 42 and 43 for rules pertaining to auditors.)

Law Library Fee.....\$10.00 each quarter

Certain Course Fees

Individual instruction in applied music.....	25.00 each quarter
except in the summer quarter when it is.....	25.00 each term
Piano practice room—one hour a day.....	3.00 each quarter
Violin practice room—one hour a day.....	1.50 each quarter
Organ practice room—one hour a day.....	12.50 each quarter
Riding instruction fee (payable to riding academy)	12.00 each quarter
Golf instruction fee (payable to golf club).....	3.00 each quarter

Extension Service—See page 302 for fees.

Special Fees for Nurses

(Applicable to nurses in residence at approved hospitals)

Undergraduates	5.00 each quarter
Graduates	10.00 each quarter

Change of Registration Fee. A fee of one dollar (\$1) is charged for each course changed. Not subject to refund. (See page 44.)

Late Registration Fine. Students registering during the first week of instruction will be required to pay a fine of two dollars (\$2) for the first day and one dollar (\$1) additional for each day thereafter up to a total of seven dollars (\$7), except in the case of properly exempted graduate students. This fine is imposed also for re-establishing sections during the first week. Not subject to refund. (See page 43.)

Special Examination Fee. A fee of one dollar (\$1) will be charged for each examination outside the regular schedule. This also applies to the examination for foreign language reading required of all liberal arts students before graduation. Not subject to refund.

Grade Book Fee. One grade book is furnished without charge; a fee of fifty cents (\$.50) is charged for each additional book. Not subject to refund.

Graduation Fee. Each graduate receiving a baccalaureate or higher degree is required to pay a graduation fee of five dollars (\$5). The fee for a five-year normal or life diploma is two dollars and fifty cents (\$2.50). The fee for other professional certificates is one dollar (\$1). The five-year normal or life diploma fee does not include the legal registration fee of one dollar (\$1) which must be paid to the county school superintendent who first registers a teacher's diploma.

Transcript Fee. One transcript of a student's record is furnished without charge. A fee of one dollar (\$1) is charged for each additional transcript. Not subject to refund.

Locker Fee (Men). A fee of one dollar (\$1) per quarter is required of all men taking physical education courses requiring lockers. Lockers may be obtained by faculty members and students not registering for physical education at one dollar (\$1) per quarter. Locker tickets may be obtained at the office of the Associated Students.

Breakage Ticket Deposit. In certain laboratory courses a breakage ticket is required. This is used by the student to pay for laboratory supplies and breakage of equipment. The price ranges from three dollars (\$3) to five dollars (\$5). Tickets may be purchased at the business manager's office.

Military and Naval Uniforms. Each student registered for military or naval science is required to wear a uniform. In the army units, the student purchases his uniform from a contract tailor at a cost of approximately twenty-two dollars (\$22), the uniform being the property of the student. The government pays commutation to the students at the rate of ten dollars (\$10) for each of the first two required years of drill. Advanced students purchase a new uniform and are allowed thirty dollars (\$30) the first advanced year and ten dollars (\$10) the second.

In the naval unit a deposit is not required for uniforms which are furnished by the government and remain the property of the government. During the senior year, students in the naval unit are supplied with an additional blue service uniform which becomes their property at graduation.

EXAMPLES OF

AUTUMN, WINTER AND SPRING QUARTER FEES FOR VARIOUS TYPES OF REGISTRATION

NOTE: Fees listed under "Special Fees and Deposits" on pages 46 and 47 should be added to the following, when applicable.

RESIDENT STUDENTS

Types of Registration For Resident Students	Tuition Fee	Incidental Fee	Law Library Fee	A.S.U.W. Fee			Total Fees		
				Autumn Quarter	Winter Quarter	Spring Quarter	Autumn Quarter	Winter Quarter	Spring Quarter
Undergraduate.....	\$15	\$11		\$5	\$2.50	\$2.50	\$31	\$28.50	\$28.50
Graduate.....	15	11		*Optional	*Optional	*Optional	26	26	26
Law School.....	15	11	10	5	2.50	2.50	41	38.50	38.50
Auditors.....	12			*Optional	*Optional	*Optional	12	12	12
Employees of the University.....		11		*Optional	*Optional	*Optional	11	11	11
Ex-service men or women.....		11		5	2.50	2.50	16	13.50	13.50
Undergraduate nurses while in residence in a hospital.....	5			**	**	**	5	5	5
Graduate nurses in re- sidence in a hospital..	10			**	**	**	10	10	10

* If membership in A.S.U.W. is desired, the A.S.U.W. fee should be added to the total fees as shown for this type of registration.

** Privilege of A.S.U.W. membership not extended to off-campus students.

EXAMPLES OF

AUTUMN, WINTER AND SPRING QUARTER FEES FOR VARIOUS TYPES OF REGISTRATION

NOTE: Fees listed under "Special Fees and Deposits" on pages 46 and 47 should be added to the following, when applicable.
NON-RESIDENT STUDENTS

Types of Registration for Non-Resident Students	Tuition Fee	Incidental Fee	Law Library Fee	A.S.U.W. Fee			Total Fees		
				Autumn Quarter	Winter Quarter	Spring Quarter	Autumn Quarter	Winter Quarter	Spring Quarter
Undergraduate.....	\$50	\$11		\$5	\$2.50	\$2.50	\$66	\$63.50	\$63.50
Graduate.....	50	11		*Optional	*Optional	*Optional	61	61	61
Law School.....	50	11	10	5	2.50	2.50	76	73.50	73.50
Auditors.....	12			*Optional	*Optional	*Optional	12	12	12
Employees of the University.....		11		*Optional	*Optional	*Optional	11	11	11
Ex-service men or women.....	25	11		5	2.50	2.50	41	38.50	38.50
Undergraduate nurses while in residence in a hospital.....	5			**	**	**	5	5	5
Graduate nurses in res- idence in a hospital..	10			**	**	**	10	10	10

* If membership in A.S.U.W. is desired, the A.S.U.W. fee should be added to the total fees as shown for this type of registration.

** Privilege of A.S.U.W. membership not extended to off-campus students.

General Information

49

Part Time

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PAYMENT OF FEES

Fees may be paid by mail or in person, but must reach the business manager's office not later than the date indicated on the fee statement. Fees paid by mail are considered paid as of the date received. If fees are paid by mail, put fee statement number on remittance, make remittance for exact amount of statement payable to the University of Washington, and mail to the business manager's office.

REFUND OF FEES

Autumn, Winter, and Spring Quarters

Certain fees may be refunded in full if complete withdrawal is made during the first three days of instruction.

Half of certain fees may be refunded within the first 30 days after the first day of instruction if withdrawal is caused by conditions beyond the control of the student.

Applications for refund must be made during the quarter to which the fees apply.

If refund of A.S.U.W. fee is desired, students withdrawing must turn in their A.S.U.W. cards to the A.S.U.W. office.

Summer Quarter

Students who withdraw from the Summer Quarter for satisfactory reasons may, on application made at the time of withdrawal, receive a refund of four-fifths of their fees during the first week of instruction or three-fifths during the second week. No refunds will be made thereafter.

If refund of A.S.U.W. fee is desired, students withdrawing must turn in their A.S.U.W. cards to the A.S.U.W. office.

FINANCIAL DELINQUENCIES

Promptness on the part of students in adjustment of financial obligations to the University is insisted upon. Students failing to pay amounts due the University may be excluded from classes and their credits withheld.

When checks given for payment of fees are not paid on presentation at the bank, the student will be excluded from classes and receipts given considered null and void. A penalty of five dollars (\$5) will be assessed for re-entry in addition to the other penalties.

BOARD AND ROOM

The University dormitories consist of Lewis Hall and Clark Hall for women. During the ensuing year, \$32 a month will be charged for room and board at Lewis Hall and Clark Hall. The rooms are furnished with necessary articles of plain furniture, but the student is expected to supply his own bed linen, bedding, towels and rugs.

In all residence halls, room and board must be paid in advance. The payment of one month's account in advance is necessary to reserve a room; this payment applies on the first month's account.

All remittances should be made in favor of the University of Washington and addressed to the business manager of the University of Washington, Seattle.

The University also operates The Commons on the campus, where students so desiring may secure the best food at reasonable rates, cafeteria style.

Off the campus, board and room may be secured at rates ranging from \$35 to \$40 a month.

UNIVERSITY HEALTH SERVICE

The University maintains a health service which functions primarily in guarding against infectious diseases and incipient ill health due to remedial causes. The work is carried on in three main divisions; viz., a dispensary, an infirmary and an out-patient department.

The service is housed exclusively in one building, with necessary offices for doctors and nurses, forty-three beds with essential accessories, diet kitchen, nurses' quarters, etc. A corps of three physicians, seven nurses and a laboratory technician, all on full time, constitutes the permanent staff. This is augmented temporarily whenever an increased number of patients makes added assistance necessary.

The dispensary is available to all students during the span of class hours. From the results of the entrance physical examinations the students are classified. Those found to be below standard are re-examined at a later date for evidences of incipient tuberculosis, heart disease or other chronic disabilities. A complete stereoscopic X-ray and fluoroscopic apparatus has been installed for this purpose. Ordinary medicines are dispensed in small quantities without cost to the student. Close co-operation is maintained with the family physician when one is retained; in no way is the idea of supplanting the family physician contemplated.

The Infirmary cares for all cases of illness (including physician's attendance, nursing and medicines) for a period of one week free of charge. For a period longer than one week a charge of \$2 a day is made. Students confined to the infirmary are permitted to ask for the services of any licensed medical practitioner at their own expense.

Out-patient students are not permitted to remain in an abode where proper care cannot be taken of them, or where they may prove to be a source of danger to other students.

After absence from classes due to illness, a student is not re-admitted without a clearance certificate obtained from the Health Service. This certificate is issued only to those students who have been under the observation of the Service. Those students who receive care at home or afiel from the campus, must, to secure a certificate, report for approval to the Health Service on the first day of their absence. In this manner a record of all student sickness is kept, which is used as a guide for health supervision. (See Rule 22, page 58.)

DEGREES

It is not the policy of the University to grant honorary degrees.

GENERAL RULES

RULE 9. The work of the senior year (a minimum of 36 credits earned in three quarters) must be done in residence.

RULE 10. Each senior shall, before registering for the first quarter of his senior year, file with the registrar a written application for his degree. Each application shall be checked by the Committee on Graduation at least six months before the date at which the student expects to be graduated and notice shall be sent to the student by the registrar of the acceptance or rejection of his application. The accepted list shall be submitted at the last regular meeting of the faculty for the quarter, in which the checking is done and, if approved by the faculty, with or without modification, shall constitute the list of candidates to be recommended for graduation upon the completion of the work requisite for their respective degrees. No change shall be made in this list unless ordered by a two-thirds vote of the members of the faculty present.

for each quarter
Note
Date Passed
as correct

Note. Applicants who are late in filing their applications cannot be assured of recommendations to the faculty, or of consideration of petitions for modification of requirements.

RULE 11. All students shall have the option of being held to the entrance and graduation requirements of the catalogue under which they enter, or those of the catalogue under which they expect to graduate. All responsibility for fulfilling the requirements for graduation from the various schools and colleges of the University shall be thrown upon the student concerned.

RULE 12. The degrees of B.A. and M.A., B.S. and M.S., or two different bachelor's degrees, may be granted at the same time in all cases in which a minimum of fifteen quarters shall have been occupied in the work for two degrees.

RULE 13. In determining the fitness of a candidate for a degree, his attitude toward his financial obligations shall be taken into consideration.

RULE 14. Theses shall be typewritten on sheets of ledgerweight paper eight and one-half by eleven inches in size, and shall be bound in cloth, with the subject, the name of the author, and the date of the presentation on the front cover, and the name and date on the back in gilt letters. A uniform and suitable margin shall be left on the typewritten pages.

FELLOWSHIPS, SCHOLARSHIPS, PRIZES

FELLOWSHIPS

Loretta Denny Fellowships. Three fellowships, of \$500 each, open to graduate students in any department of the University. Awarded by the faculty on the basis of scholastic excellence and general merit, but only to those who need financial assistance. Application for these fellowships should be made on blanks supplied by the dean of the Graduate School, and must be in his hands on or before February 15 preceding the academic year for which the fellowships are to be granted.

Arthur A. Denny Fellowships. Six fellowships of \$500 each, open to graduate students in the departments of civil engineering, education, English, history, mining engineering, and pharmacy, respectively. Awarded by the departments concerned on the basis of scholastic excellence and general merit, but only to those who need financial assistance. Applicants must be residents of the state of Washington. Applications for these fellowships should be made to the heads of the departments concerned on blanks supplied by the dean of the Graduate School, and must be in their hands on or before February 15 preceding the academic year for which the fellowships are to be granted.

National Research Fellowships. Fellowships in physics and chemistry, offered by the National Research Council, are open to promising research students, who have already taken the doctor's degree or have equivalent qualifications. A successful candidate can pursue his research at any university or research institute chosen by him which is acceptable to the appointing board. The salary will ordinarily be \$1800 for the first year. Fellows are eligible for successive reappointments ordinarily with increase in salary. For details address the dean of the Graduate School or the heads of the departments.

University Honorary Fellowships. Three honorary fellowships have been established by the University. These, like the Loretta Denny fellowships, are open to students in any department of the University. They carry no stipend, and are designed to furnish recognition of exceptional scholastic excellence in the case of graduate students who are not eligible for the Loretta Denny or the Arthur A. Denny fellowships, either because they do not need

financial assistance or because they are not giving their entire time to their work in the University.

Research Fellowships. The College of Mines offers four fellowships for research in coal and clay in co-operative work with the U.S. Bureau of Mines. The fellowships are open to graduates of universities and technical colleges who are properly qualified to undertake research investigations. The value of each fellowship is \$720 to the holder, for the 12 months beginning July 1. Fellowship holders pay tuition and laboratory fees, but are reimbursed for the amounts so expended; they register as graduate students and become candidates for the degree of master of science in the proper subject, unless an equivalent degree has previously been earned.

Each applicant should send a copy of his collegiate record from the registrar of the college where he has graduated, or will graduate in June. He should also send a photograph and a detailed statement of his professional experience, if any, and give the names and addresses of at least three persons who are familiar with his character, training and ability. Applications should be submitted if possible by April 20 in order to allow ample time for consideration, and should be addressed to the Dean, College of Mines, University of Washington, Seattle, Washington.

Du Pont Fellowship. Through its chemical department, Du Pont de Nemours & Co. offers an annual fellowship of \$750 in chemistry, known as the "Du Pont Fellowship," open to a senior student or graduate student in chemistry or chemical engineering.

The Bon Marche Industrial Fellowship. The Bon Marche of Seattle offers an annual fellowship of \$600 to a graduate student in home economics for research work in textiles. The recipient of this fellowship is required to give one-fourth of her time for 11 months to the testing of textiles for the Bon Marche.

The Standard Brands Fellowship. The Fleischman fellowship of \$900 is offered annually by Standard Brands to a graduate student in biochemistry.

The Agnes Healy Anderson Research Fellowships in Forestry. The income from the Agnes Healy Anderson Research Fellowship Fund is available for graduate research fellowships to be awarded on a competitive basis. The terms of the fund allow some leeway in the number of fellowships and the amount of each.

The Mars Fellowship. A research fellowship in astronomy, given by the late Dr. Percival Lowell of the Lowell Observatory, Flagstaff, Arizona, carrying a stipend of \$600, may be awarded annually.

Columbia University Fellowship. Columbia University offers each year a fellowship of \$250, open to students in mining, engineering and chemistry.

University Teaching Fellowships. The University each year provides a number of teaching fellowships in various departments. The graduate student receiving such a fellowship divides his time equally between his studies and assistance in the teaching work of the departments in which he is enrolled. These fellowships range from \$540 to \$720.

SCHOLARSHIPS

Graduate Scholarships. A number of graduate scholarships are open to students who perform service as laboratory assistants, assistant in charge of quiz sections, or readers. The remuneration is proportioned to the service, and ranges from \$180 to \$360.

The Rhodes Scholarship. A scholarship of £400 a year is granted by Oxford University to a student between 18 and 25 years of age who has at least junior standing.

Isabella Austin Scholarship. The Isabella Austin scholarship of \$100 for freshman women is awarded annually at the end of the fall quarter, to a young woman of promise, on the basis of scholarship and financial need.

The P.E.O. Scholarship. Chapter A.C. of P.E.O. offers an award of \$100 annually to a young woman entering the sophomore class, this award being made on the basis of scholarship, character and need.

The Gamma Phi Beta Scholarship. The Seattle Alumnae of Gamma Phi Beta offer an annual scholarship of \$100 to that woman among the English major students who most nearly fulfills the following conditions: partial or complete financial self-dependence, high scholarship, strength of personality, wholeness of influence and promise.

The A. F. Venino Scholarship. Professor A. F. Venino offers an annual scholarship to the candidate showing the greatest proficiency and promise in piano playing at the end of his junior year. The benefit of this scholarship will apply to the work of the student during his senior year.

Beecher Kiefer Memorial Scholarship. This scholarship is awarded annually to the most talented man student of violin. This award is subject to competition before a committee from the department of music. Application should be made before June 1.

Mu Phi Epsilon Scholarship. Mu Phi Epsilon, national honorary musical sorority, offers to a woman student a scholarship of one lesson a week for a school year, in either voice, violin, cello or organ. (See College of Fine Arts.)

The Fontainebleau Scholarship. A scholarship of \$1000 awarded to a junior in the department of architecture for study at the Fontainebleau School of Fine Arts, and travel in Europe.

The Paul Karshner Memorial Scholarships. Scholarships of \$100 each, given by W. M. Karshner, M.D., and Ella H. Karshner, and awarded to a boy and to a girl who are graduates of the Puyallup high school.

The William Mackay Scholarship in Mining. From William Mackay of Roslyn, Washington, a scholarship of \$250 in the College of Mines is to be awarded to a junior or senior student on the basis of character, scholarship, and need of assistance. Applications to the dean of the College of Mines are due in March.

HONOR AWARDS AND SENIOR SCHOLARS

RULE 15. (a) Students who are intellectually mature, who have 132 or more credits, and who have shown exceptional ability and capacity for independent work in some group of studies, shall be eligible for senior scholarships.

(b) The work of the senior scholars shall be in not less than two nor more than four, allied subjects which shall be so correlated as to bear upon some common field, the aim of the scholarships being breadth of knowledge and culture, rather than minute research. Except in the case of unfinished prescribed work or of courses in which the major professor deems attendance essential, scholars are to be relieved from attendance at regular lectures and recitations and their work shall be done under the personal direction of the instructors with whom they are registered. The instructors in charge shall submit senior scholars at the end of the year to searching final examinations by which the grade of honor, if any, to be recommended to the Committee on Honors, shall be determined.

(c) Senior scholars shall be granted the library privileges accorded to members of the faculty and such monetary awards, if any, as may be available.

(d) Any upper division student whose name has appeared on two yearly honor lists may, at his request and with the approval of the department concerned, be excused from some or all of the ordinary class routine in courses in his major department. The time thus released shall not exceed the equivalent of five

credit hours in any quarter, and shall be devoted to individual study or research under the direction of an instructor in the major department who shall determine the student's grade for such work in any way he sees fit. Application for this privilege shall be made to the chairman of the department concerned.

PRIZES

The President's Medal. President M. Lyle Spencer offers this award annually to the student having the highest scholastic record throughout his university course.

The Judge Alfred Battle Prize in Public Speaking and Debate. Judge Alfred Battle offers an annual cash prize of \$50 to the Washington debating team chosen to meet representative debaters from the University of Oregon.

Philo Sherman Bennett Prize. The Philo Sherman Bennett prize of \$25 annually is "for the best essay discussing the principles of free government."

The Carkeek Prize. Mr. Vivian Carkeek of Seattle offers an annual cash prize of \$25 for the best student contribution to the *Washington Law Review* by a member of the senior class on a point of Washington law, or any point of peculiar interest to Washington attorneys.

The Jaggard Prize. In memory of the Hon. Edwin A. Jaggard, late justice of the supreme court of Minnesota, Miss Anna Wright Jaggard offers an annual cash prize of \$50 for the best essay on a topic connected with courses in history of law or jurisprudence.

The Charles H. Bebb Prize in Architecture. Mr. Charles H. Bebb offers a prize of \$50 in the department of architecture to the sophomore, junior or senior student who submits the best design in the terra cotta treatment.

The Italian Commercial Club Prize. The Italian Commercial Club of Seattle offers a gold medal to the student in the University who attains distinction in Italian.

The Circolo Italiano Universitario Prize. The Circolo Italiano offers annually a silver medal to the best student in elementary Italian.

Military Science Prize. The members of the Non-commissioned Officers' Training School have established a fund of \$400, the income of which shall be utilized as a prize to be awarded to the student completing his junior year with the highest honors in military science.

The Ruth Nettleton Award. In memory of Ruth Nettleton, who died while a senior at the University of Washington, a few of her friends have established the Ruth Nettleton Memorial Fund, the interest from which in the amount of \$50 is offered each year as a prize in sculpturing.

The Charles Lathrop Pack Prize. Charles Lathrop Pack, president of the American Tree Association, offers an annual prize of \$50 for the best essay by a student majoring in forestry. The subject shall be chosen with reference to interesting the general public in forestry matters.

The Omicron Nu Prize. Omicron Nu, national home economics honor society, offers an annual cash prize to the freshman student in home economics who attains the highest scholastic standing.

The Washington Mutual Savings Bank Prizes. The Washington Mutual Savings Bank offers three prizes, of \$100, \$50 and \$25 respectively, to undergraduate students in the University for the best essays on selected topics in business finance.

The Lehn and Fink Medal. Lehn and Fink, of New York, offers a gold medal each year to the student in the graduating class who prepares the best essay on some scientific topic of pharmaceutical importance.

The American Pharmaceutical Association Medal. The American Pharmaceutical Association offers a gold medal each year to a student who attains distinction in pharmacy.

STUDENT LOAN FUNDS

Several loan funds are available to assist students, both men and women, through financial emergencies. See the dean of men for full information.

Applications for loans must be made not later than the tenth day previous to the first day of instruction.

STUDENT WELFARE AND VOCATIONAL GUIDANCE

The offices of the dean of men and the dean of women are concerned with the welfare of the students of the University. Conferenecs with students for the discussion of questions of personal or group interests are encouraged. Every effort is made by these officers to aid students in their selection of schedules, and in all matters pertaining to part-time employment and vocational guidance. A list of approved boarding houses is on file to assist students in securing comfortable living quarters.

STUDENT EMPLOYMENT

Although the dean of men, the dean of women and the employment bureau of the University Y.M.C.A. render assistance to students desiring employment, the University can give no assurance that employment will be found. During periods of business depression, it is especially difficult to obtain part-time work. It is not advisable for anyone to enroll unless provided with sufficient funds for maintenance for a quarter. Students expecting to earn a portion of their support should not register for a full-time schedule.

ASSOCIATIONS AND CLUBS

Alumni Association. All graduates of the University of Washington, and all persons who have completed satisfactorily one year of collegiate work and shall have been in attendance at the University for at least a year, are eligible for membership in the association. Only dues-paying members are entitled to vote in any election of the association and are granted certain other preferences as provided by the constitution and by-laws. The executive committee is the governing body of the association. The annual dues are \$3 and include a subscription to the official publication of the association, *The Washington Alumnus*.

Associated Students. The Associated Students of the University of Washington (A.S.U.W.) is the central organization which conducts the activities of the student body. Membership is required of all regularly enrolled undergraduate students. The fees are as follows: autumn quarter \$5, winter quarter \$2.50, spring quarter \$2.50, summer quarter \$1.

This fee gives each student a membership in the corporation, including a free subscription to the *University of Washington Daily* and free or reduced admission to such football, basketball, baseball games, tennis, track and wrestling meets, crew regattas, debates, oratorical contests, musical concerts as may be designated by the Board of Control.

The management of the Associated Students is vested in an annually elected Board of Control, composed of ten students, three faculty and three alumni. The Board meets monthly and has all the usual powers vested in the directorate of any corporation. The Board employs a graduate manager as its executive agent.

GENERAL SCHOLASTIC REGULATIONS

REQUIREMENTS IN MILITARY OR NAVAL SCIENCE AND PHYSICAL EDUCATION

WOMEN

The physical education requirement for graduation consists of the health education lecture course and physical education activity courses. For specific courses, see page 276.

The requirement of physical education for women does not apply to students entering as juniors or seniors if the student has fulfilled the requirement laid down by the institution from which she comes.

MEN

The requirement of physical education or military or naval science shall not apply to students entering as juniors or seniors if the student has fulfilled the requirement laid down by the institution from which he comes.

Two years of military or naval science are required of all able-bodied male students with exceptions as hereinafter provided.

The military science requirement may be satisfied by naval science.

RULE 17. Two years of military or naval science, except as in these rules otherwise provided, are required of all male students under 24 years of age at the time of original entry into the University. This requirement must normally be met during the first six quarters of residence.

Students under 24 years of age of whom military or naval science is not required must take the prescribed amount of work in physical education unless excused therefrom.

The responsibility of complying with the regulations regarding military or naval science rests entirely with the student. Delay in completion of full registration will not excuse a student from attendance upon the classes in these departments. If a student wishes to be exempt from military or naval science or physical education, he must nevertheless register for the proper course and attend class until his request for exemption has been allowed.

RULE 18. The requirement of military or naval science does not apply to the following male students:

(a) One entering as a junior or senior, if he has fulfilled the requirements of military or naval science laid down by the institution from which he comes.

(b) A special student, or one registered for six credits or less.

(c) Men who, because of physical condition, should not be required to take work in military or naval science.

(d) Men who are not citizens of the United States and who do not intend to become citizens.

(e) Men who are active members in the army, navy or marine corps of the United States, or commissioned officers of the National Guard or naval militia, or reserve officers of the military or naval forces of the United States, or members of the Naval Reserve.

RULE 19. Entering students presenting credits for military science received prior to matriculation shall be allowed an exemption from military science up to the value of said credits, if they so request, but shall be held for physical education if under 24 years of age.

Men who desire exemption from military science, or naval science, because of pecuniary circumstances necessitating outside work, or for other reasons deemed by them to be satisfactory, shall present a written application accompanied by corroborating written evidence to the Board of Military Transfer, upon a form provided therefor.

Authority for exemption under sub-section (c), Rule 18, rests solely with the University health officer.

Students who elect naval science must be citizens of the United States.

While the various classes of men mentioned in sub-section (e), Rule 18, are not eligible to membership in the Military or Naval Reserve Officers' Training Corps they will be registered in military science and upon presentation of proper credentials to the military science department will be certified to the registrar for exemption or transfer.

REGULATIONS FOR WITHDRAWAL

Withdrawal is the voluntary severance by a student of his connection with a course or with the University and is indicated on the registrar's books by a W. During the first four weeks of a quarter a student may withdraw from a course and be given a W with the written consent of his dean and his instructor. If he desires to withdraw from a course at a later period, he may do so at any time prior to the last two weeks of the quarter, but if his work has not been satisfactory he shall be given an E instead of a W. If a withdrawal in either case will reduce the student's credits below 12, it must be approved by his dean. A student who drops a course without withdrawing shall be given an E in the course.

LEAVE OF ABSENCE

RULE 22. A leave of absence from the University, involving excuses from classes, may be granted by the dean concerned except as hereinafter provided.

(a) Excuses for absence on account of sickness involving more than one day shall be granted by the University Health Service, and shall be taken personally to the instructors concerned. Students absent on account of sickness shall not be readmitted to classes without this written excuse.

(b) Excuses from one class period only may be granted by instructors at their discretion.

(c) Leave of absence from the University for recognized student activities (music, debate, etc.), for student conferences, elections and athletic meets on the campus, shall be passed on by the men's personnel directors and the dean of women respectively.

SCHOLARSHIP STANDING

GRADE POINTS

A value in "points" is assigned to the several grades as follows: For each hour of grade A, 4 points; for each hour of grade B, 3 points; for each hour of grade C, 2 points; for each hour of grade D, 1 point; and for each hour of E, no points. An I (Incomplete) and a W (Withdrew) count neither as registered hours nor as grade points.

LOW SCHOLARSHIP REPORT

RULE 23. (a) Any student who, at any time in a quarter, is reported to the registrar as doing work below passing grade in any subject shall be so advised. See also Rule 39 (e).

WARNED LIST

(b) Any student failing in any quarter to make twice as many grade points (see above) as registered hours shall be placed on a warned list. A student shall remain on this warned list until his grade points, both for the previous quarter and for his entire record, are twice as many as his registered hours.

DISMISSAL

Students in the following classifications shall be dropped:

(c) Any student on the warned list whose grade points at the end of any quarter are less than one and eight-tenths (1.8) times his registered hours.

(d) Any student who, at the end of the first quarter of residence, fails to make as many grade points as registered hours.

(e) Any student, not on the warned list, who at the end of his second, or any subsequent quarter of residence fails to make one and one-half (1.5) times as many grade points as registered hours.

REINSTATEMENT OF STUDENTS DISMISSED ON ACCOUNT OF LOW SCHOLARSHIP

(f) Reinstatement of a student disqualified under the provisions of Rule 23 shall be allowed only on permission of the Reinstatement Committee of the Board of Deans. In general, a student who has been dismissed will not be permitted to return to resident study until one or more quarters have elapsed, during which time the student shall have been successfully engaged in work or study preferably related to his educational objective.

PROBATION

(g) Probation is the status of a student who has been dropped for scholastic failures but reinstated by the Board of Deans. Such a student shall remain on probation until his grade points in a given quarter are twice as many as his registered hours.

SYSTEM OF GRADES

1. The following is the system of grades: A, honor; B, C, intermediate; D, low pass; E, failed; I, incomplete; W, withdrawn.

Although D is a low passing grade, it represents such a poor quality of scholarship that only a limited number of such grades may be obtained without placing the student below the scholarship standard of the University.

The grade E is final and a student receiving a grade of E in a course can obtain credit for that course only by re-registering for it and repeating it.

A grade of W can be given only in case of regular withdrawal in good standing.

An Incomplete is given only in case the student has been in attendance and done satisfactory work to a time within two weeks of the close of the quarter. The two-week limit may be extended to three weeks in those cases in which a student has obtained a regular leave of absence from his dean. (This provision for extension of time shall not apply to one-term summer courses.) An Incomplete in a course is convertible into a passing grade only during the next quarter in which the student is in residence, and the course is offered, and provided the work of the course shall have been finished in a satisfactory manner. In special cases, removal of an Incomplete may be deferred by the dean of the proper college. Notice of such deferment must be filed with the registrar.

2. Candidates for the bachelor's degree in the colleges of Liberal Arts, Science, Business Administration, Fine Arts and Forestry, the Library School, the Law School, the School of Education, and the School of Journalism, must receive grades of A, B, or C in three-fourths of the credits required to be earned in this University for their respective degrees.

3. The passing grades for advanced degrees are A and B, S being used to indicate satisfactory work in a hyphenated course so far as the course has progressed, such work not to be counted toward a major or a minor until the final examination.

RULE 29. Except in cases of clerical error, no instructor shall be allowed to change a grade which has once been turned in to the registrar.

MISCELLANEOUS REGULATIONS

Women students under 21 years who are not living in their own homes or homes specially designated in writing by their parents or guardians, are required to live in houses inspected and approved by the University. (Rule 23, a.)

In order to be eligible to represent the University in any student activity, a student must:

1. Be registered in the University.
2. Have presented 15 Carnegie units for entrance requirements.
3. Be registered for at least 12 credits' work in a regular or special course as defined in the curriculum of his school or college.
4. Have passed ten credits of the curriculum in which he is registered for the quarter of residence previous to participation, entering freshmen excepted.
5. Not have a total of failures on his previous record, in this or any other institution, exceeding one-fifth of his total credits earned.
6. Keep off probation.
7. Secure a written leave of absence, if his absence from classes is required by participation. (Rule 39, a.)

No fraternity or sorority shall pledge any person for membership whose registration in the University is not complete (see Registration). (Rule 54, a.)

Further information regarding student activities and the rules of eligibility may be found in the Student Hand Book.

COLLEGE OF BUSINESS ADMINISTRATION

GENERAL STATEMENT

The College of Business Administration seeks to give the student:

1. That broad cultural training which every well educated man must have.
2. A knowledge of the fundamentals of modern business principles upon which any business man, regardless of his particular field, must build.
3. A specialized training in some one major phase of business or field of economic study.
4. A contact with actual business as it is conducted.

REQUIREMENTS FOR ADMISSION

Correspondence. Credentials and all correspondence relating to admission to any college or school of the University should be addressed to the registrar, University of Washington. For detailed information concerning admission, registration, and general University fees and expenses, applicable to all students, see pages 35, 43, 45.

In addition to the general entrance requirements, two units of history, and one unit of typewriting are recommended.

Ability in typewriting is not a requirement for graduation but it is a very useful tool while a student is at the University and a practical necessity in a large proportion of the positions which are available after graduation. Students who have not had this training in high school are urged to get it before they graduate from the University. This work is offered at a low cost by the Extension Service of the University or it may be secured in the local high schools or in the nearby commercial schools.

REQUIREMENTS FOR GRADUATION

The College of Business Administration is a professional college. Its graduates receive the degree of bachelor of business administration (B.B.A.). The following is a summary of the requirements for this degree:

1. The student must satisfy the entrance requirements of the University and of the College of Business Administration.

2. The student must earn 180 credits in subjects required by the University and required or approved by the faculty of the College of Business Administration. In addition, he must meet the general University requirement of six quarters in physical education or military or naval science. At least three-fourths of the credits required for graduation must be earned with grades of A, B or C.

Students entering from other colleges must satisfy not only the general requirements of the University but also the requirements of the College of Business Administration.

3. All students in the College of Business Administration must have their selection of courses approved each quarter by the registration secretary of the college. The college requires the following courses, amounting to 93 credits:

FIRST YEAR

	Credits
B.A. 1, 2. General Economics.....	10
B.A. 7. Economic Geography.....	5
Comp. 1. Written and Oral English.....	5
Speech 37. Argumentation.....	5
An approved laboratory science (10 credits) or mathematics (10 credits), or advanced foreign language (10 credits).....	10
Approved electives	10

SECOND YEAR

	Credits
B.A. 54, 55, 56. Business Law.....	9
B.A. 62, 63, 64. Accounting.....	15
Hist. 57-58-59. History of the United States.....	9
Approved electives	12

THIRD YEAR

B.A. 100. Econ. and Ind. Dev. of United States, or	
B.A. 106. Econ. of Marketing and Advertising, or	
B.A. 108. Econ. of Insurance	5
B.A. 103. Money and Banking	5
B.A. 105. American Labor Problems.....	5
B.A. 115. Business Correspondence	5
Approved electives	25

FOURTH YEAR

B.A. 160. Advanced Economics.....	5
Approved electives	40

4. Of the total 87 hours of approved electives, 15 must be selected from political science, sociology, psychology, or philosophy.

5. Since a certain amount of concentration is desirable, either before or in the third quarter of the sophomore year each student in the College of Business Administration will be required to select a major field. He is then placed in contact with an instructor, working in that field, who will advise him. The student will take a minimum of 25 upper division credit hours in the major field. These will be a part of the approved electives taken in the junior and senior years. See below for suggested courses for majors in the College of Business Administration.

The broad fundamental principles which are the foundations of all business and the general philosophy which underlies each branch of business can be understood by those who wish to give the matter careful study. It is this broad training in fundamentals that the college undertakes to offer, and such training as is given in the technique of business is built upon a careful selection of courses which will provide the cultural background necessary to the breadth of view essential to an executive. But no amount of training in the technique of business can entirely take the place of practical experience. Some short cuts may be taken, but for the most part training in the details of business technique is left where it belongs—in practical experience on the job. Graduates of the College of Business Administration do not immediately become business executives. But their college training usually gains them an entrance into business through the subordinate positions and their chief advantage lies in their greater potentialities.

The requirements of the first two years are sufficiently broad to establish a foundation for the profession of business, regardless of the particular field in which the student may later be interested.

No student is allowed to enter the junior-senior courses in the College of Business Administration unless he has reached junior standing and satisfied the prerequisites to those courses. The prerequisites have been established after the most careful consideration of the standard of efficiency and performance aimed at in the course and the educational value of the course for the student. To admit students who have not completed the carefully arranged prerequisites would not only imperil the quality of the work of the instructor, but also make it impossible for the students to get the full benefit of the course. The college realizes that certain just claims to exceptions from the above rules could be presented, and such exceptions can be granted to students whose maturity and extended experience in economic affairs of a suitable nature make it just and reasonable. Proof of these experiences and qualifica-

tions will be passed on by the dean of the College of Business Administration and the committee on graduation.

The junior and senior years are largely reserved for the student's selected field of business interest. Each student or group of students is guided and assisted by the instructor designated for that department of work under the general direction of the dean of the College of Business Administration.

SUGGESTED COURSES FOR MAJORS IN THE COLLEGE OF BUSINESS ADMINISTRATION

Either before or in the third quarter of the sophomore year each student in the College of Business Administration will be required to select a major field. He is then placed in contact with an instructor working in that field who will advise him. Conferences between student and instructor may be held at any time at their mutual convenience and should not be delayed until the registration period. At the time of registration the student's program must be approved by the registration secretary for the college, who will enforce the college and major requirements, together with the course prerequisites as stated above.

The college offers opportunity for concentration in the following fields:

- | | |
|-------------------------------|-------------------------|
| (A) Economics | (F) Foreign Trade |
| (B) Management and Accounting | (G) Public Utilities |
| (C) Marketing | (H) Real Estate |
| (D) Commercial Banking | (I) Transportation |
| (E) Investment Banking | (J) Commercial Teaching |

Students majoring in these fields must satisfy the general requirements of the University and the College of Business Administration, outlined on pages 61 and 62.

(A) ECONOMICS

The courses in economics are planned with three classes of students in mind: (1) those who do not care to specialize in any technical field but who desire a general cultural education centering around economic and social thought; (2) students who are looking forward to teaching economics and business administration; (3) students who are preparing to do graduate and research work in social science.

Students majoring in economics are:

- (1) Required to take 25 credits from the following list:

	Credits		Credits
B.A. 100.* Econ. & Ind. Dev. of U.S.	5	B.A. 131. Econ. of Pub. Utilities...	5
B.A. 104. Econ. of Transportation...	5	B.A. 140. The Co-operative Movemt.	5
B.A. 106.* Econ. of Mktg. & Adv...	5	B.A. 145. World Trade	5
B.A. 108.* Econ. of Insurance	5	B.A. 161. Econ. of Labor.....	5
B.A. 109. Econ. of Real Estate.....	5	B.A. 162. European Labor Problems.	5
B.A. 121. Corporation Finance	5	B.A. 168. Dev. of Econ. Thought...	5
B.A. 122. Prin. of Investment.....	5	B.A. 173. Int'l. Com. Policies.....	5
B.A. 124. Public Finance	5	B.A. 175. The Business Cycle	5
B.A. 125. Adv. Money & Banking.....	5	B.A. 181. Econ. of Consumption....	5
B.A. 129. Taxation	5		

(2) Advised to complete their credits for graduation from the following list, subject to the approval of the professor in charge:

- (a) of supporting courses:

	Credits		Credits
Math. 13. Statistical Methods	5	Phil. 2. Intro. to Social Ethics.....	5
Zool. 16. Evolution	2	Soc. 131. Social Statistics.....	5

* If not selected to fulfill the third year general college requirement.

(b) of approved courses in the following fields; anthropology, economics and business administration, English, foreign language, history, philosophy, political science, psychology, sociology.

(3) Students interested in labor should consult with the professor in charge of labor courses.

(B) MANAGEMENT AND ACCOUNTING

Management is essentially a study of the basic problems of business control considered from the viewpoint of the owner or the responsible operating or financial executive. An attempt is made in the courses to introduce the student to the philosophy of science in business and give him a proper understanding of the status of business management as a profession, through a study of the fundamental processes found in the internal and external conditions of commercial and industrial concerns. Because of the great importance of business measurements used in executive control, special emphasis is placed upon the study of statistics and professional accountancy.

The series covers such problems as the economics of business structures and functions; social controls over business; the economics of location; the manager's administration of purchasing, processing, marketing, and finance through the use of organization, standards and measurements. A brief survey is made of the technological aspects of commerce and industry through a study of the mechanical, electrical, chemical and geological factors involved.

On the vocational side, the courses provide training for those students who are looking forward to such executive positions as departmental managers, factory superintendents, personnel managers, directors of research, comptrollers and budget directors. Special emphasis is placed upon the training for the professional accounting field, which leads to such opportunities as governmental and private auditors, industrial accountants and Certified Public Accountants.

Students majoring in management and accounting are:

(1) Advised to elect the mathematics option in the first year and take Math. 11 and Math. 13; B.A. 59, Graphic and Tabular Analysis, should be taken in the sophomore year.

(2) Required to take 25 credits as follows:

	Credits		Credits
B.A. 101. Mgmt. of Bus. Enterprise..	5	B.A. 154. Cost Accounting I.....	5
B.A. 111. Adv. Accounting I.....	5	B.A. 155. Cost Accounting II.....	5
B.A. 112 Adv. Accounting II.....	5		

Students specializing in professional accounting are required to take 15 credits in accounting, in addition to those above, as follows:

	Credits		Credits
B.A. 156. Auditing	5	B.A. 158. C.P.A. Problems.....	5
B.A. 157. Probs. in Accounting.....	5		

(3) Advised to complete their credits for graduation from the following list of supporting courses, subject to the approval of the professor in charge:

	Credits		Credits
B.A. 120. Business Organization	5	B.A. 175. The Business Cycle.....	5
B.A. 121. Corporation Finance	5	B.A. 177. Business Forecasting	5
B.A. 126. Commercial Credit	5	B.A. 191. Res. in Mgmt. & Acctg....	3
B.A. 130. Indus. Mgmt.	5	M.E. 140. Time Study & Job Anal..	5
B.A. 151. Indus. Traffic Mgmt.....	5		

(C) MARKETING

The field of marketing comprises all those activities involved in getting goods from producers to consumers. The work in this department is planned to provide an understanding of the economic structure of the marketing system, a knowledge of the marketing functions and the agencies performing

them, a familiarity with current problems, and a certain facility in gathering, analyzing, and interpreting data as the basis for marketing plans and policies.

To facilitate concentration and to make possible a measure of professional attainment, the field is divided into three sections: wholesaling (B.A. 134 and 137); retailing (B.A. 135 and 138); advertising (B.A. 136 and 139). Students majoring in marketing are urged to concentrate in one division, although two may be covered. Courses must be carefully planned before registration in conference with a member of the marketing staff. The supporting or elective courses are vitally important and vary so much with the different needs of individual students that they cannot be set down here. The specific marketing requirements follow:

Students desiring to major in marketing should take the general basic course, B.A. 106, Economics of Marketing and Advertising, in the sophomore year and it must not be taken later than the first quarter of the junior year. This will be followed by B.A. 134, Wholesaling; B.A. 135, Retailing; and B.A. 136, Advertising, preferably in the order named, although the sequence may be begun with B.A. 135 by those who take B.A. 106 in the autumn quarter. These are foundation courses for the three divisions in the general field. Together they constitute the necessary ground work for specialized study in any one of the divisions.

In their senior year students will designate one of the divisions—wholesaling, retailing, advertising—as their field of major study. They will then be required to secure fifteen credits in the field selected. These should preferably be taken five credits each quarter, although last quarter seniors may be permitted to register for ten credits in one field. Properly qualified seniors may, during their last two quarters, register for a maximum of five credits in each of two divisions. The work of the last year (courses 137, 138 and 139), is largely individual in character. The first quarter in each division is devoted to the principles and the methodology of product and market analysis. The remaining quarters are given to individual and group study of specific problems. Each student will be required to complete a major project involving the assembling, presentation, and interpretation of data covering a specific problem in his field.

At any time during their course students whose work is unsatisfactory may be rejected as marketing majors.

(D) COMMERCIAL BANKING

The courses in commercial banking are planned to prepare students for positions in (1) commercial banks, especially the credit, trust and foreign departments; (2) savings banks; (3) savings and loan associations; (4) credit departments in manufacturing and mercantile establishments.

Students majoring in commercial banking should take B.A. 103, Money and Banking, in the third quarter of the sophomore year.

(1) They are required to take 28 credits as follows:

<i>Credits</i>		<i>Credits</i>	
B.A. 121. Corporation Finance.....	5	B.A. 127. For. Exch. & Int'l Bank... 5	
B.A. 125. Adv. Money & Banking....	5	B.A. 177. Business Forecasting.....	5
B.A. 126. Commercial Credit.....	5	B.A. 189. Bank Credit Admin.....	3

(2) Advised to complete their credits for graduation from the following list of supporting courses, subject to the approval of the professor in charge:

<i>Credits</i>		<i>Credits</i>	
B.A. 59. Graphic & Tab. Analysis... 5		B.A. 173. Com. Policies.....	5
B.A. 104. Econ. of Transportation... 5		B.A. 176. Investment Analysis.....	5
B.A. 106.* Econ. of Mktg. & Adv.... 5		Math. 11. Investments I.....	5
B.A. 108.* Econ. of Insurance..... 5*		Math. 12. Investments II.....	5
B.A. 111, 112. Adv. Accounting.... 10		Math. 13. Statistical Methods.....	5
B.A. 120. Business Organization.....	5	Law. 103. Property.....	5
B.A. 122. Prin. of Investment.....	5	Law 111. Wills.....	4
B.A. 124. Public Finance.....	5	Law 116. Negotiable Instruments....	6
B.A. 131. Econ. of Pub. Util.....	5	Law 126. Trusts.....	5

*If not selected to fulfill the third year general college requirement.

(E) INVESTMENT BANKING

The courses in investment banking embrace the principles of three closely related lines of business activity: (1) the principles and practices used in financing business enterprises; (2) the organization, operation, and functions of investment banks, bond houses, and security markets; (3) the problems and procedure necessary to the determination of proper investment policies for individuals and institutions.

Students completing these courses usually find employment with financial houses, bond departments of commercial banks, or security brokerage firms. Students majoring in investment banking should:

(1) Take 30 credits as follows:

<i>Credits</i>		<i>Credits</i>	
B.A. 120. Business Organization.....	5	B.A. 124. Public Finance.....	5
B.A. 121. Corporation Finance.....	5	B.A. 175. The Business Cycle.....	5
B.A. 122. Principles of Investment..	5	B.A. 176. Investment Analysis.....	5

In satisfaction of the general requirement of the College of Business Administration, Math. 11 and Math. 13 should be offered.

(2) The following courses are approved electives in this field. Others may be offered with the approval of the professor in charge:

<i>Credits</i>		<i>Credits</i>	
B.A. 104. Econ. of Transportation..	5	B.A. 177. Business Forecasting.....	5
B.A. 109. Econ. of Real Estate.....	5	B.A. 189. Bank Credit Admin.....	3
B.A. 125. Adv. Money & Banking... 5		Speech 40. Public Speaking.....	5
B.A. 127. For. Exch. & Int. Banking 5		Geog. 102. Econ. Geog. of N. Amer. 5	
B.A. 129. Taxation	5	Law 116. Negotiable Instruments... 6	
B.A. 131. Econ. of Public Util..... 5		Law 123. Private Corporations..... 6	
B.A. 143. Railroad Transportation... 5			

(F) FOREIGN TRADE

The courses in foreign trade are planned to prepare students for positions and eventual executive work (1) in the export department of manufacturing concerns; (2) in export commission houses in the United States; (3) as representatives in foreign lands of American export houses or manufacturing concerns; (4) in customs brokerage houses; (5) as export and import brokers or export merchants; (6) with foreign freight forwarders; (7) as consular and trade representatives in the foreign service of the United States Government.

1. Exporting and Importing

B.A. 104 should be taken in the sophomore year. Students majoring in foreign trade and wishing to enter the general field of exporting and importing (positions 1-6 above) are:

(1) Required to take 25 credits as follows:

<i>Credits</i>		<i>Credits</i>	
B.A. 127. For Exch. & Int. Banking. 5		B.A. 146. Prin. of Exp. & Imp..... 5	
B.A. 144. Water Transportation 5		B.A. 150. Transportation Rates 5	
B.A. 145. World Trade.....	5		

(2) Advised to complete their credits for graduation from the following list of supporting courses, subject to the approval of the professor in charge:

<i>Credits</i>		<i>Credits</i>	
B.A. 134.	Wholesaling 5	Geog. 103.	Pol. and Econ. Geog. Asia 5
B.A. 149.	Marine Ins. & Carrier's Risks..... 5	Geog. 105.	Econ. Geog. of Latin Amer. 5
B.A. 151.	Ind. Traffic Mgmt..... 5	Law 141.	Admiralty 4
B.A. 152.	Ports and Terminals..... 3	Law 122.	International Law..... 6
B.A. 153.	Bus. Adm. of Transp..... 5	Pol. Sci. 121.	For. Relations of U.S.. 3
B.A. 173.	Int. Com. Policies..... 5	Pol. Sci. 122.	Adm. of Amer. For. Affairs..... 3
B.A. 195.	Research in For. Trade...2-5	Pol. Sci. 124.	International Relations. 3
Geog. 102.	Econ. Geog. of N. Amer. 5		

Twenty credits or more of some modern foreign language.

2. Foreign Consular and Trade Service

B.A. 104 should be taken in the sophomore year. Students majoring in foreign trade and wishing to enter the foreign consular and trade service of the United States Government (see 7 above) are:

(1) Required to take 25 credits as follows:

<i>Credits</i>		<i>Credits</i>	
B.A. 125.	Adv. Money and Banking. 5	B.A. 146.	Prin. of Exp. & Imp.... 5
B.A. 127.	For. Exch. & Int. Banking 5	B.A. 173.	Int. Com. Policies..... 5
B.A. 145.	World Trade..... 5		

(2) Advised to complete their credits for graduation from the following list of supporting courses, subject to the approval of the professor in charge:

<i>Credits</i>		<i>Credits</i>	
B.A. 134.	Wholesaling 5	O.S. 27.	History of Japan..... 5
B.A. 144.	Water Transportation.... 5	Law 141.	Admiralty 4
B.A. 149.	Marine Ins. & Car. Risks. 5	Law 122.	International Law..... 6
B.A. 150.	Transportation Rates.... 5	Pol. Sci. 121.	For. Rel. of the U.S.. 3
Geog. 102.	Econ. Geog. of N. Amer. 5	Pol. Sci. 122.	Adm. of Amer. For. Affairs..... 3
Geog. 103.	Econ. Geog. of Asia..... 5	Pol. Sci. 127.	Internat. Organization. 3
Geog. 105.	Econ. Geog. of Lat. Am. 5	Pol. Sci. 129.	Inter. Rel. of the Far East..... 5
Hist. 1-2.	Med. & Mod. Europe.....10		
Hist. 157-158-159.	Hist. Am. Diplom.. 6		
O.S. 26.	History of China..... 5		

Twenty credits or more of a modern foreign language.

(G) PUBLIC UTILITIES

The courses in public utilities are designed to develop the basic principles and problems incident to the economic and technical nature, the management, and the social regulations of the several public utility industries.

With academic preparation of this character, students may obtain fundamental economic training in preparation for positions in the various business departments (rate-making, commercial, personnel, public relations, sales, auditing, accounting, etc.) of public utilities as well as on the staffs of the various regulatory agencies. It is believed that the necessary technical and procedural routine in public utility work should be acquired by students in their later contact with the public utility businesses at the conclusion of their academic courses.

Students majoring in this field are:

(1) Required to take 25 credits as follows:

<i>Credits</i>		<i>Credits</i>	
B.A. 104.	Econ. of Transportation... 5	B.A. 132.	Mgmt. of Public Utilities.. 5
B.A. 121.	Corporation Finance..... 5	B.A. 133.	Control of Pub. Utilities.. 5
B.A. 131.	Econ. of Public Utilities.. 5		

(2) Advised to complete their credits for graduation from the following list of supporting courses, subject to the approval of the professor in charge:

<i>Credits</i>		<i>Credits</i>	
B.A. 59.	Graphic & Tab. Analysis... 5	B.A. 154.	Cost Accounting I..... 5
B.A. 106.	Econ. of Mktg. & Adv... 5	B.A. 196ABC.	Res. in Pub. Util..... 3
B.A. 111, 112.	Adv. Accounting..... 10	Law 133.	Public Utilities 6
B.A. 122.	Prin. of Invest..... 5	Law 119, 120.	Constitutional Law.... 8
B.A. 124.	Public Finance..... 5	Pol. Sci. 101.	Constitutional Gov.... 2
B.A. 129.	Taxation 5		
B.A. 130.	Industrial Management.... 5		

(H) REAL ESTATE

The courses in real estate are organized to consider the fundamental problems of land and the improvements upon it, such as the utilization, management and control of land and the basic factors which determine its value. The principles which are necessary to an understanding of these problems are emphasized so that the student will understand the technique of appraisals, financing and the management of property, detailed knowledge of which will come through experience in the employ of real estate mortgage bankers, brokers, appraisers and property managers.

Students majoring in real estate are:

(1) Required to take 25 credits as follows:

<i>Credits</i>		<i>Credits</i>	
B.A. 109.	Econ. of Real Estate..... 5	B.A. 124.	Public Finance..... 5
B.A. 121.	Corporation Finance..... 5	B.A. 169.	Appli. Econ. of Real Est. 5
B.A. 122.	Prin. of Invest..... 5		

(2) Advised to complete their credits for graduation from the following list of supporting courses, subject to the approval of the professor in charge:

<i>Credits</i>		<i>Credits</i>	
B.A. 59.	Graphic & Tab. Anal..... 5	B.A. 175.	The Business Cycle..... 5
B.A. 106.	Econ. of Mktg. & Adv... 5	B.A. 177.	Business Forecasting..... 5
B.A. 108.	Econ. of Insurance..... 5	Speech 38.	Argumentation & Debate. 5
B.A. 120.	Business Organization..... 5	Law. 101.	Contracts 10
B.A. 126.	Commercial Credit..... 5	Law 104.	Property, Real..... 6
B.A. 129.	Taxation 5	Law 112.	Agency 5
B.A. 136.	Advertising 5	Law 135.	Landlord and Tenant... 3
B.A. 170.	Applied Econ. of Insurance 5	Law 145.	Credit Transactions..... 10

(I) TRANSPORTATION

The courses in transportation are planned to prepare students for positions in the traffic and business departments of transportation companies and for traffic work in business enterprises. B.A. 104 should be taken in the sophomore year. Students majoring in transportation are required to take 28 credits as follows:

<i>Credits</i>		<i>Credits</i>	
B.A. 143.	Railway Transportation or	B.A. 150.	Transportation Rates..... 5
B.A. 144.	Water Transportation 5	B.A. 151.	Ind. Traffic Mgmt 5
B.A. 149.	Marine Ins. & Carriers' Risks..... 5	B.A. 152.	Ports and Terminals..... 3
		B.A. 153.	Bus. Adm. of Trans..... 5

1. Railroad Transportation

Students especially interested in railroad transportation are strongly urged to complete their credits for graduation from the following list of supporting courses, subject to the approval of the professor in charge:

<i>Credits</i>		<i>Credits</i>	
B.A. 100.	Econ. & Ind. Dev. of U.S. 5	C.E. 123.	Highway & R.R. Econ.... 3
B.A. 121.	Corporation Finance..... 5	C.E. 128.	Transportation Adm..... 3
B.A. 131.	Econ. of Public Util..... 5	Speech 40, 41.	Essen. of Speaking... 8
B.A. 145.	World Trade..... 5	Phil. 5.	Logic 5
Math. 4.	Trigonometry 5		

2. Water Transportation

Students especially interested in water transportation are strongly advised to complete their credits for graduation from the following list of supporting courses, subject to the approval of the professor in charge:

<i>Credits</i>		<i>Credits</i>	
B.A. 121. Corporation Finance	5	Nav. Sci. 55,56. Seamanship	6
B.A. 127. For. Exch. & Int'l Bank. 5		Nav. Sci. 61,62. Sea Navigation....	6
B.A. 131. Econ. of Pub. Util.....	5	Math. 4. Trigonometry	5
B.A. 145. World Trade.....	5	Speech 40,41. Essen. of Speaking...	8
B.A. 146. Prin. of Exp. & Imp.....	5	Phil. 5. Logic.....	5
Astron. 1. General Astronomy.....	5		

3. Air Transportation

Students especially interested in air transportation should include a liberal number of courses from aeronautical engineering. They are strongly urged to complete their credits for graduation from the following list of supporting courses, subject to the approval of the professor in charge:

<i>Credits</i>		<i>Credits</i>	
B.A. 121. Corporation Finance.....	5	Speech 40,41. Essen. of Speaking...	8
B.A. 131. Econ. of Public Util.....	5	Phil. 5. Logic	5
B.A. 145. World Trade.....	5	A.E. 101. Aerodynamics.....	3
Astron. 1. General Astronomy.....	5	A.E. 111. Airplane Design	3
Nav. Sci. 61,62,63. Sea & Air Nav... 9		A.E. 141. Aerial Propulsion	3
Math. 4. Trigonometry	5	A.E. 161,162. Aerial Trans	6

(J) COMMERCIAL TEACHING

The courses in commercial teaching are planned to prepare students for teaching positions in commercial departments of secondary schools.

Students majoring in commercial teaching are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 36 and 61.

(2) Required to satisfy the requirements of the School of Education with respect to major and minor recommendations and education courses for the five-year normal diploma. See School of Education section, page 79.

(3) Required to take 25 credits as follows:

<i>Credits</i>		<i>Credits</i>	
B.A. 101. Management of Business		B.A. 117,118. Coml. Educ.	10
Enterprise	5	B.A. 120. Business Organization....	5
B.A. 111. Adv. Accounting.....	5		

An average grade of B in all accounting courses is required.

OTHER SUGGESTIONS IN PLANNING COURSES

(A) INSURANCE

The courses in insurance are intended primarily to enable students to acquire knowledge of the economic principles which are the foundations of the science of insurance and the practices followed in writing insurance contracts. This knowledge should enable one to select discriminately the type of contract best fitted to his needs. Students expecting to engage in the insurance business should have a major in finance, real estate or foreign trade, depending on the branch of insurance. They should complete their credits for graduation by electing, in addition to the courses in insurance, such subjects as Law 136, Insurance Law; Law 112, Agency; Law 101, Contracts; Law 141, Admiralty; Speech 40, Public Speaking.

(B) GEOLOGY AND MINING

For those who contemplate positions with oil or mining companies or government positions dealing with mineral resources, the following options in engineering geology and mining are suggested. After satisfying the general college and major requirements, 47 credits remain as free electives in the normal program. These may be used in the courses listed below which are arranged in six different combinations requiring from 25 to 60 credits. If the student chooses the latter combination, an extra quarter will be needed. Only those courses are chosen which will give a background of the principles involved without the advanced technical work necessary for the mining engineer and geologist. Students who plan to use their electives in this way should offer chemistry in satisfaction of the science requirement.

Courses	Credits and Combinations					
	I	II	III	IV	V	VI
G.E. 1,2,3,21. General Engineering.....	12	12	..	12	..	..
Geol. 5 or 105, 6 or 106, 7 or 107. Prin. of Geol...	15	15	15	15	15	15
Geol. 121. Mineralogy	5	5	5	5	5	5
Min. 51 and Met. 53. Mining and Metallurgy.....	6	6	6	..	6	..
Met. 103. Fuels	4	..	4	..	..	..
Met. 155. Iron and Steel.....	3	..	3	..	..	..
Geol. 128. Econ. Geol. of Non-metals.....	5	5	5	5	..	5
Min. 182. Mine Management.....	3	3	..	3	3	..
Cer. 90. Ceramic Materials.....	3	..	3	3	..	..
Min. 162. Cost of Mining.....	4	4	..	..	4	..
Summary.....	60	50	41	40	33	25

(C) PRE-LAW CURRICULUM—THREE-YEAR COURSE IN BUSINESS ADMINISTRATION

Combined Six-year Course in Business Administration and Law. It is possible to obtain the degrees of bachelor of business administration and bachelor of laws in six years. The requirements and suggestions for the first two years of this combined six-year course are the same as for the business administration course. Students planning to take advantage of the combined six-year curriculum may omit business law (B.A. 54, 55, 56) and substitute therefor first-year law courses after entrance to the Law School. To have the benefit of this combined course, students must maintain a uniformly good record and must in the first three years earn 139 business administration credits, together with the six quarters of required military or naval science or physical education. To take the 139 credits in three years, the student should carry an average of 16 credits per quarter, exclusive of military science and physical education. As the Law School can be entered advantageously only at the beginning of the autumn quarter, the entire 139 credits should be completed within the customary three years, with work during an intervening summer quarter or through the Extension Service, if necessary.

At the beginning of the fourth year, if a student has earned 139 credits and the six quarters of required military or naval science or physical education, he may enter the School of Law and there earn 41 credits which will be counted toward his bachelor of business administration degree. He will be granted the bachelor of business administration degree at the end of the fourth year, or as soon as he completes the required work above specified and 41 credits in the School of Law, making a total of 180 credits for graduation in business administration. The degree of bachelor of laws will be conferred upon completion of his work in the Law School. In exceptional cases where the student lacks part of the 139 business administration credits, the dean of the Law School may, upon written petition, permit registration in the Law School, the necessary credits to satisfy the combined degrees to be completed subsequently.

Selection of Major. In the 139 business administration credits must be included a major of at least 25 upper division credits, together with all the

specified requirements of the college. The major must be selected by the student taking the combined six-year curriculum upon acquiring junior standing, pursuant to the regulations relating to majors prescribed for the College of Business Administration. These are given above.

(D) MARITIME COMMERCE AND NAVAL SCIENCE

The University of Washington is one of six institutions in the United States at which a department of naval science and tactics has been organized. All male students who can pass the physical examination may take courses in this department. Twenty-eight credits of work are offered during the four years of undergraduate study. The completion of the work in the naval science and tactics department leads to a commission in the United States Naval Reserve.

Following is a summary of the combination of the work in naval science with a major in transportation in the College of Business Administration:

General requirements in business administration (see page 61)	93 credits
Transportation major (see page 68)	28 credits
Seamanship and naval science	18 academic+18 basic credits
Electives, selected largely from mathematics, engineering, science, and political science	41 credits
	<hr/> 180+18 basic credits

The four-year curriculum in naval science is outlined in the College of Science bulletin.

MAJORS IN ECONOMICS IN THE COLLEGE OF LIBERAL ARTS

Students in the College of Liberal Arts choosing economics as their major or in the School of Education choosing economics as their minor, should consult with the head of the department of economics or the professor in charge of advanced economics with regard to a proper selection of courses. A major in economics must include B.A. 1, 2, 103, 105, 124, 160, 168 and at least 15 additional credits chosen from the following list; a minor in economics must include B.A. 1, 2, 160, and 5 additional credits selected from the following list:

<i>Credits</i>		<i>Credits</i>	
B.A. 100. Econ. & Ind. Dev. of U.S.	5	B.A. 129. Taxation	5
B.A. 103. Money and Banking	5	B.A. 131. Econ. of Public Util.	5
B.A. 104. Econ. of Transportation ..	5	B.A. 140. The Co-operative Movemt.	5
B.A. 105. American Labor Problems.	5	B.A. 145. World Trade	5
B.A. 106. Econ. of Mktg. & Adv.	5	B.A. 161. Econ. of Labor	5
B.A. 108. Econ. of Insurance	5	B.A. 162. European Labor Problems.	5
B.A. 109. Econ. of Real Estate	5	B.A. 168. Develop. of Econ. Thought	5
B.A. 121. Corporation Finance	5	B.A. 173. Intl. Coml. Policies	5
B.A. 122. Principles of Investment ..	5	B.A. 175. The Business Cycle	5
B.A. 124. Public Finance	5	B.A. 181. Econ. of Consumption	5
B.A. 125. Adv. Money & Banking ...	5		

REQUIREMENTS FOR GRADUATE DEGREES

A graduate degree is not conferred as a reward for the accumulation of any specified number of credits. The candidate's fitness for such a degree is determined by a committee whose judgment is based partly upon the candidate's general personal qualifications and partly upon the successful completion of the courses which the committee approves for the particular candidate, an acceptable thesis, and a searching examination of the candidate. For requirements for graduate degrees, see Graduate School section, page 117 or College of Business Administration bulletin.

GENERAL INFORMATION

Library Facilities. The college is placing in the library a large number of supplementary reports. For many years government reports, containing a vast amount of material for the student of business, have been filed in the library. Most of the domestic journals in economics and commerce, as well as many foreign ones, are received by the college. Each student is expected to make use of the material and report from time to time on current topics of interest.

Student Organizations. A number of honorary and professional societies with national affiliations have been established in the College of Business Administration. Beta Gamma Sigma and Beta Alpha Psi (accounting), honorary fraternities, and Alpha Kappa Psi, a professional fraternity for men, at present count chapters in many institutions. Membership is based on high scholarship. Their aim is to promote serious study of business problems. Gamma Epsilon Pi, honorary, is a similar organization among the women specializing in business administration. Its purpose is not social, but professional, and membership is restricted to candidates for the B.B.A. degree. A number of prominent business women in Seattle and eastern cities are honorary members. Alpha Delta Sigma is a professional organization for men, and Gamma Alpha Chi for women, interested in advertising. The parent chapter of Pan Xenia, professional and international society for major students in foreign trade, was founded in 1918 at the University of Washington and bids fair to play an important part in the future of our foreign trade department. The Ad Club is composed of students interested in advertising work. The membership of the Propeller Club is composed of students who have a particular interest in maritime commerce or water transportation. The University Women's Vocational Club was formed in 1927, its purpose being to bring about a spirit of friendliness and comradeship among women interested in business as a profession and to acquaint University women with vocational opportunities through personal contacts with downtown women's clubs.

Required Military or Naval Science and Physical Education. See page —.

Contact with Actual Business. The business men in the state and especially in the city of Seattle, are co-operating in a most genuine way with the College of Business Administration. Students are encouraged to avail themselves of the many opportunities to do part-time work in local concerns along their chosen lines.

In addition to part-time employment an alternating quarter system of office practice and academic work has been established in the division of maritime commerce. The office practice work is made a definite part of the training.

During the senior year, or during a year of graduate work, students specializing in marketing, merchandising or advertising are given opportunity to spend alternate quarters in actual business under the immediate supervision of a field director. This plan involves either attendance at summer school or working under supervision during the summer between the junior and senior years. These apprenticeships are made possible by the active co-operation of business houses. They give the student the benefit of a favorable introduction to the best business practice, and also give him this introduction while he is still in college. His theories may be vitalized by supervision of department heads in the business and the teacher of theory in college discussing with him the application of theory to actual business as the student finds it.

The Students' Advisory Council. The B.A. Council, organized in the autumn quarter of 1919 by the students of the college, is a representative body having as its members three officers, two representatives from each of the three upper undergraduate classes, one representative from the freshman class, and one from the graduate school. It functions in an advisory capacity

on matters relating to standards of scholarship, student esprit-de-corps, co-operation between the faculty and the student body on other matters which are brought to its attention by the faculty or the student body. The regular business administration assemblies are organized and conducted under the direction of the council.

The mentor system is the conception of this council. The plan provides for the appointment of a group of senior and graduate students to meet the freshmen of the college at a certain appointed time during each quarter. The mentors take the responsibility of seeing that every freshman student in his or her group gets the largest possible benefit out of his college life.

Fellowships. The college is now in a position to grant several fellowships with the opportunity for assisting in the instruction. Address, Dean of the College of Business Administration.

Outside Lectures. The College of Business Administration supplements as far as possible the work given with practical lectures and discussions by business men. Many of the leading business men of Seattle and the state have delivered lectures in their special fields to classes.

COURSES OF STUDY

For a description of courses, offered by the College of Business Administration, see Departments of Instruction section.

SCHOOL OF EDUCATION

GENERAL STATEMENT

The School of Education bases its work on two years of college or normal school. Only one course in education, Edu. 60, or 62, is allowed in the sophomore year. The degrees awarded are bachelor of arts in education or bachelor of science in education, according to the character of the academic work chosen.

The work in the school is strictly professional and seeks to provide special training and technique for the various types of teachers and educational specialists. Emphasis is placed on graduate work. A probationary teaching certificate, the five-year normal diploma, is granted after two quarters of residence work beyond graduation for a minimum amount of professional study, but all wishing to secure the life diploma are required to spend at least three quarters in residence after graduation and complete a total of 36 credits (including the undergraduate work) in education.

Scope and Aims. The curriculum in the School of Education assumes that teachers should have a broad and liberal education, supplemented by professional training, giving knowledge of the pupils to be taught and the problems to be met, and new meaning to the subjects of instruction, as well as fundamental principles of teaching; and that they should be masters of some special subject which they expect to teach.

The school is especially fitted to provide teachers of the following types: (1) high school teachers, (2) high school principals, (3) superintendents of public schools, (4) grammar school principals, (5) supervisors of primary schools, (6) supervisors and teachers of music, drawing, manual and industrial arts, home economics, physical training and other special subjects, (7) normal school and college instructors in education, (8) experts in educational research, (9) specialists in the education of defectives, (10) playground directors, (11) Y.M.C.A. and Y.W.C.A. workers, (12) juvenile court workers. In co-operation with the Library School a thorough course in Library Science is provided.

General Academic Work. Owing to the variety of work which every teacher is likely to be required to do on beginning to teach, and because of the requirements for state certificates, elementary college courses should be taken in not less than four subjects taught in the high schools.

Specialized Academic Work. Each teacher should have thoroughly extended preparation in one subject and reasonable preparation in at least two additional subjects. Experience has shown that the following combinations are most frequently demanded: Latin, French; Latin, Greek; English, French; English, history, civics; English, Latin, history; Spanish, French; mathematics, physics, chemistry; botany, zoology, physiology, physiography; home economics alone or in connection with one or two other subjects; manual and industrial arts alone or in connection with one or two other subjects; commercial subjects alone or with other subjects; athletics, music or drawing in combination with other work. One teacher is frequently required to teach all the sciences. Public speaking is desirable as part of the preparation for teaching English. Library science is also needed by many teachers who seek library positions.

Professional Work. The requirements for the academic major and minors assure a proper distribution of the academic subjects. The professional work consists (a) of the courses in the department of education, (b) the teachers' courses in the various academic departments.

Special Teachers' Courses. Many academic departments have teachers' courses covering the problems of teaching their subjects in high schools. Work in special methods relating to particular subjects is given by instruc-

tors dealing directly with the subject matter. Foundation principles of general methods based on the laws of learning and teaching are developed in the department of education. In some instances this work is given in connection with the course in general methods.

Observation and Directed Teaching. By an arrangement between the University and the schools of Seattle students in the department of education may observe the regular work in certain schools (at present 24 are used) and do directed teaching under the direction of the regular teachers of the school and the university professors in charge of that work. Thus students have an opportunity to gain valuable experience under exceptionally favorable conditions.

Industrial Arts. Owing to the excellent industrial arts work in the Seattle public schools, students have unusual facilities for observing the best organization and equipment. A large number of industrial centers and pre-vocational classes are maintained in various parts of the city.

Athletics and Playground Activities. At the present time there is a strong demand for teachers, both men and women, who can direct various forms of athletics and playground activities in high school and the grammar grades.

Public School Music. Not only is there a demand for specially trained supervisors of music in the schools, but every school needs also teachers who can assist in the general musical activities of the school and community. Every teacher who has any musical ability should take some training in music and participate in some of the University musical organizations.

Debating, Dramatics, Public Speaking. Every teacher will be called on to assist in the incidental work of the school. Small towns cannot afford special teachers of public speaking and debate and consequently the teacher who prepares to assist in these lines increases his usefulness. Every student should participate in some of these lines throughout his college course and should take definite courses in these subjects.

Library Science. Many schools that cannot afford trained librarians have libraries that must be administered by some member of the teaching staff. The Library School offers a summer course in library science to provide teacher-librarians. Those who take up the work should have not only a good knowledge of books but also human interest and sympathy and an intelligent desire to stimulate the reading of young people.

Journalism in High Schools. Newspaper writing is offered in some of the best high schools as part of the English course. The teacher who undertakes this work needs to be especially well trained professionally as well as in English and journalism. For a proper combination of courses the student should consult the departments of education, English, and journalism.

Commercial Subjects. At present the demand on the University for teachers of commercial subjects far exceeds the supply. To prepare for this work the student should include courses in bookkeeping, typewriting, stenography, commercial law, commercial policies, commercial geography, economics, besides the professional training in education.

Teaching of Technical Subjects in College. Many students of engineering, forestry, law, and other technical subjects ultimately plan to teach those subjects in colleges or technical schools. An increasing number of such students desire professional training in educational theory and methods as part of their preparation.

The Study of Education and Citizenship. Courses in education are valuable both for those who expect to teach and for those who expect to become useful citizens of any community. Many courses in education, therefore, are rightly pursued by students not expecting to become teachers.

Saturday and Evening Classes. To accommodate teachers of Seattle and vicinity several classes in education are scheduled on Saturday and during the late afternoon and evening.

Bureau of Appointments. The University maintains an appointments bureau to assist students in obtaining desirable positions. The services are entirely free to students and graduates of the University and to employers.

Honorary Educational Societies. Chapters of Phi Delta Kappa, men's national honorary educational fraternity, and Pi Lambda Theta, women's national honorary educational sorority, have been established for several years.

ADMISSION

The admission requirements are completion of 90 credits of college work earned in the University of Washington or in an accredited institution of equal rank. Disposition of these 90 credits shall be determined by mutual agreement of the faculty of the School of Education and the faculty of the particular college concerned, and shall be administered by the dean of the college in accordance therewith. In addition the usual undergraduate requirements in physical training or military or naval science must be completed.

Sophomores who have earned 65 credits may enroll in course 60 or 62, Secondary Education.

Students admitted to the School of Education from the College of Liberal Arts must satisfy the lower division requirements, described on page 133.

Students of the other colleges desiring to be admitted to regular standing must have attained junior standing or 90 credits, plus the required credits in military or naval science or physical education. The Colleges of Liberal Arts and Science require two units of one foreign language and one unit of geometry for entrance.

Admission of Normal School Graduates to Advanced Standing. Advanced credit for work taken in approved normal schools by students previously graduated from an accredited four-year secondary school, will be allowed at the rate of 45 credits for each full year's work completed in the normal school, the minimum amount accepted as a year's work being 36 weeks of attendance with at least 45 quarter credits, not more than 19 of which shall have been earned in one quarter.

For graduation with the degree of bachelor of arts in education or bachelor of science in education a normal school graduate with such advanced credit must earn in the University a sufficient number of credits to bring the total up to 180 credits plus the required courses in physical education or military or naval science, and including all specific requirements for the degree not fully covered by previous work. Claims for exemption from specific requirements, based on work in normal school, are passed on by the registrar and the dean of the college concerned.

A minimum of three full quarters in residence is required for any degree granted by the University.

The work of the senior year (a minimum of 36 credits earned in three quarters) must be done in residence. Senior standing is attained when 135 academic credits have been earned.

It should be noted that a student whose work in high school and normal school has not included a sufficient number of special requirements of the School of Education, may find it necessary to offer more than the usual 180 credits for the degree of bachelor of arts in education or the degree of bachelor of science in education.

GRADUATION

For graduation from the School of Education with the degree of bachelor of arts in education or bachelor of science in education there shall be completed 90 credits beyond requirements for entrance to the school, at least 48 of which shall be in upper division subjects. In the total of 180 academic credits required for graduation from the School of Education the following must be included.

Academic major.....	35 or more credits
Academic minor.....	20 or more credits
Education, including 2 credits special teachers' courses.....	24 or 25 credits

The education courses required for the degree of bachelor of arts in education, or bachelor of science in education, shall include the following:

	<i>Credits</i>
Edu. 60. Prin. of Sec. Edu. (Sr. H.S.).....	3
or	
Edu. 62. Prin. of Sec. Edu. (Jr. H.S.).....	3
Edu. 90. Measurement in Sec. Edu.....	2
Edu. 9. Psychology of Sec. Edu.....	3
Edu. 70. Methods (General and special).....	4 or 5
(four credits if Edu. 75 is taken; five credits otherwise)	
Edu. 75. Special Methods	2
(depending upon whether major department gives Edu. 75)	
Edu. 71. Practice Teaching	8
Edu.120. Educational Sociology	3
	<hr/> 25 or 24

Normal school graduates who are candidates for the bachelor's degree from the School of Education must earn at least nine credits in education at the University of Washington. The courses to be taken will be selected after consultation according to the student's previous training and his vocational needs.

State normal school graduates who become candidates for the University five-year normal diploma must earn in the University at least nine credits in education. These students should register for Education 60 or 62 and arrange for a conference with the departmental adviser. The remaining courses to be taken in the department of education will be arranged through this conference.

An academic major consists of a minimum of 35 credits in some subject other than education. An academic minor consists of a minimum of 20 credits in some subject other than education. The academic major and minor should be begun before entrance to the School of Education.

No courses in education may be taken before the junior year, except course 60 or 62, Principles of Secondary Education, which may be taken by sophomores who have earned 65 quarter credits.

Students in other colleges or schools of the University may elect courses in education according to conditions fixed by those colleges and not inconsistent with regulations of the School of Education.

COURSES IN EDUCATION AT THE UNIVERSITY OF WASHINGTON

Before registering in their first courses in education, students must consult the designated adviser for students who are about to begin their first courses in education.

Courses in education at the University of Washington are divided into three classes. Excepting course 60 or 62, Principles of Secondary Education, which is open to sophomores, courses numbered from 1 to 99 are open for credit only to juniors and seniors. Courses numbered from 100 to 199 are

open for credit to juniors, seniors, and graduate students. Courses numbered from 200 to 300 are open to graduate students only.

The courses in education are divided also as to content and function into nine divisions which are as follows:

- I. Educational psychology.
- II. Educational sociology.
- III. Educational administration and supervision.
- IV. Elementary education.
- V. Secondary education.
- VI. Classroom techniques.
- VII. History and philosophy of education and comparative education.
- VIII. Educational measurements and scientific techniques.
- IX. Curriculum making.

Students should select courses from these divisions according to their interests, abilities, and the activities in which they expect to be engaged. Students who are preparing for a master's degree should specialize in at least two of these divisions, while students who are working toward the doctorate should prepare themselves thoroughly in at least three divisions. Graduate students should plan their work so that they can pursue a generous sampling of courses numbered above 200.

Before completing their registrations, graduate students should consult either the dean of the School of Education or a designated adviser. This consultation is imperative and is for the purpose of enabling candidates to select the proper divisions of education and the necessary courses in those divisions. After students have been assigned to advisers, subsequent consultations should be arranged to insure the proper choice and sequence of courses, to make changes in initial programs, and to plan theses or dissertations.

REQUIREMENTS FOR NORMAL AND LIFE DIPLOMAS

State normal school graduates who become candidates for the University five-year normal diploma must earn in the University at least 9 credits in education. These students should register for Education 60 and arrange for a conference with the departmental adviser. The remaining courses to be taken in the department of education will be arranged through this conference.

Normal school graduates must qualify for the University normal diploma or life diploma to be eligible to teach in high schools. Diplomas from the normal schools qualify the holders for elementary schools only. All graduates from the two-year course of state normal schools who receive the life diploma from this University shall earn here a minimum of 18 credits in education.

Students who have graduated from other institutions will normally be required to satisfy their major and minor departments by earning at least ten credits in their major and five credits in their minor subjects at the University of Washington. Such students will be required to earn at least nine credits in education.

Persons who have received the master's or doctor's degrees from this University are eligible to the University five-year diploma provided they have fulfilled the specific normal diploma requirements.

Normal diplomas or life diplomas shall not be granted to aliens who have not completed their naturalization.

Normal diplomas or life diplomas shall be granted only to persons who have received degrees from the University of Washington.

TEACHING MAJORS AND MINORS FOR NORMAL AND LIFE DIPLOMAS

To be eligible for a normal diploma or a life diploma a candidate shall present (a) as a teaching major a subject now included in the curriculum of at least two of the larger public high schools of the state, and (b) as a teaching minor either (1) a second teaching subject included in the curriculum of at least two of the larger public high schools of the state, or, (2) a minor definitely reinforcing the major. In unusual cases exception to this rule may be made by the faculty of the School of Education.

The following list of subjects only shall be considered acceptable as majors and minors in the School of Education and for the normal and life diplomas:

Bacteriology	Geography	Physical education
Botany	Geology	for women
Chemistry	German	Physics
Civics	History	Political science
Commercial teaching	Home economics	Public school art
Drama	Industrial arts	Public school music
Economics	Journalism	Sociology
English, including	Latin	Spanish
public speaking	Mathematics	Zoology
French	Physical education	
	for men	

Major students in one field of music may also minor in another field of music. Library science will be accepted in lieu of a second academic minor.

The University is authorized by law to issue diplomas valid in the State of Washington as teachers' certificates to teach in any high school or to superintend or supervise in any public school of the state as described below:

The University five-year normal diploma, valid for a period of five calendar years from date of issue, is granted on the following conditions:

(a) Graduation from the University; (b) evidence of good health, such general scholarship and personal and moral qualities as give promise of success and credit in the teaching profession (active professional interest in teaching is an important factor, and the faculty of the School of Education may refuse to recommend candidates for the normal diplomas who fail to measure up to the foregoing standards); and (c) completion of the following courses in education:

	<i>Credits</i>
Edu. 60 or 62. Secondary Education.....	3
Edu. 90. Measurements in Secondary Education.....	2
Edu. 9. Psychology of Secondary Education.....	3
Edu. 70. Methods (General and special).....	4 or 5
(four credits if Edu. 75 is taken; five credits otherwise)	
Edu. 75. Special Methods	2
(depending upon whether or not major department gives Edu. 75)	
Edu. 71. Practice Teaching	8
Edu. 120. Educational Sociology.....	3
	<hr/> 25 or 24

By action of the State Board of Education, students will be required to obtain two additional quarters of work in residence after graduation for their five-year normal diploma, beginning September 1, 1932. In September, 1933, three additional quarters will be required. The requirements for the life diploma will be increased at the same rate. By 1932 the state board will expect all beginning teachers to have completed a minimum of one academic major and one academic minor and either a second academic minor or its equivalent in definitely contributory courses. By further action of the State Board of Education, September 27, 1930, certification for high school teaching requires a minimum of 24 credits in education with not less than two or more than four credits in each of the following:

Principles of Secondary Education
 Measurements in Secondary Education
 Psychology of Secondary Education
 Methods (General and Special)
 Educational Sociology

All candidates for the five-year normal diploma, unless exempted by a satisfactory voice test, must take Speech 191 or its equivalent.

LIFE DIPLOMAS

The University life diploma is granted to candidates who possess the five-year normal diploma and who comply with the following requirements:

1. Complete at least one quarter of residence study of 12 credits subsequent to receiving the five-year normal diploma. As the requirements for the five-year diploma are increased, a corresponding increase will be made for the life diploma. After September, 1932, three quarters beyond graduation will be required; and after September, 1933, four quarters will be required, 15 credits in each of the additional quarters.

2. Earn during the undergraduate and graduate work a minimum total of 36 quarter credits in education which must include educational psychology (course 101 or course 201 or their equivalents) and may include a maximum of five credits in teachers' courses in special subjects.

3. Earn during the graduate quarter a minimum of five additional quarter credits in an academic subject which will normally be the academic major or minor.

4. Furnish satisfactory evidence of having taught successfully for at least 24 months.

5. The candidate's entire record as to scholarship, teaching experience and moral and personal qualities must appear upon review by the department of education to be satisfactory.

6. The life diploma is not granted until candidates have taught at least one school year subsequent to receiving the normal diploma even though they have had 24 months of teaching experience.

7. No person is eligible to receive the degree, the normal diploma or the life diploma who has not been in residence at this University at least three quarters.

8. The service requirement of 24 months may not be satisfied by college or university service.

9. If the time which elapses between receiving the baccalaureate degree and the application for the life diploma exceeds five years, one quarter of residence work of at least 12 credits subsequent to receiving the five-year normal diploma shall be required to secure an extension.

10. The education courses shall be specified by the dean of the School of Education with a view to supplementing the student's professional equipment.

11. The academic courses shall be specified by the academic departments concerned.

12. Candidates for the life diploma shall include from two to six quarter credits in education courses numbered 200 or over.

13. Grades required for the five-year normal diploma and life diploma:

- (a) C average in all university courses.

- (b) C average in education courses, with C or better in Education 71, Cadet Teaching.

- (c) C average in the minor teaching subject with no grades below C in required courses.

(d) In the major teaching subject there shall be no grades less than C in required courses and with such general average in individual departments as shall be approved by the general faculty.

A two-year extension of the diploma may be granted to candidates who can satisfy the requirements set forth in 1, 2, 3, and 5. An additional quarter of at least 12 credits will be required for the life diploma.

REQUIREMENTS MADE FOR ACADEMIC MAJORS AND MINORS, BY THE RESPECTIVE DEPARTMENTS

BACTERIOLOGY

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
101. General Bacteriology	5	101. General Bacteriology	5
102. Sanitary Bacteriology	5	102. Sanitary Bacteriology	5
103. Pub. Hyg. Bacteriology	5	103. Public Hygiene	5
104. Serology	5	Bacteriology Electives	5
105. Infectious Diseases	5		
106. Clinical Diagnosis	5		
Bacteriology Electives	5		
	<hr/>	Minimum total.....	20
Minimum total.....	35		

BOTANY

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1. Elementary Botany	5	1. Elementary Botany	5
3. Elementary Botany	5	3. Elementary Botany	5
105,106,107. Morph. and Evol.....	15	105,106,107. Morph. and Evol.....	15
140,141,142. General Fungi }	15		
or		Minimum total.....	25
143,144,145. Plant Physiology }			
	<hr/>		
Minimum total.....	40		

CHEMISTRY

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1-2. Gen. Inorganic Chem. }	10	1-2. Gen. Inorganic Chem. }	10
or		or	
21-22. Gen. Inorganic Chem. }	5	21-22. Gen. Inorganic Chem. }	5
23. Elem. Qualitative Anal.....	5	23. Elem. Qualitative Anal.....	5
101. Adv. Qualitative Anal.....	5	101. Adv. Qualitative Anal.....	5
111. Quantitative Analysis	5	and	
131-132. Organic Chemistry.....	10	111. Quantitative Analysis }	10
140-141. Elem. Physical Chem.....	6	or	
	<hr/>	131. Organic Chemistry }	10
Minimum Total.....	41	and	
		132. Organic Chemistry }	
			<hr/>
		Minimum total.....	25

For the minor, students should have had at least high school physics; for the major they should have had a year of college physics. Grades of C or above must be obtained in all required chemistry courses; for a major one-third of the grades in upper division courses must be B or above.

CIVICS

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1. Comparative Government	5	1. Comparative Government	5
1. General Economics	5	1. General Economics	5
1. Introductory Sociology	5	or	
101. Constitutional Govt.	2	1. Introductory Sociol. }	5
152. Political Parties	5	101. Constitutional Govt.	2
Electives in Political Science.....	13	Electives in Political Science.....	13
Electives in Economics or Sociol.....	5		
	<hr/>		<hr/>
Minimum Total.....	40		25

COMMERCIAL TEACHING

The courses in commercial teaching are planned to prepare students for teaching positions in commercial departments of secondary schools.

Students majoring in commercial teaching are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined in the College of Business Administration bulletin.

(2) Required to satisfy the requirements of the School of Education with respect to major and minor recommendations and education courses for the five-year normal diploma. See page 78.

(3) Required to take 25 credits as follows:

B.A. 101. Management of Bus. Enterprise.....	5
B.A. 110 or 111. Advanced Accounting.....	5
B.A. 117. Commercial Education	5
B.A. 118. Commercial Education	5
B.A. 120. Business Organization	5

Students entering the School of Education from normal schools or other colleges than Business Administration shall be required to take:

	<i>Credits</i>		<i>Credits</i>
B.A. 1,2. Gen. Econ.....	10	B.A. 110 or 111. Adv. Accounting...	5
B.A. 7. Economic Geography.....	5	B.A. 115. Bus. Correspondence	5
B.A. 54,55,56. Business Law.....	9	B.A. 117. Commercial Edu.	5
B.A. 62,63,64. Prin. of Accounting.....	15	B.A. 118. Commercial Edu.	5
B.A. 101. Mgt. of Bus. Enterprise...	5		
			<u>64</u>

An average grade of B in all major teaching subjects is required.

ECONOMICS

Students in the School of Education choosing economics either as their major or minor should consult with the executive officer of the department of economics or the professor in charge of advanced economics with regard to a proper selection of courses. An academic major or minor in economics must include the following:

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
B.A. 1,2. General Economics	10	B.A. 1,2. General Economics	10
B.A. 103. Money and Banking.....	5	B.A. 160. Advanced Economics	5
B.A. 105. Amer. Labor Problems....	5	Five additional credits, chosen from	
B.A. 124. Public Finance	5	the following list.....	5
B.A. 160. Advanced Economics	5		<u>20</u>
B.A. 168. Development of Economic			
Thought.....	5		
Additional credits chosen from the			
following list	15		
	<u>50</u>		

Electives from which to choose additional credits:

B.A. 100. Econ. & Ind. Dev. of U.S. 5	B.A. 125. Adv. Money & Banking... 5
B.A. 103. Money and Banking..... 5	B.A. 129. Taxation
B.A. 104. Econ. of Transportation... 5	B.A. 131. Econ. of Public Utilities.. 5
B.A. 105. Amer. Labor Problems.... 5	B.A. 140. The Co-operative Movem't. 5
B.A. 106. Econ. of Mktg. & Adv.... 5	B.A. 161. Econ. of Labor..... 5
B.A. 108. Econ. of Insurance..... 5	B.A. 162. European Labor Probs... 5
B.A. 109. Econ. of Real Estate..... 5	B.A. 168. Dev. of Econ. Thought... 5
B.A. 121. Corporation Finance	B.A. 173. Int'l Commercial Policies. 5
B.A. 122. Prin. of Investment..... 5	B.A. 175. The Business Cycle..... 5
B.A. 124. Public Finance	B.A. 181. Econ. of Consumption.... 5
B.A. 145. World Trade	

Minimum total for academic major—50 credits.

Minimum total for academic minor—20 credits.

ENGLISH

The schedules given below present the courses required in addition to Comp. 1 and 2 or Comp. 1, 16, 17. These are general courses and may not be counted toward a major or minor. It is expected that all majors and minors will register for Comp. 16, 17 concurrently with a course in literature as a substitute for Comp. 2.

For either a major or minor, it is required that a student earn the grade of B in three-fourths of his upper division work.

Substitutions in the following lists are allowed to fit a student's plan of study if approved in writing by the department of English.

Major Courses

GROUP I

Lit. 150, 151. Old and Middle English
Lit. 153, 154. English Literature 1476-1642

GROUP II

Lit. 170, 171. Shakespeare
Lit. 167, 168. Seventeenth Century Literature
Lit. 144, 145. Eighteenth Century Literature

GROUP III

Lit. 177, 178. Early Nineteenth Century Literature
Lit. 174, 175. Late Nineteenth Century Literature
Lit. 161, 162. American Literature

Literature

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
Lit. 64,65,66. Lit. Backgrounds.....	13	Lit. 64,65,66. Lit. Backgrounds.....	13
Lit. 75. Technique of Fiction.....	3	Lit. 75. Technique of Fiction.....	3
Speech 79. Oral Reading of Lit.....	3	Speech 79. Oral Reading of Lit.....	3
Lit. 117. Hist. of the Eng. Language or Adv. Composition.....	5	Lit. 117. Hist. of the Eng. Language or Adv. Composition.....	5
One major course.....	10	One major course.....	10
One major course in two other major groups.....	10		34
Elective	6		
	<hr/> 50		

Drama

Admission to this division is granted only when the student has a good record and has been accepted by the director of drama and the department of English. Normally supplementary studies in literature are required which should include Lit. 64, 65, 75 and two courses from 170, 171, 177, 178, 174, 175, 161, 162.

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
Speech 43. The Speaking Voice.....	3	Speech 43. The Speaking Voice.....	3
Speech 47,48. Theatre Speech.....	4	Speech 47,48. Theatre Speech.....	4
Drama 51,52,53. Acting	6	Drama 51,52,53. Acting (2 quarters)...	4
Drama 104,105,106. Workshop	9	Drama 104,105,106. Workshop (2 qrs.)	6
Drama 121,122,123. Advanced Acting and Directing.....	9	Drama 127,128,129. Hist. Theatre Art or	
Drama 127,128,129. Hist. Theatre Art	6	Drama 151,152,153. Rep. Plays.....	6 or 9
Drama 151,152,153. Rep. Plays.....	9	Electives	11 or 8
Drama 191,192,193. Major Conference	3		<hr/> 34
	<hr/> 49		

Speech

Admission to this division is granted only when the student has a good record and has been accepted by the director of speech and the department of English. Normally supplementary studies in literature are required which should include Lit. 64, 65 and ten credits from major courses. For a recommendation to teach speaking or debate the student must have credit for Edu. 75X.

<i>Major</i>		<i>Credits</i>	<i>Minor</i>		<i>Credits</i>
Speech 40.	Essentials of Speaking....	5	Speech 40.	Essentials of Speaking....	5
Speech 41.	Advanced Speaking	3	Speech 41.	Advanced Speaking	3
Speech 38.	Argumentation	5	Speech 43.	The Speaking Voice.....	3
Speech 43.	The Speaking Voice.....	3	Speech 79.	Oral Reading of Lit.	3
Speech 79.	Oral Reading of Lit.....	3	or		
Speech 186.	Mind and Speech.....	3	Speech 38.	Argumentation	3 or 5
Speech 187.	Adv. Voice Problems....	3	Speech 187.	Adv. Voice Problems....	3
Speech 188.	Adv. Prob. in Speaking. 3		Speech 188.	Adv. Probs. in Speaking 3	
Speech 191.	Speech Correction	3	Approved electives	14 or 12	
Speech 138.	Rhetoric of Pub. Spkg.				34
or					
Speech 139.	Forms of Pub. Address. 3				
Approved electives	11				
		45			

GEOGRAPHY

<i>Major</i>		<i>Credits</i>	<i>Minor</i>		<i>Credits</i>
1.	Elements of Geog. or		1.	Elements of Geog.....	5
101.	Principles of Geog.....	5	B.A. 7.	Economic Geography.....	5
11.	Weather and Climate, or		Geog. 102.	Econ. Geog. of N.A.....	5
111.	Principles of Meteorology.....	5	Electives from upper division courses		
B.A. 7.	Economic Geography.....	5	in Geog.....	5	
114.	Geography of the Oceans, or		Minimum total.....	20	
Geol. 106.	Prin. of Physiog.....	5			
Electives from upper division courses					
in Geog.....	15				
Minimum total.....	35				

GEOLOGY (PHYSIOGRAPHY)

<i>Major</i>		<i>Credits</i>	<i>Minor</i>		<i>Credits</i>
1.	Intro. to Earth Science.....	5	1.	Intro. to Earth Science.....	5
5.	Rocks and Minerals.....	5	6.	Elements of Physiog.....	5
6.	Elements of Physiog.....	5	Geog. 11.	Weather and Climate.....	5
Geog. 111.	Prin. of Meteorology.....	5	112.	Physiog. of Eastern U.S., or	
Geog. 114.	Geography of the Oceans. 5		113.	Physiog. of Western U.S.....	5
112.	Physiog. of Eastern U.S., or		Minimum total.....	20	
113.	Physiog. of Western U.S.....	5			
128.	Economic Geology	5			
		35			

GERMAN

For the academic major or minor students should have had two or three years of high school German. The equivalent, if taken in college, is at present German 1, 2, 3, 5. In addition to their high school preparation, they are advised to take their major subject during their entire four-year college course. The minimum requirements are as follows:

<i>Major</i>		<i>Credits</i>	<i>Minor</i>		<i>Credits</i>
6 to 12; 50 to 52a, b.	Second Year Work, about.....	7	6 to 12.	Second Year Work, about..	7
100.	Schiller	about 20	100.	Schiller	6
101 to 105.	Recent Writers, summer school equivalents of all courses included		101 to 105.	Recent Writers, summer school equivalent included	
118 to 120.	German Prose Read..		118 to 120.	German Prose.....	
133 to 135.	Modern Novels.....		133 to 135.	Modern Novels.....	
136 to 138.	Modern Drama.....		136 to 138.	Mod. Drama.....	
139,140.	Studies in German Lit....	6	139,140.	Studies in German Lit....	6
141.	Survey of German Lit.....		141.	Survey of German Lit.....	
142.	Lyrics and Ballads.....		142.	Lyrics and Ballads.....	
150 to 153.	Lessing, Goethe.....		150 to 153.	Lessing, Goethe.....	
180 to 185.	Nineteenth Cent Lit.]		180 to 185.	Nineteenth Cent Lit.]	
109,110,111.	Adv. Composition.....	6	109,110,111.	Adv. Composition.....	6
121.	Phonetics	2	121.	Phonetics	2
Minimum Total.....		35	Minimum total.....		20

Grades of C or above must be obtained in all required German courses; for a major one-third of the grades in upper division courses must be B or above.

All students who wish a major or a minor recommendation in German must present Edu. 75-L, the teacher's course.

HISTORY

Academic Major. Minimum 48 credits, including course 1-2, of which 48 credits 50 per cent must be in upper division courses. Electives on advice of the head of the department.

Academic Minor. Minimum 20 credits, including course 1-2. Electives on advice of the head of the department.

Prospective teachers of history as a major subject in high schools who desire the recommendation of the department of history must become acquainted with the elementary facts requisite for the teaching of courses in history, civil government, economics and sociology taught in the high schools of the state and have specialized knowledge in their chosen fields. Courses in history, government, economics, and sociology should be selected with this aim in view.

Prospective high school teachers of history should bear in mind that since Oriental history is not yet offered in the high schools, such courses should be treated as electives rather than as major courses in preparation for the normal diploma or positions as teachers.

Joint requirements of the history department and of the School of Education with respect to the attainment of recommendations for teaching positions and of teaching certificates are to be satisfied as follows:

A. Attainment of standards of scholarship required by the School of Education (see paragraph 13, page 80.

B. Fulfillment of following major or minor requirements.

<i>Major</i>		<i>Credits</i>	<i>Minor</i>	
1. Required: a total of 48 credits			1-2. Medieval and Modern European History (or its equivalent), 10 credits required.	
1-2.	Medieval and Modern.....	10	Choice between 139,140,141, 143,144,145, or 147, 148, 149. Advanced American History, 9 to 11 credits; or 71-72-73, Ancient History, 9 credits; or upper division European history including English, 10 credits; also additional electives, 1 to 5 credits; minimum total 20 credits.	
5-6.	English History	10		
71-72-73.	Ancient History	9		
57-58-59.	United States	}9 to 11		
or				
139,140,141.	United States			
or				
143,144,145.	United States			
or				
147,148,149.	United States			
2. Preferential group: 10 additional credits, of which 5 are to be selected from upper division courses in European, English, or ancient history courses; and the remainder from upper division courses in American history				
Minimum total.....		48 or 49		

Courses 1-2 and 57-58-59 carry lower division credit only; courses 5-6 and 71-72-73 may carry upper division credit by performance of special work under direction of the instructor. Since majors in history are required to select at least 50 per cent of their total work from courses carrying upper division credit, they will usually find it necessary to take one or both of the two last mentioned courses for upper division credit.

MAJOR IN ALL FIELDS IN HOME ECONOMICS

Students in home economics may satisfy the requirement for both a major and a minor recommendation by work in home economics only.

	<i>Credits</i>
25-26. Textiles	6
45, 46. Household Management	6
47. Home Furnishing	3
107-108. Nutrition	10
112, 113, 114. Costume Design and Construction	9 or 11
115, 116, 117. Food Preparation	11 or 13
144-145. Household Economics	4
148. Home Management House	2
190. Child Nutrition and Care	5
	<hr/> 56 or 60

Prerequisites: Painting, Sculpture and Design 9; Chemistry 1 and 2; Chemistry 135-136; Physiology 7.

Related courses that should be included: Physics 89-90; Architecture 1-2; Bacteriology 101; Nursing 5.

MAJOR AND MINOR IN TEXTILES AND CLOTHING

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
25-26. Textiles	6	25-26. Textiles	6
109. Elem. of Home Economics	5	112, 113, 114. Costume Design and	
47. Home Furnishing	3	Construction	9 or 11
112, 113, 114. Costume Design and		47. Home Furnishing	3
Construction	9 or 11	H.E. Electives	2 or 0
160, 161. Adv. Costume Design	6		
133. Costume Design	5	Minimum total	20
148. Home Management House	2		
	<hr/> 36 or 38		

Prerequisites for either major or minor:

P.S.D. 9. Art Structure	3	P.S.D. 9. Art Structure	3
P.S.D. 169-170. Costume Design	4		

Students should have had at least one year of high school clothing. The above shall be considered as comprising a teaching major or a minor.

INDUSTRIAL ARTS

Students who wish to major or minor in industrial arts will normally need to supplement such specialized training as they can receive at the University of Washington by courses which can be taken at the normal schools or at other institutions. Such courses are offered also at the University of Washington during the summer session. Twenty credits are required for a minor and 35 for a major.

JOURNALISM

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
51. News Writing	5	51. News Writing	5
101. Reporting	5	101. Reporting	5
120. Copy Reading	3	120. Copy Reading	3
150. Editorial Writing	3	150. Editorial Writing	3
Elect 19 credits from any of the following:		Electives	4
3. Elements of Publishing.....	3	Minimum total.....	20
130. Fundamentals of Advertising...	5		
131. Display Advertising	5		
138. History of Journalism.....	3		
135. Publicity	2		
171-172. Mag. and Fea. and Trade Jour. Writing.....	4		
125. Principles of H.S. Journalism..	5		
250. Research	3-5		
Minimum total.....	35		

A student electing a major or a minor in journalism must conform with the regulations of the School of Journalism, which provide that he must maintain a B average in journalism subjects.

LATIN

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
Greek 1-2-3. Elementary Greek.....	15	Twenty credits selected from the following or equivalent courses, but 106 must be included:	
Thirty-five credits selected from the following or equivalent courses (at least 18 credits in upper division courses.		Latin 21. Cicero: DeSenectute; Latin Literature (MacKail).....	5
Latin 21. Cicero: DeSenectute; Latin Literature (MacKail).....	5	22. Catullus; Latin Lit. (MacKail) ..	5
22. Catullus; Latin Lit. (MacKail) ..	5	23. Virgil: Georgics and Bucolics; Latin Lit. (MacKail).....	5
23. Virgil: Georgics and Bucolics; Latin Lit. (MacKail).....	5	24. Sallust: Catiline and Jugurtha; Latin Lit. (MacKail).....	5
24. Sallust: Catiline and Jugurtha; Latin Lit. (MacKail).....	5	25. Ovid: Metamorphoses	5
25. Ovid: Metamorphoses	5	100. Livy	5
100. Livy	5	101. Horace	5
101. Horace	5	102. Tacitus	5
102. Tacitus	5	103. Plautus and Terence.....	5
103. Plautus and Terence.....	5	106. Syntax and Prose Comp.....	3
106. Syntax and Prose Comp.....	3	107. Cicero's Letters	3
107. Cicero's Letters	3	109. Pliny's Letters	3
109. Pliny's Letters	3	113. Roman Home Life and Religion ..	3
113. Roman Home Life and Religion ..	3	An examination planned to test the student's knowledge of the Latin ordinarily taught in a standard four-year high school.	
Senior Examination		Minimum total.....	20
Minimum total.....	50		

The prerequisite for any work toward either a major or a minor in Latin is three and one-half years of high school Latin or its equivalent.

Latin courses 1-2, 3, 4, 5, 6, 11, 13, do not count toward a major or minor.

MATHEMATICS

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
4. Plane Trigonometry	5	4. Plane Trigonometry	5
5. College Algebra	5	5. College Algebra	5
6. Analytical Geometry	5	6. Analytical Geometry	5
107,108,109. Diff. and Integral Calc....	15	U.D. Electives in Math.....	5
U.D. Electives in Math.....	5	Minimum total.....	20
Minimum total.....	35		

The above schedule is based upon the assumption that the student has had one and one-half years of algebra, and one year of plane geometry, or one year of plane and one-half year of solid geometry before entering the University. If a student has not had the third one-half year of algebra in high school, Math. 1 must be elected during the freshman year in addition to above schedule. If the student has not had solid geometry he should take Math. 2 in addition to the above schedule.

Grades of C or higher must be earned in mathematics classes by all students who select mathematics as their academic major or minor subject.

MUSIC

1. All students will be required to take Edu. 71, Cadet Teaching.
2. Students also must satisfy the requirements in Music 4, 5, 6, 15 and 16.
3. Students majoring in music through the School of Education must satisfy the music department as to their proficiency in voice and piano.

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
51. Elementary Harmony	5	(For majors in music) Theory and Applied:	
53. Intermediate Harmony	5	109. Counterpoint	5
56. School Music	5	112. Forms	5
40,41,42. Elem. Or. Inst.	9	117. Composition	5
101. Advanced Harmony	5	Applied	13½
114. Intermediate School Music.	2		28½
115. Choral Conducting	2	Minor (for non-music majors):	
116. Methods	2	51,53. Harmony	10
127,128. Choral Forms	4	56. El. Sch. Music.	5
154,155,156. Supervision	9	or	
180. Orchestra Conducting	2	154. H.S. Music	3
Minimum total.....	50	114. Int. Sch. Music	2
		115. Choral Conducting	2
		116. Jr. H.S. Music.	2
		127. Choral Forms	2
		40 or 41 and 42. Or. Inst.	6
		180. Orch. Cond.	2
		Minimum total.....	29 or 31

PHYSICAL EDUCATION FOR MEN

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
90. Personal and Gen. Hygiene.	2	90. Personal and Gen. Hygiene.	2
95. Elementary Games	2	110. First Aid and Athletic Train. .	3
110. Athletic Train. and First Aid. .	3	141,142,143. Phys. Edu. Methods.	9
115. Physiol. of Musc. Exercise.	3	145. Prin. of Phys. Edu.	3
122. Kinesiology	3	Adv. Athletic Methods.	4
135,136. Individual Gymnastics.	4	Minimum total.....	21
141,142,143. Phys. Edu. Methods.	9		
145. Prin. of Phys. Edu.	3		
150. Phys. Edu. Admin.	5		
153. Prin. of Health Edu.	2		
156,157,158. Adv. Athletic Methods. .	6		
Minimum total.....	42		

Required foundation courses:

Biological Sciences:

Zool. 1-2
 Physiol. 50
 Anat. 101, 110, 111, 112
 Bact. 103 or the equivalent

Social Sciences:

Fifteen credits in sociology and psychology

Required supplementary courses:

Education 151, Home Economics 104, or the equivalent.

PHYSICAL EDUCATION FOR WOMEN

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
10. Health Education	5	111. Rhythms and Dramatic Games. .	3
101. Survey of Gymnastics.	3	112. Elementary Athletic Games.	3
111. Rhythms and Dramatic Games. .	3	145. Principles of Phys. Edu.	3
112. Elementary Athletic Games.	3	162-163-164. Methods in Phys. Educ. .	15
113. Playgrounds and Community Recreation.	3	Minimum total.....	24
115. Physiology of Exercise.	3		
122. Kinesiology	3		
131-132-133. Adapted Activities.	9		
145. Principles of Phys. Edu.	3		
152. Admin. of Phys. Education.	2		
153. Principles in Health Edu.	2		
162-163-164. Methods in Phys. Educ. .	15		
Minimum total.....	54		

Required supplementary courses:

Anat.	101, 110, 111, 112.....	6
Physiol.	50	6
Zool.	1-2	10

Required supplementary courses: 10 credits to be selected from sociology and English.

Anatomy, physiology, and zoology may be counted as an academic minor.

Education 71, Cadet Teaching, additional in all cases except by exemption by the dean of the School of Education and head of the department of physical education.

For recommendation of the normal diploma with physical education as a major, the requirement is a C average in required major courses. No grade less than C in a required major course may count toward a normal diploma.

PHYSICS

<i>Major</i>		<i>Credits</i>	<i>Minor</i>		<i>Credits</i>
1,2,3,101.	General Physics } or	20	1,2,3.	General Physics } or	15
4,5,6,101.	General Physics }		4,5,6.	General Physics }	
105.	Elec. and Magnetism.....	5	101.	Introd. to Mod. Theories.....	5
160.	Optics	5	105.	Elec. and Magnetism.....	5
	Physics Electives	10	160.	Optics	5
Minimum total.....		40	Minimum total.....		30

A teaching major or minor in physics should be supported by 15 credits of college mathematics.

For recommendation for a normal diploma a major or a minor is required with an average grade better than C.

POLITICAL SCIENCE

<i>Major</i>		<i>Credits</i>	<i>Minor</i>		<i>Credits</i>
1.	Comparative Govt.	5	1.	Comparative Govt.	5
54.	International Relations	5	101.	Constitutional Government	2
112.	American Political Theory.....	3		Electives in Political Science.....	18
101.	Constitutional Government	2		Minimum total.....	25
151.	American National Government. 5				
161.	Municipal Government	5			
	Electives in Political Science.....	15			
Minimum total.....		40			

PUBLIC SCHOOL ART

Both the major and minor are required.

<i>Major</i>		<i>Credits</i>	<i>Minor</i>		<i>Credits</i>
5,6,7.	Drawing	9	Applied Arts for majors in public school art only.		
9,10,11.	Art Structure.....	9	54,55.	Art Structure.....	6
53.	Art Structure	3	151.	Illustration	3
56,57,58.	Drawing and Painting.....	9	166.	Stage Design	3
	Life	3	105,106.	Art Structure (lettering, posters).....	6
150.	Illustration	3	103,104.	Pottery or	6
100.	Methods	2	157,158.	Metal Work, Jewelry.....	6
101.	Elem. Interior Design	2	129.	Design Appreciation	2
102.	Industrial Art	2			26
126.	History of Art.....	2		Special minor open to majors in home economics, group V.	
20.	Sculpture Appreciation	2	5,6.	Drawing	6
Minimum total.....		46	9,10,11.	Art Structure.....	9
			53,54,55.	Art Structure.....	9
			105.	Lettering	3
			169,170.	Costume Design	4
			Minimum total.....		31

For a recommendation in teaching a student majoring or minoring in public school art must have an average of B or over.

ROMANIC LANGUAGES AND LITERATURE

The number of credits required for a major or a minor will depend upon the high school preparation of the student. For this reason the requirements for a major, based upon a preparation of two years in college, or three in high school, amount to less than 35 credits, while for a minor they amount to more than 20 credits.

French

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
41. Phonetics	3	41. Phonetics	3
101,102,103. Composition & Conver..	9	101,102,103. Composition & Conver..	9
158,159. Advanced Syntax	4	158,159. Advanced Syntax	4
Edu. 75K. Teach. Course in French..	2	Edu. 75K. Teach. Course in French..	2
Nine or ten credits from any of the following:		Nine or ten credits from any of the following:	
34,35,36 or 134,135,136. Comparative Lit., French, Italian, Spanish....	9	34,35,36 or 134,135,136. Comparative Lit., French, Italian, Spanish....	9
118,119,120. Survey of French Lit..	9	118,119,120. Survey of French Lit..	9
*121,122,123. French Novel	9	*121,122,123. French Novel	9
*124,125,126. The Short Story.....	9	*124,125,126. The Short Story.....	9
*131,132,133. Lyric Poetry	6	*131,132,133. Lyric Poetry	6
*141,142,143. The French Drama....	9	*141,142,143. The French Drama....	9
*151,152,153. Hist. of the French Lit. of the 19th Century.	9	*151,152,153. Hist. of the French Lit. of the 19th Century.	9
154,155,156. Contemp. French Lit..	9	154,155,156. Contemp. French Lit..	9
*161,162,163. 18th Century Lit.....	6	*161,162,163. 18th Century Lit.....	6
*171,172,173. 17th Century Lit.....	6	*171,172,173. 17th Century Lit.....	6
Minimum total.....	27	Minimum total.....	27

*Conducted in French.

A total of not more than five credits may be elected from courses which are conducted in English; at least four of the nine credits must be elected from any of the courses conducted in French.

Spanish

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
101,102,103. Adv. Composition	9	101,102,103. Adv. Composition	9
159. Advanced Syntax	3	159. Advanced Syntax	3
Edu. 75Y. Teach. Course in Spanish..	2	Edu. 75Y. Teach. Course in Spanish..	2
Nine credits from any of the following:		Nine credits from any of the following:	
34,35,36 or 134,135,136. Comparative Lit., French, Italian, Spanish....	9	34,35,36 or 134,135,136. Comparative Lit., French, Italian, Spanish....	9
118,119,120. Survey of Span. Lit....	6	118,119,120. Survey of Span. Lit....	6
121,122,123. The Novel	9	121,122,123. The Novel	9
141,142,143. Spanish Drama	9	141,142,143. Spanish Drama	9
184,185,186. Spanish American Lit..	9	184,185,186. Spanish American Lit..	9
Minimum total.....	23	Minimum total.....	23

SOCIOLOGY

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1. Introductory Sociology }.....	5	1. Introductory Sociology }.....	5
150. General Sociology }.....	5	150. General Sociology }.....	5
55. Human Ecol. or approved equiv. }	5	55. Human Ecol. or approved equiv. }	5
66. Group Behavior or approved equiv.....	5	66. Group Behavior or approved equiv.....	5
131. Social Statistics	5		
Electives from courses offered in the department after consultation regarding the special field of interest.16		Electives from courses offered in the department after consultation regarding the special field of interest.15	
Minimum total.....	36	Minimum total.....	25

ZOOLOGY AND PHYSIOLOGY

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1-2. Elements of Zoology.....	10	1-2. Elements of Zoology.....	10
or		or	
53-54. Physiology	15	53-54. Physiology	10
Zoology, Physiology Electives.....	25	Zoology, Physiology Electives.....	10
Minimum total.....	35	Minimum total.....	20

COURSES OF STUDY

For a description of courses offered by the School of Education, see Departments of Instruction section.

COLLEGE OF ENGINEERING

GENERAL INFORMATION

The purpose of the College of Engineering is to give thorough training in engineering fundamentals, so essential to success in all branches of the engineering profession, and to provide instruction for specialization in the main fields of engineering. For administrative purposes the college is divided into eight departments: aeronautical, chemical, civil, commercial, electrical, mechanical and general engineering and engineering shops. The college offers six four-year curricula (see page 96) leading to the degree of bachelor of science in the respective branches of aeronautical, chemical, civil, commercial, electrical and mechanical engineering, but all are required to take the fundamental subjects on which engineering is based. The curricula consist largely of required courses, but a sufficient number of electives is provided in the junior and senior years to give each student the training that will best serve his case.

The location of the University is particularly favorable for engineering instruction. Seattle and the Puget Sound region offer exceptional opportunities for the student engineer to observe the practical application of engineering principles in all lines. The many large and readily accessible hydro-electric power plants, electric transmission and distribution systems and the development of the state's vast water power resources, offer unexcelled opportunities for the study of power engineering. Airplane factories, flying fields, iron and steel works, wood-pulp and lumber mills, ship building yards, docks, waterways, steam and electric railways, bridges, buildings and a great variety of industrial plants, give students in all fields abundant opportunities to study and observe the application of fundamental engineering principles.

GENERAL ENGINEERING

The freshman work is identical for all the curricula in the Colleges of Engineering and Mines and is given by the department of general engineering. The aim is to give the student an early contact with engineering situations in which he can make application of the fundamentals of mathematics and physics, and to assist him in the formation of good habits of work and study so that he may obtain maximum return on his investment in an engineering education. To assist in realizing these ideas individual work is insisted upon in all courses and the student is given much personal coaching by his instructors. As a part of the courses, the various fields of engineering are discussed, enabling the student to make a more intelligent choice of his particular line of work. The choice is made at the beginning of his sophomore year. Engineering problems (G.E. 11, 12) are planned to obtain these results and comprise a distinctive feature of the college.

Another feature of the freshman year is the study given the personal traits and aptitudes of the individual students. This phase of the work is under the direction of the freshman adviser, who is also in charge of all the general engineering courses. His advice and assistance on their personal problems is available to all students in the department.

AERONAUTICAL ENGINEERING

A generous donation for an aeronautical engineering building from the Daniel Guggenheim Fund for the Promotion of Aeronautics has made it possible to establish a complete four-year curriculum leading to the Bachelor of Science degree in aeronautical engineering. The courses are arranged so as to give the student a thorough knowledge of the principles of aerodynamics as applied to the locomotion of heavier- and lighter-than-air craft, an extensive training in structural analysis and design, an introduction into the opera-

tion and design of aeronautical power plants and flying fields, and a knowledge of the economic principles involved in aerial transportation.

Field trips to the local airplane factory, one of the largest in the country, visits to local flying fields and lectures by experienced designers and practising aeronautical engineers serve to familiarize the student with the latest developments in this branch of engineering.

Laboratories, equipped with wind tunnels for testing air foils and propellers, with dynamometers for testing aeronautical engines, and with other apparatus for investigating the strength of aeronautical structures are available to support the theoretical work of the student.

CHEMICAL ENGINEERING

Chemical engineering is given under the direction of the department of chemistry and chemical engineering. It deals with the unit processes of the manufacturing industry. Training in this subject includes not only general courses in engineering, but also specific training in analytical, organic and physical chemistry. The application of chemical technique to manufacturing processes is made in specially developed courses in industrial chemistry and chemical engineering.

Chemical engineers are in charge of many important industries such as the manufacture of chemicals, petroleum products, the production of materials used in construction, fuels, paints, explosives and a great variety of organic products. The design of apparatus, chemical research, and the development of control methods play an important part in the career of the chemical engineer.

CIVIL ENGINEERING

Courses leading to the following branches of civil engineering are given:

Surveying, including the making of city and geological surveys, and surveys for engineering constructions.

Highway and railway engineering, which deals with the location, construction and maintenance of city streets, highways and railways.

Hydraulic engineering, which deals with the laws governing the flow of water, and their applications to water supply of communities, to water power development, design of hydraulic machinery, river and harbor improvement, and the reclamation of land by drainage and irrigation.

Sanitary engineering, which deals with problems relating to the protection and preservation of the health of communities, including the design of water supply and sewerage systems, sewage disposal works, and the study of methods of garbage collection and disposal.

Structural engineering, which deals with the details of the design and construction of steel, concrete and timber structures, such as bridges, buildings, dams, retaining walls, and their foundations.

Material testing, which deals with the inspection and proper use of the materials of construction including timber, steel and concrete.

COMMERCIAL ENGINEERING

This course consists of a major in engineering, primarily mechanical, with a minor in business administration. Its purpose is to provide basic training in the fundamentals of economics, business law, accounting, management and finance, as well as in engineering. The first two years of its curriculum are the same as electrical and mechanical engineering. In the third and fourth years, selected subjects in business administration replace some

of the more specialized engineering subjects, while enough of the latter are retained to provide a sufficient background in the particular branch of engineering desired. A group of approved electives permits of specialization in the upper years. This curriculum is closely allied to that of mechanical engineering, but is more general in its character.

ELECTRICAL ENGINEERING

Mastery of the basic laws of direct currents, alternating currents and electric transients is essential to progress in any branch of electrical engineering. The foundation for specialization in any field is laid in the required courses of the electrical engineering curriculum. Elective courses are offered in electrical communication, telephone, telegraphs and radio, in illumination, electric machine design, electric railways, central stations and power transmission. The required and elective courses supplemented by seminars, thesis and research give ample opportunities for every student to follow his bent and secure training best suited to his talents. Special attention is given to the economic generation, transmission and distribution of hydro-electric power and to electric transients.

MECHANICAL ENGINEERING

The department of mechanical engineering aims to prepare the student to enter the various branches of mechanical engineering, including design, operation and superintendence of machinery; fuel economy; power plants; structural materials; heating and ventilation; gas engineering; refrigeration; and automotive engineering. It affords a thorough training in engineering fundamentals relating to industry, and with the electives allowed in the fourth year, permits specialization to such degree as is deemed advisable.

ENGINEERING LABORATORIES

Especially equipped laboratories in aeronautical, chemical, civil, electrical and mechanical engineering are available. For description, see College of Engineering bulletin issued as a separate bulletin.

REQUIREMENTS FOR ADMISSION

Correspondence. Credentials and all correspondence relating to admission to any college or school of the University should be addressed to the registrar, University of Washington. For detailed information concerning admission, registration, and general University fees and expenses, applicable to all students, see pages 35, 43, 45.

SPECIAL REQUIREMENTS

ENGINEERING: Solid geometry, advanced algebra, one unit of physics, and one unit of plane geometry. One unit of chemistry is recommended as a desirable elective.

Students planning to major in chemical engineering should include two units of German in high school. Also for those taking the structural option of civil engineering, German is very desirable.

PREPARATION IN ALGEBRA

All students entering the College of Engineering will be tested in high school algebra by class work and by an examination given shortly after the beginning of the first quarter. It is essential that students in the engineering courses shall possess a good working knowledge of algebra *at the beginning of their course*, and it is the purpose of the test to secure this by requiring a review of the subject shortly before entering the University. Students failing in the test are not permitted to continue with regular freshman en-

gineering mathematics but are required to take a review of preparatory algebra (Math. 1, College of Science) during the first quarter.

In performing the fundamental operations of algebra, such as multiplication and division, the use of the parentheses, the solving of numerical and literal equations of the first and second degrees, the simplification of fractions and radicals, and the putting of problems into equations, it is of the first importance that the student should have distinct notions of the meaning and reasons for all that he does, and be able to state them clearly in his own language. He should be able to perform all these operations, even though somewhat complex, with rapidity, accuracy, and neatness. In his preparatory studies the student is advised to solve a great many practical problems and to describe fully the reason for the steps taken.

PREPARATION IN ENGLISH

Exactitude in the mechanics of English should be automatic by the time of graduation from high school. To determine the degree of mastery actually attained, a test in spelling, punctuation, and grammar is given to sophomore student engineers on the third Tuesday of the autumn quarter. For those who fail to make a passing grade in this test, a non-credit make-up course is provided, Composition B, but it may result in troublesome irregularities of schedule. In order then, to clear his entrance into the course in technical writing required of all engineers—either through obtaining a good grade in the test or through exemption because of the consistently high standard of his written work—during the freshman year the student is urged to master the fundamentals of correct English while he is still in high school, and to make accuracy in speech and writing a matter of habit before he enters the College of Engineering.

CURRICULA AND DEGREES

The College of Engineering offers four-year curricula in each of the departments of aeronautical, chemical, civil, commercial, electrical and mechanical engineering leading to the degree of bachelor of science in the respective branches of engineering, as bachelor of science in civil engineering.

Thesis. The graduating thesis when required, will consist of research or design in some branch of engineering, or review of some existing construction. The subject must be approved by the professor in charge of the department under which it is classified.

Degrees with Honors. A degree with honors in engineering may be conferred upon any student of the College of Engineering who upon recommendation of the engineering faculty, of the honors committee and by vote of the University faculty may be declared worthy of unusual distinction.

Advanced Degrees. The degrees of master of science in aeronautical engineering (M.S. in A.E.), master of science in civil engineering (M.S. in C.E.), master of science in electrical engineering (M.S. in E.E.), master of science in mechanical engineering (M.S. in M.E.), and master of science in chemical engineering (M.S. in Ch.E.), respectively, will be conferred on graduates of this college, or other engineering colleges of recognized standing who complete a year (45 credits), of prescribed graduate work, including a satisfactory thesis, with the grade of A or B. The candidate must comply with regulations of the Graduate School and pass a formal examination open to all members of the faculty. Selection of work for this degree must, in each case, be approved by the head of the department in which the student majors, and by the Graduate Council.

The professional degrees, chemical engineer, (Ch.E.), civil engineer, (C.E.), electrical engineer, (E.E.), and mechanical engineer (M.E.), will be conferred in three years on graduates of this college holding the degree of

bachelor of science or master of science in their respective lines, who give evidence of having been engaged continuously in acceptable engineering work and who present satisfactory theses.

CURRICULA OF THE COLLEGE OF ENGINEERING

FOR THE FRESHMAN YEAR IN ALL DEPARTMENTS

FRESHMAN

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Math. 51. Trig.....	4	Math. 52. Algebra.....	4	Math. 53. Anal. Geom..	4
G.E. 1. Drawing.....	3	G.E. 2. Drawing.....	3	G.E. 3. Drafting Prob.	3
G.E. 11. Engr. Prob....	3	G.E. 12. Engr. Prob....	3	G.E. 21. Surveying.....	3
Chem. 1 or 21. General	5	Chem. 2 or 22. General	5	Chem. 23. General.....	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

IN AERONAUTICAL ENGINEERING

Leading to the degree of Bachelor of Science in Aeronautical Engineering

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 97. Engr.....	5	Physics 98. Engr.....	5	Physics 99. Engr.....	5
Math. 61. Calc.....	3	Math. 62. Calc.....	3	Math. 63. Calc.....	3
M.E. 81. Mechanism... 3		C.E. 131. Mechanics... 3		C.E. 132. Mechanics... 3	
M.E. 82. Steam Engr... 3		B.A. 3. Gen. Econ..... 3		Comp. 100. Engr..... 3	
Shop 53. Foundry..... 1		Shop 54. Forge..... 1		Shop 55. Machine..... 1	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

JUNIOR

A.E. 101. Aerodynam... 3	A.E. 102. Aerodynam... 3	A.E. 111. Airpl. Des... 3
A.E. 171. Aircraft Mech. 3	A.E. 172. Aircraft Mech. 3	A.E. 173. Aircr. Const. 3
C.E. 142. Hydr..... 5	E.E. 101-2. Dir. Cur... 6	E.E. 121-2. Alt. Cur... 6
M.E. 111. Mach. Des.. 3	M.E. 112. Mach. Des.. 3	M.E. 167. Engr. Matls. 3
Comp. 102. Engr..... 3	Shop 104. Non-Fer. Met. 1	

SENIOR

A.E. 112. Airpl. Des.. 3	A.E. 121. Airships.... 3	M.E. 183. Thermo and
A.E. 141. Propulsion... 3	M.E. 198. Gas Engines 3	Ref..... 5
A.E. 161. Aerial Trasp. 3	B.A. 54. Bus Law..... 3	A.E. 113. Performance. 3
Electives 7	Electives 7	Electives 7

Electives must in all cases be approved by the head of the department.

IN CHEMICAL ENGINEERING

Leading to the Degree of Bachelor of Science in Chemical Engineering

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 97. Engr.....	5	Physics 98. Engr.....	5	Physics 99. Engr.....	5
Math. 61. Calc.....	3	Math. 62. Calc.....	3	Chem. 52. Chem. Tech. 3	
Chem. 109. Quant. Anal. 5		Chem. 110. Quan. Anal. 5		Chem. 101. Adv. Qual.	
M.E. 81. Mechanism... 3		M.E. 82. Steam Engr... 3		Anal..... 5	
Military or Naval Sci.		Military or Naval Sci.		M.E. 83. Steam Lab... 3	
or Phys. Edu.....+		or Phys. Edu.....+		Military or Naval Sci.	
				or Phys. Edu.....+	

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 121. Ind.....	5	Chem. 122. Ind.....	5	Chem. 123. Ind.....	5
C.E. 132. Mechanics...	3	Chem. 128. Organic....	5	Chem. 129. Organic....	5
E.E. 101. Dir. Cur....	4	Comp. 100. Engr.....	3	E.E. 121. Alt. Cur....	4
E.E. 102. Dir. Cur. Lab. 2		M.E. 111. Mach. Des..	3	E.E. 122. Alt. Cur. Lab. 2	
Shop 55. Machine.....	1				

SENIOR

Chem. 181. Phys. and Theor.....	5	Chem. 182. Phys. and Theor.....	5	Chem. 173. Chem. Engr. 3	
Chem. 171. Chem. Engr. 5		Chem. 172. Chem. Engr. 5		Electives	12
Chem. 176. Chem. Engr. Thesis.....	2	Chem. 177. Chem. Engr. Thesis.....	3		
Elective	3	Elective	3		

Electives must in all cases be approved by the head of the department.

IN CIVIL ENGINEERING

Leading to the Degree of Bachelor of Science in Civil Engineering

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 97. Engr.....	5	Physics 98. Engr.....	5	Physics 99. Engr.....	5
Math. 61. Calc.....	3	Math. 62. Calc.....	3	B.A. 3. Gen Econ.....	3
M.E. 82. Steam Engr..	3	C.E. 58. Transp. Engr..	4	C.E. 59. Adv. Surv....	4
C.E. 57. Transp. Surv..	4	C.E. 135. Mechanics....	3	C.E. 136. Mechanics....	3
Military or Naval Sci. or Phys. Edu.....	+	Military or Naval Sci. or Phys. Edu.....	+	Military or Naval Sci. or Phys. Edu.....	+

JUNIOR

C.E. 142. Hydraulics... 5	C.E. 143. Hyd. Engr... 5	C.E. 121. Roads and Pavements..... 3
C.E. 171. Str. Anal.— R.C..... 3	C.E. 172. Str. Anal.— Steel..... 3	C.E. 150. Sanit. Engr.. 3
C.E. 162. Matis. of Constr..... 3	C.E. 163. Matis.—Tim- ber and Steel..... 3	C.E. 173. Str. Anal.— Timber..... 3
Geol. 105. Petrol..... 5	E.E. 103. Dir. Cur.... 3	E.E. 123. Alt. Cur.... 3
	E.E. 104. Dir. Cur. Lab. 1	E.E. 124. Alt. Cur. Lab. 1
		Comp. 100. Engr..... 3

SENIOR

Hydraulic and Sanitary Option

C.E. 145. Hyd. Mach..	3	C.E. 155. Water Sup..	3	C.E. 147. Hyd. Power..	3
C.E. 157. Reclamation..	3	C.E. 176. Str. Des.—		C.E. 154. Sanit. Des...	3
C.E. 158. Sewerage....	3	Steel.....	4	C.E. 177. Str. Des.—	
C.E. 175. Str. Des.—		B.A. 54. Bus. Law....	3	Timber.....	3
R.C.....	4	Elective	6	C.E. 199. Engr. Rel...	3
Elective	3			English elective	3

Structural Option

C.E. 157. Reclamation..	3	C.E. 155. Water Sup..	3	C.E. 177. Str. Des.—	
C.E. 158. Sewerage...	3	C.E. 176. Str. Des.—		Timber.....	3
C.E. 175. Str. Des.—		Steel.....	4	C.E. 185. Adv. Str. Des.	4
R.C.....	4	C.E. 182. Adv. Str. An.	3	C.E. 199. Engr. Rel...	3
C.E. 181. Adv. Str.		B.A. 54. Bus. Law....	3	English elective	3
Anal.....	3	Elective	3	Elective	3
Elective	3				

College of Engineering

Highway and Railway Option

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
C.E. 124. Highway Des. 3		C.E. 123. Highway and		C.E. 128. Transp. Adm. 3	
C.E. 157. Reclamation... 3		Railway Econ. 3		C.E. 177. Str. Des.— 3	
C.E. 158. Sewerage.... 3		C.E. 155. Water Sup... 3		Timber..... 3	
C.E. 175. Str. Des.— 4		C.E. 176. Str. Des.— 4		C.E. 199. Engr. Rel... 3	
R.C..... 4		B.A. Steel..... 4		English elective 3	
Elective 3		B.A. 54. Bus. Law.... 3		Elective 3	
		Elective 3			

Electives must in all cases be approved by the head of the department.

IN COMMERCIAL ENGINEERING

Leading to the Degree of Bachelor of Science in Commercial Engineering

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Math. 61. Calc..... 3		Math. 62. Calc..... 3		Math. 63. Calc..... 3	
Physics 97. Engineers' 5		Physics 98. Engineers' 5		Physics 99. Engineers' 5	
M.E. 81. Mechanism... 3		M.E. 83. Steam Lab... 3		Comp. 100. Engr..... 3	
M.E. 82. Steam Engr... 3		B.A. 3. Gen. Econ.... 3		C.E. 131. Mechanics... 3	
Shop 53. Foundry..... 1		Shop 54. Forge..... 1		Shop 55. Machine..... 1	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

JUNIOR

C.E. 132. Mechanics... 3	M.E. 111. Mach. Des... 3	E.E. 101. Dir. Cur.... 4
C.E. 142. Hydraulics... 5	B.A. 57. Pr. Bus. Rel.. 5	E.E. 102. Dir. Cur. Lab. 2
B.A. 65. Acctg. Surv.. 5	B.A. 154. Cost. Acct... 5	M.E. 112. Mach. Des.. 3
Comp. 102. Adv. Engrs' 3	Shop 115. Shop Mgmt.. 3	Shop 120. Cost Anal... 3
		Elective 3

SENIOR

E.E. 121. Alt. Cur.... 4	B.A. 121. Corp. Fin... 5	Speech 103. Extemp... 3
E.E. 122. Alt. Cur. Lab. 2	B.A. 130. Ind. Mgmt.. 5	M.E. 167. Engr. Matls. 3
B.A. 103. Money and Banking..... 5	Electives 6	Electives 10
Elective 5		

Not less than 14 elective credits shall be technical.

Electives must in all cases be approved by the Dean of the College of Engineering.

IN ELECTRICAL ENGINEERING

Leading to the Degree of Bachelor of Science in Electrical Engineering

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 97. Engr..... 5		Physics 98. Engr..... 5		Physics 99. Engr..... 5	
Math. 61. Calc..... 3		Math. 62. Calc..... 3		Math. 63. Calc..... 3	
M.E. 81. Mechanism... 3		M.E. 83. El. Stm. Lab. 3		C.E. 131. Mechanics... 3	
M.E. 82. Elm. Stm. Lab. 3		B.A. 3. Gen. Econ.... 3		Comp. 100. Engr..... 3	
Shop 53. Foundry..... 1		Shop 54. Forge..... 1		Shop 55. Machine..... 1	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

JUNIOR

E.E. 109. Dir. Cur.... 4	E.E. 111. Dir. Cur.... 4	E.E. 161. Alt. Cur.... 6
E.E. 110. Dir. Cur. Lab. 2	E.E. 112. Dir. Cur. Lab. 4	E.E. 162. Alt. Cur. Lab. 4
C.E. 132. Mechanics... 3	C.E. 142. Hydraulics... 5	E.E. 152. Mach. Des... 3
Comp. 102. Adv. Engrs' 3	M.E. 111. Mach. Des... 3	M.E. 112. Mach. Des... 3
M.E. 167. Materials.... 3		

SENIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
E.E. 163. Alt. Cur....	6	E.E. 195,196. El. Trans.	6	Thesis or electives.....	4
E.E. 164. Alt. Cur. Lab.	4	Physics 154. Elec. Meas.	3	Electives	12
Electives	6	Electives	7		

Electives must in all cases be approved by the head of the department.

Four of the following electives, offered in the several divisions of electrical engineering, are required for the bachelor of science in electrical engineering degree:

	<i>Credits</i>
E.E. 141. Illumination	4
E.E. 154. Design of Electrical Apparatus.....	4
E.E. 171. Electric Railways	4
E.E. 173. Central Stations	4
E.E. 175. Power Transmission	5
E.E. 180, 182, 184. Research (each).....	2 to 5
E.E. 181. Vacuum Tubes	5
E.E. 183. Radio	5
E.E. 185. Telephone Transmission	4
E.E. 186, 188. Thesis (each).....	2 to 5
E.E. 191. Engineering Equations	3
E.E. 190, 192. Seminars (each).....	4
E.E. 194. Seminar	5

IN MECHANICAL ENGINEERING

Leading to the Degree of Bachelor of Science in Mechanical Engineering

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Math. 61. Calc.....	3	Math. 62. Calc.....	3	Math. 63. Calc.....	3
Physics 97. Engr.....	5	Physics 98. Engr.....	5	Physics 99. Engr.....	5
M.E. 81. Mechanism.....	3	M.E. 83. Steam Lab... 3		Comp. 100. Engr.....	3
M.E. 82. Steam Engr... 3		B.A. 3. Gen. Econ.... 3		C.E. 131. Mechanics... 3	
Shop 53. Foundry..... 1		Shop 54. Forge..... 1		Shop 55. Machine..... 1	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

JUNIOR

E.E. 101. Dir. Cur.... 4	E.E. 121. Alt. Cur..... 4	C.E. 142. Hydraulics... 5
E.E. 102. Dir Cur. Lab. 2	E.E. 122. Alt. Cur. Lab. 2	Comp. 102. Adv. Engr... 3
M.E. 123. Eng. & Boil. 3	M.E. 111. Mach. Des... 3	M.E. 112. Mach. Des... 3
M.E. 151. Exp. Engr.... 3	M.E. 124. Eng. & Boil. 3	M.E. 153. Exp. Engr... 3
C.E. 132. Mechanics... 3	M.E. 152. Exp. Engr... 3	Shop 107. Shop Plan... 1
Shop 105. Adv. Mach.. 1	Shop 106. Adv. Mach.. 1	

SENIOR

B.A. 54. Bus. Law.... 3	M.E. 114. Mach Des... 2	M.E. 115 or 199. Mach
M.E. 113. Mach. Des.. 2	M.E. 167. Engr. Mats. 3	Design..... 3
M.E. 183. Thermo. &	M.E. 182. Heat & Ven. 3	M.E. 184. Power Plants 5
Ref..... 5	M.E. 198. Gas. Eng.... 3	M.E. 195. Thesis..... 3
Electives 5	Electives 5	Electives 5

Electives must in all cases be approved by the head of the department.

When practicable, it is recommended that thesis be taken in the winter quarter.

COURSES OF STUDY

For a description of courses, offered by the College of Engineering, see Departments of Instruction section.

COLLEGE OF FINE ARTS

GENERAL INFORMATION

This college comprises the departments of architecture, music, and painting, sculpture and design. The department of architecture offers a curriculum of five years leading to the degree of bachelor of architecture. There are curricula of four years leading to the degree of bachelor of arts in music, and to the degree of bachelor of music with a major in applied music, composition, school music, or instrumental school music. Curricula of four years are offered leading to the degree of bachelor of fine arts, with a major in painting and design, interior design, public school art, painting or sculpture.

Normal Diploma. In addition to their bachelor's degree, graduates in school music and public school art, by meeting the requirements of the department of education and such departmental requirements as these respective departments may institute, may receive a normal diploma, entitling them to teach music or art in the public schools.

Admission of Normal School Graduates to Advanced Standing. Graduates of the two-year curriculum of approved normal schools may receive junior standing provided their credits meet the requirements of the University for entrance, scholarship standard, and credit load.

REQUIREMENTS FOR ADMISSION

Correspondence. Credentials and all correspondence relating to admission to any school or college of the University should be addressed to the registrar, University of Washington. For detailed information concerning admission, registration, and general University fees and expenses, applicable to all students, see pages 34, 43, 45.

SPECIAL REQUIREMENTS

GENERAL

1. *Foreign Language.* Thirty-five credits of foreign language either in high school or in the University, 15 of which must be in a modern foreign language, are required for a degree in the College of Fine Arts. If a student has finished this work in the high school he shall substitute approved electives for the University requirement. Language courses given in English translation will not be counted toward this requirement.

SPECIFIC

1. *Architecture.* It is advisable that students intending to enter the course in architecture present credits for preparatory work in trigonometry and freehand drawing.

2. *Music.* All students who intend to enroll in the College of Fine Arts with a major in music will be given a placement examination during Freshman Week in music fundamentals, voice and piano. All students must satisfy the department that they have completed the equivalent of Mus. 9A of the school music piano course (see page 258). Piano majors note special requirements on page 260. If corresponding proficiency on other approved instruments is substituted for this entrance requirement, a student shall complete Mus. 9A before graduation.

Six of the required number of credits in vocal or instrumental study may be earned in advanced orchestral instrument classes.

Students whose training and proficiency, gained in vocal or instrumental study before entering the University, may warrant their being granted advanced credit, must apply for such credits upon entrance.

GRADUATE DEGREES

For a description of requirements for the degree of master of music, and master of arts in music education, see page 119.

CURRICULA

The following curricula present the requirements for the several degrees arranged in suitable sequence. As many of the five-credit courses are offered in two or more quarters, other sequences may be acceptable, and even necessary, provided that prerequisites are complied with and conflicts avoided.

I. MUSIC

FOR THE BACHELOR OF MUSIC DEGREE WITH A MAJOR IN VOCAL OR INSTRUMENTAL STUDY

Students following this course shall show a marked talent for performance. Major students shall earn not less than 30 credits in one branch of vocal or instrumental study. The remaining six credits may be earned in other branches.

Unless excused by reason of advanced standing on entrance, students who major in vocal or instrumental study will require two lessons a week, to cover the work necessary for a degree.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mus. 48. Voc. or In. St. 3		Mus. 49. Voc. or In. St. 3		Mus. 50. Voc. or In. St. 3	
Mus. 15. Mus. Fund... 3		Mus. 16. Mus. Fund... 3		Mus. 51. El. Harmony. 5	
Comp. 1. Composition... 5		Comp. 2. Composition... 5		Modern Language..... 5	
Modern Language 5		Modern Language 5		L. A. Elective..... 5	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

SECOND YEAR

Mus. 68 Voc. or In. St. 3		Mus. 69. Voc. or In. St. 3		Mus. 70. Voc. or In. St. 3	
Mus. 4. Mus. Lit.&Hist. 3		Mus. 5. Mus. Lit.&Hist. 3		Mus. 6. Mus. Lit.&Hist. 3	
Mus. 53. Int. Harmony. 5		Mus. 101. Adv. Harmony 5		Mus. 112. Forms..... 5	
L. A. elective (men)... 5		Physics 50. Sd. & Mus. 3		Physics 51. Sd. & Mus. 4	
Phys. Edu. lecture		Military or Naval Sci.		Military or Naval Sci.	
(women) 5		or Phys. Edu.....+		or Phys. Edu.....+	
Military or Naval Sci.....+					

THIRD YEAR

Mus. 118. Voc. or In. St. 3		Mus. 119. Voc. or In. St. 3		Mus. 120. Voc. or In. St. 3	
Mus. 10. Chorus..... 1		Mus. 11. Chorus..... 1		Mus. 12. Chorus..... 1	
or		or		or	
Mus. 31. Orchestra... 2		Mus. 32. Orchestra... 2		Mus. 33. Orchestra... 2	
Mus. 104. Mus. since		Mus. 105. Mus. since		Mus. 106. Mus. since	
1850 2		1850 2		1850 2	
Soc., Pol. Sci. or Econ.. 5		Mus. 109 Counterpoint. 5		Mus. 117. Composition. 5	
Elective. 5		Elective. 5		Elective. 5	

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mus. 168. Voc. or In.St. 3		Mus. 169. Voc. or In.St. 3		Mus. 170. Voc. or In.St. 3	
Mus. 10. Chorus..... 1		Mus. 11. Chorus..... 1		Mus. 12. Chorus..... 1	
or		or		or	
Mus. 31. Orchestra.... 2		Mus. 32. Orchestra.... 2		Mus. 33. Orchestra.... 2	
Mus. 151. Modern Mus. 2		Mus. 152. Modern Mus. 2		Mus. 153. Modern Mus. 2	
Phil. 129. Esthetics.... 5		Mus. 157. Adv. Comp... 5		Mus. 199. Sen. Recital. 2	
†Elective. 3		†Elective. 3		†Elective. 3	

FOR THE DEGREE OF BACHELOR OF MUSIC WITH A MAJOR IN SCHOOL MUSIC OR INSTRUMENTAL SCHOOL MUSIC

1. Special requirements for school music majors:

(a) Students who show satisfactory proficiency on another instrument shall complete Mus. 9A (piano) before graduation.

(b) All others must present the equivalent of Mus. 9A on entrance, and shall complete the equivalent of Mus. 50A before graduation.

(c) Nine credits in voice training shall be earned, preferably in the first two years.

2. Special requirements for instrumental school music majors:

(a) All students, upon entrance, shall demonstrate proficiency upon at least one orchestral instrument.

(b) All students shall satisfy the requirements of Mus. 9A of the school music piano course.

(c) All students shall complete a year each of study in voice, woodwind, brass-wind, and strings.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Voc. or In. St..... 1½		Voc. or In. St..... 1½		Voc. or In. St..... 1½	
Mus. 10. Chorus..... 1		Mus. 11. Chorus..... 1		Mus. 12. Chorus..... 1	
or		or		or	
Mus. 31. Orchestra.... 2		Mus. 32. Orchestra.... 2		Mus. 33. Orchestra.... 2	
Mus. 15. Mus. Fund.... 3		Mus. 16. Mus. Fund.... 3		Mus. 51. El. Harmony... 5	
Comp. 1. Composition... 5		Comp. 2. Composition... 5		Modern Language 5	
Modern Language 5		Modern Language 5		Military or Naval Sci..+	
Military or Naval Sci..+		Military or Naval Sci..+		or	
or		or		Phys. Edu. (women) .. 1	
Phys. Edu. (women) .. 1		Phys. Edu. (women) .. 1			

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Voc. or In. St..... 1½		Voc. or In. St..... 1½		Voc. or In. St..... 1½	
Mus. 4 Mus. Lit. & Hist. 3		Mus. 5. Mus. Lit. & Hist. 3		Mus. 6. Mus. Lit. & Hist. 3	
Mus. 10. Chorus..... 1		Mus. 11. Chorus..... 1		Mus. 12. Chorus..... 1	
or		or		or	
Mus. 31. Orchestra.... 2		Mus. 32. Orchestra.... 2		Mus. 33. Orchestra.... 2	
Mus. 53. Int. Harmony. 5		Mus. 101. Adv. Harm... 5		Mus. 56. School Music. 5	
Elective (men) 5		Physics 50. Sd. & Mus. 3		Physics 51. Sd. & Mus. 4	
Military or Naval Sci..+		Military or Naval Sci..+		Military or Naval Sci..+	
or		or		or	
Phys. Edu. (women).. 5		Phys. Edu. (women)... 1		Phys. Edu. (women)... 1	

THIRD YEAR

Group I. School Music

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Voc. or In. St..... 1½		Voc. or In. St..... 1½		Voc. or In. St..... 1½	
Mus. 40. Or. Instr.... 3		Mus. 41. Or. Instr.... 3		Mus. 42. Or. Instr.... 3	
Mus. 114. Int. Sch.M... 2		Mus. 115. Cho. Cond... 2		Mus. 109. Counterpoint. 5	
Mus. 127. Cho. Forms.. 2		Mus. 128. Cho. Forms.. 2		Mus. 116. Jr. H.S. Mus. 2	
Edu. 60. Sec. Edu.... 3		Edu. 90. Meas..... 2		Mus. 129. Cho. Forms.. 2	
Soc., Pol. Sci. or Econ. 5		L.A. elective 5		Edu. 9. Psych..... 3	

†Piano majors shall elect Music 165, 166, 167; organ majors shall elect Mus. 163.

Group II. Instrumental School Music

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Voc. or In. St.....	1½	Voc. or In. St.....	1½	Voc. or In. St.....	1½
Mus. 40. Or. Instr....	3	Mus. 42. Or. Instr....	3	Mus. 42. Or. Instr....	3
Mus. 127. Cho. Forms..	2	Mus. 115. Cho. Cond..	2	Mus. 109. Counterpoint.	5
Mus. 133. Sym. Orch... 2		Mus. 134. Sym. Orch... 2		Mus. 116. Jr. H.S. Mus. 2	
Edu. 60. Sec. Edu..... 3		Mus. 152. Modern Mus.. 2		Mus. 135. Sym. Orch... 2	
Soc., Pol. Sci. or Econ. 5		Edu. 90. Meas..... 2		Edu. 9. Psych. 3	

FOURTH YEAR

Group I. School Music

Voc. or In. St.....	1½	Voc. or In. St.....	1½	Voc. or In. St.....	1½
Mus. 151. Modern Mus. 2		Mus. 112. Forms..... 5		Mus. 117. Composition. 5	
Mus. 154. Sr.H.S.Music. 3		Mus. 152. Modern Mus.. 2		Mus. 153. Mod. Music.. 2	
Mus. 180. Orch. Cond.. 2		Mus. 155. Mus. Super.. 5		Edu. 70. Int.H.S.Pro... 5	
Phil. 129. Esthetics... 5		L.A. elective 2		L.A. elective 2	
L.A. elective 2					

Group II. Instrumental School Music

Voc. or In. St.....	1½	Voc. or In. St.....	1½	Voc. or In. St.....	1½
Mus. 140. Adv.Orch.Inst. 3		Mus. 112. Forms..... 5		Mus. 117. Composition. 5	
Mus. 151. Modern Mus. 2		Mus. 141. Adv. Orch. In. 3		Mus. 142. Adv.Orch Inst. 3	
Mus. 154. Sr.H.S.Music. 3		Mus. 155. Sr.H.S.Mus.. 5		Mus. 153. Mod. Music.. 2	
Mus. 180. Orch. Cond.. 2		Mus. 181. Orch. Cond... 2		Edu. 70. Int.H.S.Pro... 5	
Phil. 129. Esthetics... 5					

The degree of bachelor of music will be awarded upon successful completion of the requirements for the fourth year. The five year normal diploma will be awarded upon completion of the requirements as outlined below:

Group I. School Music

Mus. 168. Voc.or In. St. 1½	Mus. 169. Voc.or In.St. 1½	Mus. 170. Voc.or In.St. 1½
Mus. 190. Bach & Predecessors..... 4	Edu. 71. 18th & 19th C. 4	Mus. 192. Cont. Comp. 4
L.A. Electives 10	Edu. 71. Cadet Teach.. 8	Edu. 120. Edu. Soc..... 3
	L. A. electives..... 7	L. A. electives..... 2

Group II. Instrumental School Music

Mus. 168. Voc.or In. St. 1½	Mus. 169. Voc.or In.St. 1½	Mus. 170. Voc.or In.St. 1½
Mus. 190. Bach & Predecessors..... 4	Mus. 143. Orchestration. 5	Edu. 120. Edu. Soc..... 3
L. A. electives..... 10	Mus. 191. 18th & 19th C. 4	L. A. electives..... 6
	Edu. 71. Cadet Teach.. 8	
	L. A. electives..... 2	

FOR THE BACHELOR OF MUSIC DEGREE WITH A MAJOR IN COMPOSITION

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Voc. or In. St.....	1½	Voc. or In. St.....	1½	Voc. or In. St.....	1½
Mus. 4. Mus.Lit.&Hist. 3		Mus. 5. Mus.Lit.&Hist. 3		Mus. 6. Mus.Lit.&Hist. 3	
Mus. 10 Chorus..... 1		Mus. 11. Chorus..... 1		Mus. 12 Chorus..... 1	
or		or		or	
Mus. 31 Orchestra.... 2		Mus. 32. Orchestra.... 2		Mus. 33. Orchestra.... 2	
Mus. 16 Mus. Fund. 3		Mus. 51. El. Harmony 5		Mus. 53. Int. Harmony 5	
Comp. 1. Composition.. 5		Comp. 2. Composition.. 5		Military or Naval Sci +	
Military or Naval Sci +		Military or Naval Sci +		or	
or		or		Phys. Edu. 10 (Women) 5	
Phys. Edu. (Women).. 1		Phys. Edu. (Women).. 1			

SECOND YEAR

Voc. or In. St.....	1½	Voc. or In. St.....	1½	Voc. or In. St.....	1½
Mus. 101. Adv. Harm.. 5		Mus. 109. Counterpoint. 5		Mus. 112. Forms 5	
Econ., Pol. Sci. or Soc. 5		Modern Language 5		Modern Language 5	
Modern Language 5		Physics 50. Sd. & Mus. 3		Physics 51. Sd. & Mus. 4	
Military or Naval Sci. +		Military or Naval Sci. +		Military or Naval Sci. +	
or		or		or	
Phys. Edu. (women) .. 1		Phys. Edu. (women) .. 1		Phys. Edu. (women) .. 1	

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Voc. or In. St.....	1½	Voc. or In. St.....	1½	Voc. or In. St.....	1½
Mus. 10 or 31. Cho. or		Mus. 11 or 32. Chor. or		Mus. 12 or 33. Chor. or	
Orchestra	1-2	Orchestra	1-2	Orchestra	1-2
Mus. 104. Mus. Since		Mus. 105. Mus. Since		Mus. 106. Mus. Since	
1850.	2	1850.	2	1850.	2
Mus. 117. Comp.....	5	Mus. 143. Orches.....	5	Elective.	10
Elective	5	Mus. 157. Adv. Comp... 5			

FOURTH YEAR

Voc. or In. St.....	1½	Voc. or In. St.....	1½	Voc. or In. St.....	1½
Mus. 151. Mod. Music. 2		Mus. 152. Mod. Music. 2		Mus. 153. Mod. Music. 2	
Mus. 163. Adv. Comp. 5		Mus. 197A. Comp. . . . 3		Mus. 197B. Adv. Comp. 3	
Phil. 129. Esthetics.... 5		Elective	10	Elective	9
Elective.	3				

FOR THE DEGREE OF BACHELOR OF ARTS IN MUSIC

Major students in this course will be given an examination in vocal or instrumental study at the end of the junior year.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mus. 10. Chorus	1	Mus. 11. Chorus.....	1	Mus. 12. Chorus.....	1
or		or		or	
Mus. 31. Orchestra....	2	Mus. 32. Orchestra....	2	Mus. 33. Orchestra....	2
Mus. 15. Mus. Fund....	3	Mus. 16 Mus. Fund....	3	Mus. 51. El. Harmony..	5
Comp. 1. Composition..	5	Comp. 2. Composition..	5	Modern Language	5
Modern Language	5	Modern Language	5	L.A. 11. Intro. to Fine	
Military or Naval Sci. +		Military or Naval Sci. +		Arts	5
or		or		or	
Phys. Edu. (women)... 1		Phys. Edu. (women)... 1		Elective.	5
				Military or Naval Sci. +	
				or	
				Phys. Edu. (women)... 1	

SECOND YEAR

Mus. 4. Mus. Lit. & Hist. 3	Mus. 5. Mus. Lit. & Hist. 3	Mus. 6. Mus. Lit. & Hist. 3
Mus. 53. Int. Harmony. 5	Mus. 101. Adv. Harm. 5	Mus. 117. El. Comp... 5
Elective.	Physics 50. Sd. & Mus. 3	Physics 51. Sd. & Mus. 4
Phys. Edu. Lecture	Military or Naval Sci. +	Military or Naval Sci. +
(women)	or	or
Military or Naval Sci. +	Phys. Edu. (women) .. 1	Phys. Edu. (women) .. 1
Elective (men)		

THIRD YEAR

Music elective	5	Music elective	5	¹ Science	5
Econ., Pol. Sci. or Soc. 5		¹ Science	5	² L.A. electives	10
Free elective	5	² L.A. elective	5		

FOURTH YEAR

Music elective	5	Music elective	5	² L.A. electives	15
Phil. 129. Esthetics.... 5		² L.A. electives	10		
² L.A. elective	5				

¹ If a student presents one unit of high school chemistry or physics and one unit of high school botany or geology or zoology, he may substitute ten credits of elective for this science requirement.

² Liberal arts electives for the junior and senior years must be in upper division courses except with the consent of the dean.

II. ARCHITECTURE

Methods of Instruction. The plan of study recognizes that architecture is essentially a scientific art, the practice of which must be based on a thorough knowledge of construction and the practical requirements of buildings. Technical training which has not recognized the importance of the principles of design has failed notably to raise the skilled draftsman to the position of an architect.

Design. A knowledge of design is the most essential subject in a course preparing students for the profession of architecture. The program of studies is so arranged, therefore, that most weight is given to these subjects. The student gives the greater part of his afternoons to work in the drafting room. This work consists largely of problems in architectural design presented as far as possible to develop technical skill without hindering individuality of expression. After the freshman year, problems will be judged by a committee of practising architects and faculty appointed by the head of the department. All drawings made by the students are the property of the department until returned.

Construction. The theory and practice of construction is taught as a necessary basis for and in connection with architectural design. It prepares students in the best way for architectural practice. The department strongly recommends that the student supplement his university training by work in an architect's office. Three months of office work, at least; should be done by the student before he obtains his degree.

Business. Besides the two main branches of architecture—design and construction—a third important factor in modern practice is business. A portion of the senior year is taken up by business subjects.

Allied Subjects. Closely allied with each of the two main branches are various other subjects. History of architecture, freehand drawing and modeling are properly related to design; mathematics and the like are taught in their proper relation to construction.

Required for Degree. The credit requirement for graduation (outside of military or naval science and physical education) is set by this curriculum at 225 credits. Because of the manifold requirements relative to a well rounded architectural education, no deviation or substitution of courses will be permitted except by consent of the head of the department, where it can be shown that work similar to the subjects in question has been done. In the courses of design, Arch. 54, 55, 56 are known as Grade I; Arch. 104, 105, 106, 107, Grade II; and Arch 154, 155, 156, 157, 158, Grade III. However, a student may in some cases advance more rapidly and satisfy by perfection of work the requirements of a grade without technical registration for all three quarters of that grade. In such cases, which will only be by points of excellence, a student may be excused by the department from registering in all of the courses in a grade, and still be allowed to graduate. The total number of credits hereby reduced must not be below the University minimum of 180 credits for a four-year course and 225 credits for the five-year course.

CURRICULUM IN ARCHITECTURE LEADING TO THE DEGREE OF BACHELOR OF ARCHITECTURE

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Arch. 1. Arch. Apprec.. 2		Arch. 2. Arch. Apprec.. 2		Arch. 3. Arch. Apprec.. 2	
Arch. 4. El. of Design.. 4		Arch. 5. El. of Design.. 4		Arch. 6. El. of Design.. 4	
Arch. 7. Graphics 1		Arch. 8. Graphics 1		Arch. 9. Graphics..... 1	
Arch. 47. El. Bldg. Con. 3		Arch. 48. El. Bldg. Con. 3		PSD 34. Draw. & Sculp. 3	
PSD 32. Draw. & Sculp. 3		PSD 33. Draw. & Sculp. 3		Comp. 6. Composition... 3	
Comp. 4. Composition.. 3		Comp. 5. Composition.. 3		Electives 2	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

SECOND YEAR

Arch. 51. Hist. of Arch. 2		Arch. 52. Hist. of Arch. 2		Arch. 53. Hist. of Arch. 2	
Arch. 54. Design Gr. I. 5		Arch. 55. Design Gr. I. 5		Arch. 56. Design Gr. I. 5	
Math. 54. Trig..... 5		Math. 55. Algebra..... 3		Math. 56. Anal. Geom.. 3	
French 1. Elem..... 5		French 2. Elem..... 5		French 3. Elem..... 5	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

THIRD YEAR

Arch. 40. Water Color. 2		Arch. 41. Water Color. 2		Arch. 42. Water Color. 2	
Arch. 101. Hist. of Arch. 2		Arch. 102. Hist. of Arch. 2		Arch. 103. Hist. of Arch. 2	
Arch. 104. Des. Gr. II.. 5		Arch. 105. Des. Gr. II.. 5		Arch. 106. Des. Gr. II. 5	
Arch. 120. Work. Draw. 2		Arch. 117. Bldg. Const. 3		Arch. 118. Bldg. Const. 3	
C.E. 130. Theory Const. 3		Arch. 121. Work. Draw. 2		Arch. 122. Work. Draw. 2	
E.E. 105. Elec. Engin.. 2		C.E. 106. Plumb. & Sanit..... 2		M.E. 107. Heat. & Vent. 2	

FOURTH YEAR

Arch. 107. Design Gr. II..... 5		Arch. 113. Freehd. Draw. 3		Arch. 126. Pencil Sketch. 1	
Arch. 112. Freehand Dr. 3		Arch. 125. Pencil Sketch. 1		Arch. †142. Hist. of Orn. 2	
Arch. 140. Hist. of Orn. 2		Arch. 141. Hist. of Orn. 2		Arch. 151. Hist. of Arch. 2	
Electives 6		Arch. 154. Des. Gr. III. 5		Arch. 155. Des. Gr. III. 5	
		Electives 5		Electives 6	

FIFTH YEAR

Arch. 152. Theory of Arch..... 2		Arch. 153. Arch. Materials..... 2		Arch. 158. Des. Gr. III. 5	
Arch. 156. Des. Gr. III. 5		Arch. 157. Des. Gr. III. 5		Arch. 159. Spec. and Off. Pr..... 2	
PSD 160. Life Drawing 3		Arch. 170. Senior Mech. 2		PSD 162. Life Drawing 3	
B.A. 54. Bus. Law..... 3		PSD 161. Life Drawing 3		Electives 5	
Electives 2		Electives 3			

III. PAINTING, SCULPTURE AND DESIGN

Advanced standing in this department is granted only on credentials from art schools or university art departments whose standards are recognized by this department. Ordinarily, the presentation of samples of work done will be required before advanced standing will be considered.

Opportunities for professional careers are to be found in the fields of public school art teaching, interior decoration, costume design and commercial art. Before deciding to enter any of these fields, the student should consult the various instructors as to the opportunities provided and as to his or her particular fitness for the work. Usually it is best to make this decision in the second year, since the first year requirements are the same in all branches. Only students of unusual ability should undertake to enter the professional field. For the teachers' course, candidates should have B standing or above, in art subjects.

†Suggested elective but not required.

**FOR THE DEGREE OF BACHELOR OF FINE ARTS WITH A MAJOR IN
PAINTING AND DESIGN**

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
PSD 5. Drawing.....	3	PSD 6. Drawing.....	3	PSD 7. Drawing.....	3
PSD 9. Art Structure..	3	PSD 10. Art Structure..	3	PSD 11. Art Structure..	3
Comp. 4. Composition...	3	Comp. 5. Composition..	3	Comp. 6. Composition...	3
Modern For. Lang.....	5	Modern For. Lang.....	5	Modern For. Lang.....	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Physical Edu.....+		or Physical Edu.....+	

SECOND YEAR

PSD 53. Art Struc....	3	PSD 54. Art Struc....	3	PSD 20. Sculp. Apprec. 2	
PSD 56. Draw & Ptg..	3	PSD 57. Draw. & Ptg..	3	PSD 55. Art Structure. 3	
L.A. electives	5	L.A. 11. Intro. Fine		PSD 58. Draw. & Ptg..	3
Electives	4	Arts or electives...	5	Electives	7
Military or Naval Sci.		Electives	4	Military or Naval Sci.	
or Physical Edu.....+		Military or Naval Sci.		or Physical Edu.....+	
		or Physical Edu.....+			

THIRD YEAR

PSD 103. Pottery.....	3	PSD 104. Pottery.....	3	Arch. 3. Arch. Apprec..	2
or		or		Laboratory Science	5
PSD 157. Metal Work. 3		PSD 158. Metal Work. 3		Electives	8
PSD 126. Hist. of Ptg. 2		Laboratory Science	5		
Pol. Sci., Econ. or Soc. 5		Electives	7		
Electives	4				

FOURTH YEAR

PSD 150. Illus.....	3	PSD 151. Illus.....	3	PSD 152. Illus.....	3
or		or		or	
Life.....	3	Life.....	3	Life.....	3
PSD Electives	6	PSD Electives	6	PSD Electives	6
Electives	7	Electives	7	Electives	7

Preferred electives for students interested in costume design—P.S.D. 169, 170, 171, 179, 180, 181: H.E. courses in clothing and textiles, 25, 112, 113, 119, 133, 160, 161.
For those interested in commercial art: life or portrait.

**FOR THE DEGREE OF BACHELOR OF FINE ARTS WITH A MAJOR IN PUBLIC
SCHOOL ART**

All students intending to teach are expected to take all the courses given in this curriculum. All substitutions must be arranged for through the head of the department.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
PSD 5. Drawing.....	3	PSD 6. Drawing.....	3	PSD 7. Drawing.....	3
PSD 9. Art Struc....	3	PSD 10. Art Struc....	3	PSD 11. Art. Struc....	3
Comp. 4. Composition...	3	Comp. 5. Composition..	3	Comp. 6. Composition...	3
Modern For. Lang.....	5	Modern For. Lang.....	5	Modern For. Lang.....	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Edu.....+		or Physical Edu.....+		or Physical Edu.....+	

SECOND YEAR

PSD 53. Art. Struc....	3	PSD 54. Art Struc....	3	PSD 55. Art Struc....	3
PSD 56. Draw. & Ptg..	3	PSD 57. Draw. & Ptg..	3	PSD 58. Draw. & Ptg..	3
Laboratory Science ...	5	Laboratory Sci.	5	Edu. 60 or 62. Sec. Ed. 3	
Electives	3	Electives	3	Econ., Soc., or Pol. Sci. 5	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Edu.....+		or Physical Edu.....+		or Physical Edu.....+	

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
PSD. Life	3	PSD 104. Pottery.....	3	PSD 20. Sculp. Apprec.	2
PSD 103. Pottery.....	3	or 158. Jewelry.....	3	PSD 166. Stage Des...	3
or 157. Metal.....	3	L.A. 11. Intro. to Fine		Edu. 70. Methods.....	5
PSD 126. Hist. of Ptg..	2	Arts. or L.A. Elect.	5	L.A. electives	5
PSD 129. Design. Appr.	2	Edu. 9. Psych. of Sec.			
Edu. 90. Meas. in Sec.		Edu.....	3		
Edu.....	3	Electives	4		
Electives	3				

FOURTH YEAR

PSD 150. Illus.....	3	PSD 151. Illustration..	3	PSD 152. Illustration..	3
PSD. Composition.....	3	PSD 105. Art Struc....	3	PSD 106. Art Struc....	3
PSD 100. Methods.....	2	PSD 102. Indus. Arts..	2	PSD 101. El. Int. Des..	2
Phil. 129. Esthetics....	5	Edu. 71. Cadet Teaching	8	Edu. 71. Cadet Teaching	
Electives	3	Electives	3	Electives	3

A recommended program for the fifth year in public school art: 15 credits in general or cultural subjects, 15 in the major and 12 in a minor outside major department; Edu. 120.

Applicants for the five year normal diploma are required to complete the curriculum of the current catalogue, unless the diploma is granted within five years from date of entrance.

FOR THE DEGREE OF BACHELOR OF FINE ARTS WITH A MAJOR IN INTERIOR DESIGN

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
PSD 5. Drawing.....	3	PSD 6. Drawing.....	3	PSD 7. Drawing.....	3
PSD 9. Art Struc.....	3	PSD 10. Art Struc....	3	PSD 11. Art Struc....	3
Comp. 4. Composition..	3	Comp. 5. Composition..	3	Comp. 6. Composition..	3
Modern For. Lang.....	5	Modern For. Lang.....	5	Modern For. Lang.....	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Edu.....+		or Physical Edu.....+		or Physical Edu.....+	

SECOND YEAR

Arch. 1. Appreciation..	2	Arch. 2. Appreciation..	2	Arch. 3. Arch. Apprec..	2
Arch. 4. El. of Design..	4	Arch. 5. El. of Design..	4	Arch. 6. Elem. of Design	4
Arch. 7. Graphics.....	1	Arch. 8. Graphics.....	1	Arch. 9. Graphics.....	1
PSD 80. Furn. Des....	3	PSD 81. Furn. Design..	3	PSD 82. Furn. Design..	3
L.A. Electives	5	Electives	5	Electives	4
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Edu.....+		or Physical Edu.....+		or Physical Edu.....+	

THIRD YEAR

PSD 110. Inter. Design	5	PSD 111. Inter. Des... 5	PSD 112. Inter. Design	5
Pol. Sci., Soc., Econ... 5		Laboratory Science ... 5	Laboratory Science ... 5	
Electives	5	LA. 11. Intro. to Fine	Electives	5
		Arts. or electives... 5		

FOURTH YEAR

PSD 126. Hist. of Ptg..	2	H.E. 47. House Furn...	3	PSD 20. Sculp. Apprec.	2
PSD 172. Inter. Design	5	PSD 173. Inter. Design	5	PSD 174. Inter. Design	5
H.E. 25. Textiles.....	3	Arch. 102. History.....	2	Arch. 103. History.....	2
Arch. 101. History.....	2	Electives	6	Electives	7
Electives	4				

MAJOR IN PAINTING OR SCULPTURE

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
PSD 5. Drawing.....	3	PSD 6. Drawing.....	3	PSD 7. Drawing.....	3
PSD 9. Art Struc.....	3	PSD 10. Art Struc....	3	PSD 11. Art Struc....	3
Comp. 4. Composition..	3	Comp. 5. Composition..	3	Comp. 6. Composition..	3
Modern For. Lang.....	5	Modern For. Lang.....	5	Modern For. Lang.....	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Edu.....+		or Physical Edu.....+		or Physical Edu.....+	

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
PSD 56. Painting..... 3		PSD 57. Painting..... 3		PSD 58. Painting..... 3	
PSD 65. Draw. & Ptg.. 3		PSD 66. Draw. & Ptg.. 3		PSD 67. Draw. & Ptg.. 3	
or		or		or	
PSD *72. Sculpture.... 3		PSD *73. Sculpture.... 3		PSD *74. Sculpture.... 3	
L.A. Electives 5		L.A. 11. Intro. Fine		Electives10	
Electives 5		Arts. or Electives.. 5		Military or Naval Sci.	
Military or Naval Sci.		Military or Naval Sci.		or Physical Edu.....+	
or Physical Edu.....+		or Physical Edu.....+			

THIRD YEAR

Group I—Painting

PSD 107. Portrait..... 3	PSD 108. Portrait..... 3	PSD 109. Portrait..... 3
PSD 126. Hist. of Ptg.. 2	PSD 105. Lettering, Art	PSD 106. Posters, Art
PSD 150. Illustration.. 3	Structure..... 3	Structure..... 3
Pol. Sci., Econ., or Soc. 5	Laboratory Science ... 5	Arch. 3. Arch. Apprec.. 2
Electives 3	Electives 4	Laboratory Science 5
		Electives 2

Group II—Sculpture

PSD 103. Pottery..... 3	PSD 104. Pottery..... 3	Arch. 3. Arch. Apprec.. 2
PSD 122. Sculpture.... 3	PSD 123. Sculpture.... 3	PSD 20. Sculp. Apprec. 2
PSD 126. History Ptg.. 2	Laboratory Science ... 5	PSD 124. Sculpture.... 3
Pol. Sci., Econ. or Soc. 5	Electives 3	Laboratory Science 5
Electives 3		Electives 2

FOURTH YEAR

Group I—Painting

PSD 160. Life..... 3	PSD 161. Life..... 3	PSD 162. Life..... 3
PSD 163. Composition.. 3	PSD 164. Composition.. 3	PSD 165. Composition.. 3
Electives10	Electives10	Electives10

Group II—Sculpture

PSD 132. Sculpture... 3	PSD 133. Sculpture... 3	PSD 134. Sculpture.... 3
PSD 136. Sculp. Comp. 3	PSD 137. Sculp. Comp.. 3	PSD 138. Sculp. Comp.. 3
PSD 160. Life..... 3	PSD 161. Life..... 3	PSD 162. Life..... 3
Electives 7	Electives 7	Electives 7

Preferred Electives—architectural design and history of ornament.

COURSES OF STUDY

For a description of courses in architecture, music, painting, sculpture and design, see Departments of Instruction section.

COLLEGE OF FORESTRY

GENERAL INFORMATION

The College of Forestry was established in 1907. Its location has exceptional advantages, offering splendid opportunities for field work in silviculture and forest measurements on the 582 acres which comprise the University campus. Other excellent forests are within walking distance of the campus. The University owns large forest tracts in various parts of the state, where students may conduct extensive research work. The immense national forests within a few hours' ride of Seattle afford practical object lessons in forest management. Washington is the largest lumber producing state in the country, and Seattle is in the center of the timber industry of Washington and the Northwest. In its many sawmills and wood-working industries, the student has unrivaled opportunities for studying wood utilization.

BUILDINGS

The main building of the College of Forestry, Alfred H. Anderson Hall, was completed in the spring of 1925 at a cost of \$260,000. It contains the lecture rooms, student laboratories, exhibition rooms, library, reading and Forest Club. It aims to promote acquaintance and good fellowship among area of 7,500 feet, it has three full floors and a large draughting room on the fourth floor. The appointments are unusually complete. This building was presented to the University by Mrs. Agnes H. Anderson to promote the cause of forestry in the State of Washington. The Forest Products Laboratory, which was erected by the University in 1921 at a cost of \$85,000, is a modern two-story building designed for research work in forest products. A covered arcade connects this building with Alfred H. Anderson Hall.

DEMONSTRATION FOREST

A tract of approximately 2,000 acres located at LaGrande, Washington, and adjoining the Rainier National Park Highway, is a gift of the Charles Lathrop Pack Forestry Trust. The tract contains approximately 25,000,000 feet of timber and is most admirable for experimental and demonstration purposes.

FOREST CLUB

All students in the College of Forestry are eligible to membership in the Forest Club rooms and an assembly hall seating 250. Covering a ground students and instructors; to keep in touch with every day problems in forestry and lumbering, and the leaders in these industries; to interest the public in the college and in the forestry and lumbering problems of the state. A magnificent room has been provided in the new building for the use of the Forest Club.

The club has issued the *Forest Club Annual* regularly since 1913. This publication has been devoted to articles and illustrations of the college; to scientific and popular articles about forestry and to a complete roster of students and alumni. In April, 1922, the annual was superseded by an illustrated magazine known as the *University of Washington Forest Club Quarterly*. The subscription price is \$1 a year. It is devoted largely to Western forestry and lumbering problems.

FIELD INSTRUCTION AND SUMMER WORK

Much of the instruction in forestry is given in the field, in nearby forests, logging camps, saw mills, woodworking plants, and plants that manufacture equipment. The spring quarter of the sophomore year is spent at the Pack Demonstration Forest, where a completely equipped camp has been provided.

This work enables the student to correlate theoretical class room instruction with its application in the field.

Students in forestry are urged to spend their summer vacations in some line of practical work connected with the forest industry. The college is situated in the heart of a great lumbering section and near extensive national forests which offer ample opportunity for summer employment. Students not only acquire valuable experience in this way, but earn a considerable portion of their university expenses. The college co-operates with the industries in placing students and graduates in the positions for which they are best fitted.

LABORATORIES

Especially equipped laboratories in dendrology, mensuration, timber physics, wood technology, wood preservation, kiln drying, paper and pulp, and plywood are available. Laboratory work in logging engineering, milling and silviculture are largely conducted in the field and at local commercial operations.

REQUIREMENTS FOR ADMISSION

Correspondence. Credentials and all correspondence relating to admission to any college or school of the University should be addressed to the Registrar, University of Washington. For detailed information concerning admission, registration and general University fees and expenses, applicable to all students, see pages 35, 43, 45.

SPECIAL REQUIREMENTS OF THE COLLEGE OF FORESTRY

In addition to the three units of English and the two units of mathematics required for admission to all colleges of the University, it is recommended that a student expecting to enter the College of Forestry should elect his work so as to offer the following subjects:

Advanced Algebra..... $\frac{1}{2}$ unit Physics.....1 unit

Foreign Language. Beginning in the autumn of 1934 two units in modern foreign language will be required for entrance, one of which may be taken in the 9th grade. German is preferred, though not required.

Qualifying examinations are required in advanced high school algebra and elementary composition. Applicants who fail in these examinations must register in Math. 1 and Comp. A without credit.

In satisfying entrance requirements with college courses, a minimum of ten credits is counted as the equivalent of the entrance unit.

DEGREES

Undergraduate Work. For the degree of bachelor of science in forestry (B.S.F.) the student must complete, in addition to required subjects outlined in the curriculum, enough electives to make a total of 180 credits. Electives may be selected from forestry, lumbering, engineering or the botanical, chemical, zoological, geological or economic sciences, the subjects to be approved by the student's class adviser. Ordinarily not more than 25 elective credits in any department other than forestry will be accepted for graduation. Exclusive of the basic military or naval science or physical education, 180 credits are required for graduation. Candidates for the degree must receive grades of A, B, or C in at least three-fourths of the credits for the degree.

Five-Year Course. In order to enable students to obtain a broader choice of electives in the cultural subjects as well as to secure a better opportunity for a minor in one of the pure sciences or in economics, provision has been made for a five-year undergraduate course. Students completing this course will be awarded the degree of bachelor of forest sciences (B.F.S.).

Graduate Work. Two advanced degrees are offered to students who have received the bachelor's degree at this University or other institutions of equal rank, and have a satisfactory knowledge of the fundamental sciences. The candidate for the degree of master of forestry (M.F.) must earn 225 credits at this University, of which at least 78 are in approved technical forestry subjects. The candidate for the degree of master of science in forestry (M.S.F.) must present a minor in one or two subjects in the College of Science. In addition to these requirements, the candidate for either degree must present a thesis embodying results of independent research and pass an oral examination open to all members of the faculty. Only grades of A and B can be counted in graduate work.

For more detailed information on graduate work, see page 115.

SPECIAL OPPORTUNITIES FOR ADVANCED WORK

The physical equipment of the College of Forestry and the exceptional advantages of its location are particularly advantageous for graduate students. The advanced courses include forest geography, silviculture, management, wood technology, timber physics, wood preservation, advanced forest products, the business of lumbering, and research. A graduate from a college of forestry of equal rank with the College of Forestry of this University may complete the requirements for the advanced degree in one year. Graduates from other institutions of equal rank which give no courses in technical forestry may complete the required work in two years, providing they have training in the fundamental sciences, mathematics and surveying.

ORGANIZATION OF THE CURRICULUM

The curriculum of the College of Forestry is organized to give the student a broad general training in his first two years' attendance with opportunity for specialization in the two final years. Enough elementary technical work is included in the lower division to give the student definite preparation for some practical field of work by the end of his sophomore year.

A fair degree of specialization can be had in the four-year undergraduate course, but a year of graduate work is advised for more thorough specialization. The College of Forestry offers work for thorough specialization in (1) forest management, from the standpoint of both public and private forest holdings; (2) forest engineering; (3) lumber manufacturing; (4) forest products; (5) forestry sciences.

Upon beginning work in the upper division students must elect to follow one of these specialties.

Specialization in forest pathology, forest entomology, recreation, or any other lines into which a broad training in forestry enters, is provided under the head of forest sciences.

Choice of Electives. In election of studies students should follow the sequence of subjects as outlined in the curriculum. Deviations from the prescribed order will not be allowed by class advisers unless such deviation is imperative.

Students should decide by the end of their sophomore year in which field they desire to specialize. The student should be especially careful to

register for the electives required for his advanced specialized courses, as students ordinarily will not be admitted to advanced subjects who have not had the necessary prerequisites indicated in the time schedule.

LOWER DIVISION

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Bot. 11. Foresters'.....	4	Bot. 1. Foresters'.....	4	For. 1a. Dendrology....	3
For. 2. Intro.....	3	For. 3. Intro.....	2	For. 4. Protection.....	3
Math. 51. Trig.....	4	Comp. 1. Composition..	5	Math. 13. Stat. Meth..	5
Physics 1. General.....	5	Physics 2. General.....	5	Physics 3. Electric.....	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

SECOND YEAR

For. 1b. Dendrology... 3	For. 60. Mensuration.. 4	<i>Soph. Field Trip</i>
For. 15. Gen. Lumb... 5	G.E. 7. Engr. Draw... 3	For. 40. Silvicult..... 3
Chem. 1 or 21. General. 5	Chem. 2 or 22. General. 5	For. 62. Mensuration.. 6
For. 140. Construction. 3	For. 121. Silvics..... 3	C.E. 55. For. Surv..... 2
Military or Naval Sci.	Military or Naval Sci.	C.E. 56. For. Surv..... 5
or Phys. Edu.....+	or Phys. Edu.....+	Military or Naval Sci.
		or Phys. Edu.....+

UPPER DIVISION

Beginning with the upper division the student will, with the approval of his faculty adviser, elect to follow one of the specialties in forestry. In registering for upper division courses he must include all electives required as prerequisites for the advanced specialized courses. (See prerequisite list under Description of Courses, For. 153, 184, 187.)

GENERAL FORESTRY CURRICULUM

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 10. Wood Technol. 3		For. 11. Wood Struc... 3		B.A. 3. Gen. Econ..... 3	
For. 115. Protection... 3		For. 104. Tim. Physics. 5		For. 105. Wood Pres... 5	
For. 122. Silv. Methods 5		For. 158. Utilization... 5		Bot. 11. For. Pathol... 5	
Elective 5		Elective 3-5		Elective 5	

FOURTH YEAR

For. 119. For. Admin... 3	For. 126. For. Econ.... 4	Senior Field Trip.....16
For. 151. For. Finance. 4	For. 152. For. Organ.. 4	
For. 185. For. Engr... 4	For. 171. For. Geog... 4	
Elective 3-5	Elective 3-5	

FOREST PRODUCTS CURRICULUM

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 10. Wood Tech... 3		For. 11. Wood Struc.. 2		B.A. 3. Gen. Econ..... 3	
B.A. 65. Acct. Surv... 5		For. 104. Tim. Physics. 5		Bot. 111. For. Pathol.. 5	
M.E. 82. Steam Engr.. 3		For. 158. For. Util.... 5		For. 105. Wood Pres.. 3	
Elective 3-5		Elective 3-5		For. 106. Wood Pr. Lab 2	
				Elective 3	

FOURTH YEAR

For. 140. Constr..... 3	For. 126. For. Econ.... 4	For. 184. Mfg. Prob.... 5
For. 183. Milling..... 5	For. 171. For. Geog... 4	For. 189. Wood Pulp.. 5
Elective 8	For. 188. Kiln Drying.. 3	Elective 5
	Elective 5	

Graduate Year

The following subjects are primarily for graduate students. Seniors will be allowed to elect them only upon recommendation of the dean and the instructor concerned. With the exception of the thesis, none of the subjects, strictly speaking, is required, but the student will elect all those belonging to one specialty as determined on consultation with his faculty adviser. A sufficient number will have to be taken to fulfill the requirements for the master's degree. Nine credits only will be allowed for total thesis credit.

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 202. Thesis	3-6	For. 202. Thesis	3-6	For. 202. Thesis	3-6
For. 204. Working Plans	3	For. 211. Grad. Studies	3-6	For. 203. Adv. Preserv.	3
For. 210. Grad. Studies	3-6	For. 214. Research	1-5	For. 212. Grad. Studies	3-6
For. 213. Research	1-5	For. 221. Hist. & Policy	3	For. 215. Research	1-3
For. 220. Adv. For. Eng.	5				

FIVE-YEAR COURSE

Students are advised to look forward to a five-year course in preparation for the degree of bachelor of forest sciences. Progress in forestry is rapid, and competition for the higher places is becoming keen. Practically all of the better forestry colleges are looking forward to a five-year requirement. Five years will allow ample provision for a minor in one of the sciences, in engineering, or in economics, and a broader selection of the more purely cultural subjects. A limited amount of browsing is advised, but the student should elect at least 20 credits in a field basic to his specialty so as to fulfill the requirements of a minor in one of the non-forestry groups. Five groups for undergraduate election are advised as follows:

1. Engineering: continuation of mathematics; B.A. 57 and 65; M.E. 82 and 85; G.E. 1 and 2; C.E. 58.
2. Pathology: Bot. 140, 141, 142.
3. Physiology: Bot. 143, 144, 145.
4. Entomology: Zool. 1, 2, 111, 112.
5. Economics: B.A. 1, 2, 7, 57, 100.

COURSES OF STUDY

For a description of courses offered by the College of Forestry, see Departments of Instruction section.

GRADUATE SCHOOL

GENERAL STATEMENT

SPECIAL NOTE: The bulletin of the Graduate School gives courses and specific department requirements for advanced degrees.

The Aims of Graduate Study. The principal aims of graduate study are the development of intellectual independence through cultivation of the scientific, critical and appreciative attitude of mind, and promotion of the spirit of research. The graduate student is therefore thrown more largely upon his own resources than the undergraduate, and must measure up to a more severe standard. The University is consistently increasing the emphasis on graduate work in order that it may be a strong center for advanced study.

Organization. The Graduate School was formally organized in May, 1911. The graduate faculty consists of men offering courses primarily designed for graduate students.

FEES

Graduation Fee. Each recipient of a higher degree pays a graduation fee of five dollars (\$5).

Thesis Fee. Each such recipient pays a fee of two dollars (\$2) for the binding of one copy of his thesis.

Publishing Fund. Each recipient of the degree of doctor of philosophy contributes fifty dollars (\$50) to the publishing fund. See paragraph 6, page 118.

For detailed information concerning general fees, see page 45.

LIBRARY FACILITIES

The University general library contains 253,986 volumes, and receives virtually all of the publications of learned societies. The law library contains approximately 57,710 volumes. The Seattle public library, containing about 501,704 volumes, is open to students without charge.

Collections of special significance are mentioned in the departmental announcements.

SPECIAL FACILITIES

Bailey and Babette Gatsert Foundation for Child Welfare. On December 21, 1910, this foundation was established by a gift to the University of \$30,000. The purpose of the foundation is (1) to conduct a laboratory for the mental and physical examination of children to determine their individual defects and aptitudes and, in accordance with results of the examination, to suggest the best means of education and treatment; (2) to assist in establishing the child welfare agencies and child study laboratories throughout the state, and (3) to carry on research in child psychology.

The Alice McDermott Memorial Fund. The late Mrs. Josephine P. McDermott made provision in her will for the establishment of the Alice McDermott Memorial Fund at the University of Washington. The amount of this bequest is \$100,000, available for one or both of the following purposes:

1. Research work in or in connection with the University of Washington tending to promote the prevention of tuberculosis.
2. The purchase of radium for research work in connection with disease or for actual treatment thereof.

Engineering Experiment Station. The purpose of the station is to aid in the industrial development of the state and nation by scientific research and by furnishing information for the solution of engineering problems.

The scope of the work is two-fold.

1. To investigate and to publish information concerning engineering problems of a more or less general nature that would be helpful in municipal, rural, and industrial affairs.

2. To undertake extended research and to publish reports on engineering and scientific problems.

Every effort will be made to co-operate effectively with professional engineers and the industrial organizations in the state. Investigations of primary interest to the individual or corporation proposing them, as well as those of general interest, will be undertaken through the establishment of fellowships.

For administrative purposes, the work of the station is organized into eight divisions: (1) Forest products, (2) mining, metallurgy and ceramics, (3) aeronautical engineering, (4) chemical engineering and industrial chemistry, (5) civil engineering, (6) electrical engineering, (7) mechanical engineering, (8) physics standards and tests.

The University of Washington Oceanographic Laboratories. The University of Washington Oceanographic Laboratories are well situated for the study of many of the problems of the sea, biological, physical and chemical. In this region the marine flora and fauna are very extensive and diversified, and extreme physical and chemical conditions may be found over a relatively small area.

Research and seminars conducted by members of the staff are open to properly qualified graduate students.

LABORATORIES

The University has well-equipped laboratories for advanced work in anatomy, botany, ceramics, chemistry, civil, chemical, electrical, mechanical and mining engineering, fisheries, forestry, geology, metallurgy, pharmacy, physics, psychology and zoology.

GRADUATE FELLOWSHIPS AND SCHOLARSHIPS

See page 52.

ADMISSION

Three classes of students are recognized in the Graduate School:

1. Candidates for the master's degree.
2. Candidates for the doctor's degree.
3. Students not candidates for a degree.

Admission. A graduate of the University or of any other institution of good standing will be admitted to the Graduate School. Before being recognized as a candidate for a degree, however, a student must be approved by a committee appointed by the dean of the Graduate School, which shall also constitute the advisory committee to oversee the student's subsequent work. Unless the committee is already sufficiently acquainted with the candidate's capacity and attainments, there shall be a conference of the committee and the candidate, the purpose of which is two-fold:

(a) To determine whether the student has the quality of mind and the attitude toward advanced work which would justify his going on for an advanced degree.

(b) To satisfy the major and minor departments and the graduate council that the student has the necessary foundation in his proposed major and minor subjects. If he lacks this foundation, he will be required to establish it through undergraduate courses or supervised reading.

If the student is from a college or university which falls below a satisfactory standard in curriculum, efficiency of instruction, equipment or requirements for graduation, he may be required to take other undergraduate courses in addition to those required as a foundation in the major and minor subjects.

As, soon after matriculation as feasible, a candidate for an advanced degree must file with the dean of the Graduate School an outline of his proposed work, on a blank provided for that purpose. This blank is submitted to the advisory committee for acceptance or modification. When it has received approval and the student has been notified, he will be regarded as a candidate for a degree.

Students on the Staff. Assistants, associates, or others in the employ of the University are normally permitted to carry a maximum of six hours of graduate work if full-time employees, and a maximum of eleven hours if half-time employees.

Graduate Study in the Summer. Many departments offer graduate courses during the summer quarter, but these are addressed primarily to candidates for the master's degree. Candidates for the doctorate are in general encouraged to devote the summer to work upon the thesis.

DEGREES

THE DOCTOR'S DEGREE

Doctor of Philosophy. Graduate students will be received as candidates for the degree of doctor of philosophy in such departments as are adequately equipped to furnish the requisite training. This degree is conferred only on those who have attained proficiency in a chosen field and who have demonstrated their mastery by preparing a thesis which is a positive contribution to knowledge.

The requirements for the degree of doctor of philosophy are as follows:

1. At least three years of graduate work, of which not less than one year must be spent in residence at the University of Washington. If a candidate is otherwise engaged in any regular employment, a correspondingly longer period of study will be required. Before being recognized as a candidate for the degree, a student must be approved by a committee as provided above.

2. Completion of courses of study in a major and one or two minor subjects. This requirement as to the number of minors, however, may in exceptional cases be modified by action of the Graduate Council, making it possible for the candidate to offer more than two minors, or no minor at all. What subjects may be offered as minors shall be determined by the major department with approval of the Graduate Council. The passing grades for advanced degrees are *A* and *B*, *S* being used to indicate satisfactory work in a hyphenated course so far as the course has progressed, such work not to be counted toward a major or minor until the final examination.

These courses of study cover at least two years of work. The work of the first year is virtually identical with that for the master's degree; the work of the second year is of still more advanced character. Not earlier than the end of the second year and at least a year before the time when the student expects to take the degree, the major and minor departments, supplemented by a representative from the Graduate Council, shall submit the student to a careful oral and written examination (see *The Qualifying Examination* below).

3. The preparation of a thesis, as stated above, embodying the results of independent research. The thesis may properly be initiated in the second year, and should occupy the greater part of the third year. If the thesis is of such a character, or falls in such a department, that it requires library or laboratory facilities beyond the resources of the University, the student will be required to carry on his investigation at some other university, at some large library, or in some special laboratory. This thesis must be approved by a committee appointed by the major department of which the instructor in charge of the thesis shall be a member.

4. Examinations as follows:

The Qualifying Examination. An oral, or written, or oral and written examination, covering the general fields and the specific courses in the major and minor fields. In so far as the examination is oral, it shall be before a committee appointed by the dean of not less than three representatives of the major department, not less than one representative of each of the minor departments, and a representative of the Graduate Council. The qualifying examination will normally be taken not less than two quarters before the final examination.

The Final Examination. An oral, or oral and written examination, before the same committee as above. If the qualifying examination was in all respects satisfactory, the final examination shall be on the field of the thesis and such courses, as were taken subsequent to the qualifying examination. If the qualifying examination did not meet with the clear approval of the committee, the candidate's entire program, or such parts thereof as may have been designated by the committee, shall be subject to review.

If there is division of opinion in the committee in charge of either examination, the case shall be decided by the Graduate Council, with right of appeal to the graduate faculty.

5. Evidence of a reading knowledge of scientific French and German and of such other languages as individual departments may require. Certificates of proficiency in these languages, based upon examinations given at the University of Washington, must be filed with the dean not less than three months before the qualifying examination. Only in rare cases shall the requirement of a reading knowledge of scientific French and German be waived, and then only when, in the judgment of the council, substitutions for either or both of these languages will be to the advantage of the student's training.

6. Two copies of the thesis in typewritten form (or library hand) shall be deposited with the librarian for permanent preservation in the University archives, at least two weeks before the date on which the candidate expects to take the degree. Printed instructions for the preparation of thesis manuscripts are available at the library. One copy shall be bound at the expense of the candidate. At the same time a digest of the thesis, not to exceed 3000 words, must be filed in the office of the Graduate School.

The thesis, or such parts thereof, or such a digest as may be designated by the council, shall be printed. The candidate shall contribute \$50 to the publishing fund for theses, for which he shall receive 50 copies of his thesis if it is printed entire or 50 copies of a digest of his thesis. From this fund the library is provided with 400 copies.

7. A statement certifying that all courses and examinations have been passed and that the thesis has been accepted and properly filed in the library, shall be presented to the dean at least one week before graduation. This statement must bear the signatures of all major and minor instructors in charge of the student's work, and of the committee appointed by the major department to pass on the thesis.

THE MASTER'S DEGREE

Master of Arts. The degree of master of arts implies advanced liberal training in some humanistic field, gained through intensive study of one of the liberal arts supplemented by study in one or two supporting subjects. This detailed study culminates in a thesis which, if not an actual contribution to knowledge, is concerned with the organization and interpretation of the materials of learning. Creative work of a high quality may be offered in lieu of a thesis.

Master of Science. The degree of master of science implies training similar to the above in some province of the physical or biological sciences. The thesis for this degree, however, must be an actual contribution to knowledge.

The requirements for these degrees are as follows:

1. At least three full quarters or their equivalent spent in undivided pursuit of advanced study. If a candidate has done graduate work elsewhere, his program may be slightly less exacting, but this work must pass review in the examination, and shall not reduce the residence requirement at this University.

2. Completion of a course of study in a major and one or two minor subjects and of a thesis which lies in the major field. The work in the major and minor subjects shall total not less than 36 course hours, of which 24 are usually in the major. The thesis normally counts for 9 hours in addition to the course work and lies in the major field. The passing grades for advanced degrees are *A* and *B*, *S* being used to indicate satisfactory work in a hyphenated course so far as the course has progressed, such work not to be counted toward a major or a minor until the final examination.

The requirement of a minor or minors may be waived, but only on recommendation of the major department and with the consent of the Graduate Council.

A reading knowledge of an acceptable foreign language is required for the degrees of master of arts and master of science.

No work in the major subject may be counted toward the master's degree until the candidate has complied with the departmental requirements as to previous work in that subject.

Elementary or lower division courses may not count toward the minor requirement, and teachers' courses may not count toward either the major or minor requirements.

The preparation of a thesis, as defined above.

4. An oral, or written, or oral and written examination, given by a committee appointed by the head of the major department, including so far as feasible, all the instructors with whom the student has worked. If division of opinion exists among the examiners, the case shall be decided by the Graduate Council, with right of appeal to the Graduate Faculty.

5. The candidate's thesis shall be in charge of the instructor in whose field the subject falls, and it must be approved by a committee of the major department, of which the instructor in charge shall be a member. If the committee is divided in opinion, the case shall be decided by the Graduate Council, with right of appeal to the Graduate Faculty. At least two weeks before the date on which the candidate expects to take the degree, two copies of the thesis in typewritten form or printed form (or library hand, in case the thesis is of such a character that it cannot be typewritten) shall be deposited with the librarian for permanent preservation in the University archives. The thesis must meet the approval of the librarian as to form, printed instructions for the preparation of thesis manuscripts being available at the library. The cost of binding for one copy must be deposited with the thesis.

6. A statement certifying that all courses and examinations have been passed, and that the thesis has been accepted and properly filed in the library, shall be presented to the dean at least one week before graduation. This statement must bear the signatures of all instructors in charge of the student's work, and of the instructor in charge of the thesis.

Master of Arts and Master of Science in Technical Subjects. The degrees of master of arts and master of science are given in technical subjects as follows:

- Master of Science in Chemical Engineering.
- Master of Science in Civil Engineering.
- Master of Science in Electrical Engineering.
- Master of Science in Mechanical Engineering.
- Master of Science in Ceramic Engineering.
- Master of Science in Coal Mining Engineering.
- Master of Science in Geology and Mining.
- Master of Science in Metallurgy.
- Master of Science in Mining Engineering.
- Master of Science in Forestry.
- Master of Science in Pharmacy.
- Master of Science in Physical Education.
- Master of Science in Home Economics.
- Master of Arts in Home Economics.
- Master of Arts in Business Administration.

These degrees are designed for students who have taken the corresponding bachelor's degrees in technical subjects. In other respects, the requirements are essentially the same as those for the degrees of master of arts and master of science. (See departmental write-ups.)

Master's Degree in Technical Subjects. The master's degree is given in technical subjects as follows:

- Master of Forestry.
- Master of Business Administration.
- Master of Laws.
- Master of Fine Arts.
- Master of Education.
- Master of Music.

The requirements for these degrees are essentially the same as those for the degrees of master of arts and master of science, with the exception that all the work is in the major. (See departmental write-ups.)

All candidates for advanced degrees must attend the Commencement exercises to receive their degrees in person, unless excused by formal petition to the Graduate Council.

COURSES OF STUDY

For a description of courses, see Departments of Instruction section.

SCHOOL OF JOURNALISM

THE SCHOOL AND ITS EQUIPMENT

The first courses in journalism in the University of Washington were given in 1907. A department of journalism was established in 1909. In March, 1918, the department was formally made a school.

The professional courses in the School of Journalism and those prescribed in the Colleges of Liberal Arts and Science are planned with two aims in view—to offer instruction and practice in the fundamentals of newspaper work in both the business and editorial sides, and to provide such studies as are best adapted to give the broad training necessary for successful pursuit of journalism as a profession. In the first, the courses include reporting, copy reading, editorial writing, magazine features and fiction, advertising, trade journalism, the mechanics of printing and publishing, and the practical work of the business and administrative offices. In the second are history, economics, political science, sociology, philosophy, psychology, language, literature, and similar subjects necessary in developing the broad scholarship indispensable in modern journalism.

This double ideal of the School of Journalism curriculum has justified itself in the steady demands of Pacific coast and national editors for University graduates.

Equipment. Journalism and printing are located on the first floor of Commerce Hall. On this floor are the class rooms, the journalism library and reading room, the faculty offices, the University Press, and all the mechanical equipment for teaching practical journalism. The University Press does virtually all the campus printing.

Frederick A. Churchill Junior Memorial Library. In March, 1918, a separate journalism library and reading room was opened, known as the Frederick A. Churchill Junior Memorial Library, in memory of a brilliant student of the school who died in 1916 while engaged in newspaper work in New York. The Memorial Library contains carefully selected books and periodicals, relating to printing, advertising, current events, short story, feature writing and all phases of the editorial side of the newspaper.

Student Publications. The editorial and business offices of *The University of Washington Daily*, *Columns*, and *Tyee* are on the first floor of Commerce Hall. Ownership of these publications is vested in the Associated Students of the University of Washington. All are supervised by the School of Journalism, the staff members of each being recruited mainly from the school. All offer opportunities for practical experience in magazine and newspaper work. Places on the editorial and business staffs of each, awarded for the most part on a basis of literary and executive ability, are open to all students in the School of Journalism. Opportunity for wide experience in reporting, copy reading, editorial writing, and advertising is offered in the various departments of these publications.

Journalistic Clubs. Local chapters of three national organizations are maintained by students in the School of Journalism. Junior and senior men have a chapter of Sigma Delta Chi, one of the two national journalistic professional fraternities. Junior and senior women maintain a chapter of Theta Sigma Phi, national journalistic professional sorority founded at the University of Washington in 1910. Members of *The Columns* staff have a chapter of Hammer and Coffin, the national comic-magazine fraternity. Students specializing in advertising have also chapters of Alpha Delta Sigma, national advertising fraternity for men, and Gamma Alpha Chi, for women.

Opportunity for Self-Help. During normal years a considerable percentage of the men in the School of Journalism have earned their way wholly or in part. The dean of the school has occasional calls from editors, pub-

lishers and managers of printing plants for students with some experience to do part-time work in advertising, publicity, reporting and circulation work. Local newspapers and some of the dailies in neighboring cities from time to time maintain special reporters and correspondents at the University. Remuneration for the various kinds of work ranges up to \$50 or even \$75 a month, according to the service given.

Admission. Students entering the School of Journalism by way of the College of Liberal Arts must complete 90 scholastic credits, including the lower division requirements of the college, plus the required six quarters in military or naval science or physical education. Students not having upper division standing may be admitted, on recommendation of the dean, to courses in the School of Journalism if they (1) are proficient in English composition and typing, (2) have had sound training in history, economics, politics, and sociology, and (3) have had not less than a year's experience in newspaper work or other professional writing. No other lower division students are allowed to enroll in upper division journalism courses. Credit toward graduation is not granted for newspaper work except when such work is done under the direct supervision of an accredited instructor.

Change of College from Liberal Arts to Journalism. Students who have completed 90 credits of lower division work, including all the lower division requirements of the College of Liberal Arts, plus the required six quarters of military or naval science or physical education, may be admitted to the School of Journalism. Application for entrance to the School of Journalism must be made at the registrar's office, where the necessary change of college blank is obtained. A student must have filed with the registrar, at this time, a card certifying that the pre-transfer conference (see paragraph below) with the dean of the School of Journalism has been held. It is suggested that as soon as a student has the necessary status he change to the School of Journalism.

Conference on Application for Entrance to the School of Journalism. Students applying for entrance to the School of Journalism must make arrangements for a conference with the dean of the School of Journalism. This should normally take place when the student is entering his junior year. No student will be considered admitted to the School of Journalism until this conference has been held. At this conference the student will meet with the dean of the School of Journalism and another member or members of the staff with whom he has had a major portion of his lower division journalism work. The purpose of this conference is to discuss the aptitude of the student, not only for a major in journalism, but for following the specialized courses in journalism which he may decide to elect.

Following the conference, a card stating that the student has successfully completed his junior conference will be filed with the registrar. This card must be in the hands of the registrar before the student can transfer to the School of Journalism.

Fees. For information on general University fees and expenses, applicable to all students, see page 45.

Pre-Journalism Majors. The dean of the School of Journalism is the adviser for all students in journalism from the beginning of the freshman year. To him should be taken questions about co-ordinating courses in other schools and any matters touching scholastic problems.

Journalism Curriculum. From the beginning of the freshman year a specific curriculum of studies (see page 124) is required of students expecting to major in journalism. Courses in the profession of journalism, the newspaper and society, elements of publishing, news writing, current events and the smaller newspaper are open to lower division students. Entrance to the School of Journalism is granted on ability shown by the individual in

these courses to do newspaper work successfully. A minimum of 90 credits, plus the required six quarters of military or naval science or physical education, including all lower division requirements in liberal arts, must be earned before entrance.

Major in Journalism in the School of Education. See page 87).

Minor in Journalism. Students wishing to minor in journalism must include the following courses in their minor: Jour. 51, News Writing, five credits; 101, Reporting, five credits; 120, Copy Reading, three credits; and 150, Editorial Writing, three credits. A total of 20 credits is required for a minor.

Typewriting. All written work in the School of Journalism must be done on a typewriter. Students who have not had one semester of typing in high school must present credentials from a business college showing they are capable of making an average speed of 45 words per minute on the typewriter.

Graduation. The curriculum of the School of Journalism leads to the degree of bachelor of arts in journalism, for which 180 credits must be obtained, plus six quarters in physical training or military or naval science. Forty of these credits, exclusive of five credits of prescribed freshman pre-journalism, must be in journalism. An average class grade of B or better must be earned in all journalism subjects. At the discretion of the journalism faculty, any student not maintaining this grade may be dropped from the school. A student holding a bachelor's degree from a recognized college or university may obtain a degree in journalism by fulfilling the additional requirements. Usually the time demanded is not less than four quarters.

Students transferring to the University of Washington with less than 90 quarter credits will be held rigidly to the requirements specified in the journalism curriculum. Students transferring with 90 or more quarter credits (that is, upper division standing) may be exempted from certain requirements—other than those specified by the University for the degree in liberal arts—on application to, and at the discretion of the dean of journalism.

Graduate Study. Advanced courses in journalism, history, economics, political science, sociology, and English are offered students wishing to take graduate study in preparation for newspaper work or teaching journalism. A wide demand exists in high schools, colleges, and universities for instructors adequately trained to teach journalism. The University library contains a large collection of bound newspapers and magazines and furnishes unusual opportunity for a historical study of American journalism. Special provision is made for directing the work of graduate students interested in historical, political, psychological, or language studies in journalism. The Churchill Memorial Library is particularly adapted for graduate research in journalism. The courses required are determined by the nature and amount of undergraduate work the candidate has done in journalism and the phase of it in which he wishes to specialize, such as advertising, the business office, trade journalism, or the purely editorial field. A thesis constitutes one of the requirements. On completion of the requisite number of credits, the degree of master of arts, with a minor in journalism, is granted by the University.

Specialisation. Students looking forward to specialized branches of journalistic work, such as trade or class journalism, advertising, or the business office, will find the School of Journalism particularly well equipped to aid them. While emphasis is laid on the editorial side of the newspaper field, provision is made in the curriculum for practical training in other departments as well. In general, however, students are advised to obtain as thorough a comprehension of the fundamentals of newspaper work and as broad a general education as possible rather than to attempt specialization in a limited field.

CURRICULUM

Requirements for the degree of bachelor of arts in journalism are scheduled below. The University requirements of military or naval science and physical education must be met in addition to those noted below. A student seeking a degree of bachelor of arts in journalism is required to take five credits of specified pre-journalism; 40 credits of additional journalism; 35 credits of English; and 20 credits in one of the fields of sociology, political science, psychology, history or economics. By special arrangement with the heads of the departments concerned, a student may elect his "secondary minor" in a field other than these five above specified. If a student so desires he will find it possible to elect more than one "secondary minor," although only one is required.

FIRST AND SECOND YEARS

For description of the lower division requirements of the College of Liberal Arts which pre-journalism students must fulfill during the first two years, see page 133.

In addition to the lower division liberal arts requirements, the following courses are required, or are suggested electives, for freshman and sophomore pre-journalism students. *Courses marked with a double dagger (‡) are required. Courses marked with a single dagger (†) are either requirements or suggested electives, depending upon the minor chosen.*

By studying "Fields of Secondary Study" a student may ascertain whether the subjects marked with a single dagger (†) are, for him, required or elective.

FIRST YEAR

	Credits		Credits
Econ. 1. †Gen. Econ.....	5	Jour. 2. †The Newspaper and Society..	1
Econ. 2. †Gen. Econ.....	5	Jour. 3. ‡Elements of Publishing.....	3
Lit. 64,65,66. Lit. Backgrounds.....	13	Lib. Arts 1. Intro. to Mod. Thought..	5
Lit. 60. Intro. to Shakespeare.....	5	Lib. Arts 11. Intro. to Fine Arts.....	5
Hist. 5-6. Eng. Pol. and Soc. Hist....	10	Pol. Sci. 1. †Comparative Govt.....	5
Jour. 1. †Jour. as a Profession.....	1	Soc. 1. †Intro. to Sociology.....	5

SECOND YEAR

	Credits		Credits
Econ. 54. †Business Law.....	3	Jour. 51. †News Writing.....	5
Econ. 55,56. Business Law.....	6	Jour. 61. The Smaller Newspaper....	3
Speech 38. ‡Argument. and Debate..	5	Jour. 90,91,92. Current Events.....	3
Speech 40. ‡Essentials of Speaking...	5	Music 4,5,6. Music, Lit. and Hist....	9
Speech 41. Advanced Speaking.....	3	Psych. 1. †Gen. Psych.....	5
Lit. 97,98,99. The Bible as Lit.....	6	Soc. 55. Human Ecology.....	5
Foreign Language	10	Soc. 63. Community Organization....	3
Hist. 71-72-73. Ancient Hist.....	9	Soc. 66. Group Behavior.....	5

ADDITIONAL REQUIREMENTS

JOURNALISM

Forty credits of journalism will be required of majors in journalism, plus five credits of pre-journalism required in the freshman year.

Journalism requirements are:

FIRST YEAR

	Credits
Jour. 1. Journalism as a Profession.....	1
Jour. 2. The Newspaper and Society.....	1
Jour. 3. Elements of Publishing.....	3
None of these to be counted in the 40 credits of journalism required for graduation.	

² Five credits in either Speech 38 or 40 are required of pre-journalism students.

SECOND YEAR

Jour. 51. News Writing 5

THIRD YEAR

Jour. 101. Reporting 5
 Jour. 120. Copy Reading 3
 Jour. 140. Problems of Publishing 5

FOURTH YEAR

Jour. 152. Specialized Reporting and Advanced News Writing..... 5
 Total (5 credits pre-journalism, plus 23 credits journalism).....28

In addition to the above requirements, a student must have a minimum of 17 credits of journalism electives.

ENGLISH

A student graduating from the School of Journalism must have a total of 35 credits of English, of which 23 credits, as outlined below, are required.

FIRST YEAR

Composition 1. Composition..... Credits
 5

SECOND YEAR

Speech 38 or 40. Argumentation or Essen. of Speaking..... 5

THIRD YEAR

Literature 64,65,66. Literary Backgrounds.....13
 Total credits.....23

The balance of the 35 required credits in English—twelve credits—may be selected from the following:

Credits	Credits
Speech 41. Adv. Speaking..... 3	Lit. 161,162. American Lit.....10
Lit. 97,98,99. The Bible as Lit..... 6	Lit. 164,165,166. Amer. Lit. Since
Lit. 104,105,106. Contemporary Lit.. 9	1870..... 9

SECONDARY FIELD

Besides his liberal arts, English, and journalism requirements a student must select at least one field of secondary study from among the following: sociology, psychology, political science, history or economics. A student may, if he so desires, select more than one secondary field, although only one is required.

SOCIOLOGY

Credits	Credits
Soc. 1. Introduction..... 5	Soc. 130 and 131. Social Invest. and Soc. Statistics.....10
Soc. 55. Human Ecology 5	Soc. 155. Social Legislation 5
Soc. 63. Community Organization .. 3	Soc. 156. Criminology 5
Soc. 66. Group Behavior 5	

Psych. 117, Superstition and Belief, Soc. 201, Public Opinion, and Jour. 201, Propaganda, two credits each, may be included either under sociology or psychology. Jour. 201 will be counted towards the 40 journalism credits required for graduation if it is not used to count as a minor in psychology or sociology.

Twenty credits of sociology will be required of those who select this field in which to do their secondary specialization, of which five credits, Soc. 1, are specified. The balance of the 20 credits—15 credits—is to be selected from the foregoing specified courses, or from other sociology courses only by special arrangement with the heads of the two departments concerned.

PSYCHOLOGY

<i>Credits</i>		<i>Credits</i>	
Psych. 1. †General Psychology	5	Psych. 111. †History of Psych.....	2
Psych. 108. Essentials of Mental Meas.....	5	Psych. 121. Applied Psychology	5
Psych. 109. Mental Tests	5	Psych. 124. Psych. of Learning.....	5
		Psych. 126. Abnormal Psych.	5

Twenty credits of psychology will be required of those who elect this field in which to do their secondary specialization, of which seven credits, Psych. 1 and Psych. 111, are specified. The balance of the 20 credits—13 credits—is to be selected from the foregoing specified courses, or from other psychology courses only by special arrangement with the heads of the two departments concerned.

POLITICAL SCIENCE

<i>Credits</i>		<i>Credits</i>	
Pol. Sci. 1. †Comparative Govt.....	5	Pol. Sci. †121. †For. Rel. of U.S.....	3
Pol. Sci. 61. Municipal Govt.....	5	Pol. Sci. †122. †Admin. of Am. For. Affairs.....	3
Pol. Sci. 111. Hist. of Pol. Theory...	3	Pol. Sci. 152. †Political Parties.....	5
Pol. Sci. 112. American Pol. Theory..	3	Pol. Sci. 162. Municipal Admin.....	5
Pol. Sci. 113. Contemp. Pol. Thought.	3		

Twenty credits of political science will be required of those who select this field in which to do their secondary specialization, of which 13 credits—Pol. Sci. 1, Pol. Sci. 152, and either Pol. Sci. 121 or 122—are specified. The balance of the 20 credits—seven credits—is to be selected from the foregoing specified courses, or from other political science courses only by special arrangement with the heads of the two departments concerned.

HISTORY

<i>Credits</i>		<i>Credits</i>	
Hist. 130. Europe, 1814-1870.....	5	Hist. 149. U.S. National Develop....	5
Hist. 131. †Europe Since 1870.....	5	Hist. 153. †The Pacific Rim.....	3
Hist. 148. U.S. Reconstruction.....	3	Hist. 163-164-165. Northwestern Hist..	6

In addition to the lower division liberal arts history requirement, 20 credits of history will be required of those who select this field in which to do their secondary specialization, of which eight credits, Hist. 131 and Hist. 153, are specified. The balance of the 20 credits—12 credits—is to be selected from the foregoing specified courses, or from other history courses only by special arrangement with the heads of the two departments concerned.

ECONOMICS

<i>Credits</i>		<i>Credits</i>	
Econ. 1. †General Economics.....	5	Econ. 139. Problems in Advertising..	5
Econ. 2. †General Economics.....	5	Econ. 160. Adv. Econ.....	5
Econ. 54. †Business Law.....	3	Econ. 168. Dev. of Econ. Thought....	5
Econ. 55, 56. Business Law.....	6	Econ. 173. International Comm. Pols.	3
Econ. 106. Econ. of Mktg. & Adv....	5	Econ. 175. The Business Cycle.....	3
Econ. 136. Advertising	5	Econ. 181. Econ. of Consumption.....	5

Twenty credits of economics will be required of those who select this field in which to do their secondary specialization, of which 13 credits, Econ. 1, Econ. 2 and Econ. 54, are specified. The balance of the 20 credits—seven credits—is to be selected from the foregoing specified courses, or from other

³ Of Pol. Sci. 121, 122, only one course is required.

economics courses, only by special arrangement with the heads of the two departments concerned.

Advertising. Students expecting to make advertising a profession should elect these courses: P.S.&D. 9, 10, 11, Art Structure; Econ. 106, Economics of Marketing and Advertising; Econ. 136, Advertising; Econ. 139, Problems in Advertising; Jour. 130, Fundamentals of Advertising; Jour. 131, Display Advertising; Jour. 133, Advertising Typography; Jour. 135, Publicity. These will be found of special value in advertising work.

Short Story Writing. Students interested particularly in short story writing should select as many as possible of the following courses, the first four in the order named: Jour. 51, News Writing; Jour. 101, Reporting; Jour. 171-172, Magazine Writing; Jour. 173, 174-175, Short Story Writing; Drama 51, 52, 53, Elementary Acting; Drama 111, 112, 113, Play Writing; Psych. 1, General Psychology; Psych. 118, Folk Psychology; Psych. 126, Abnormal Psychology; Psych. 131, Child Psychology; Jour. 225, 226, 227, Advanced Short Story.

COURSES OF STUDY

For a description of courses, offered by the School of Journalism, see Departments of Instruction section.

SCHOOL OF LAW

ORGANIZATION AND EQUIPMENT

General Statement. The School of Law was established in 1899. It is a member of the Association of American Law Schools, which was organized in 1900 to set and maintain high standards of legal education, and which comprises the leading law schools of the country, membership being dependent on maintaining the standards set by the association. The School of Law is approved by the Council on Legal Education and Admission to the Bar of the American Bar Association.

The object of the School of Law is to provide a thorough training in the law and to prepare students for practice in any state or jurisdiction where the Anglo-American legal system prevails. Particular attention is given to the statutes, the special doctrines of law, and the rules of practice that obtain in the State of Washington. Instruction is given by use of the case system. This method of teaching law, which has been approved by experience and which is now employed in the leading law schools of the country, has the threefold merit of enabling the student to acquire a thorough and practical knowledge of legal principles, to develop the power of independent legal reasoning, and to become familiar with those processes of legal thinking which have determined the form and character of our jurisprudence and which will govern its future development. The faculty is composed of ten resident professional law teachers who devote their entire time and energy to teaching. The courses in practice are taught by men experienced in practice at the Washington bar. In addition, lectures on special topics are given by distinguished lawyers and judges selected primarily from the bar of the State of Washington.

The Law Building. The School of Law at present occupies the upper floor of Commerce Hall. A new building, designed exclusively for Law School use, will be ready for occupancy during the academic year 1932-1933.

The Library. The University law library contains 58,382 volumes (February, 1932), including the decisions of all English and American courts of last resort, and the reported decisions of all lower courts. Extensive runs of the English, American, and colonial statutes are available, and all legal periodicals published in the English language are received.

State and United States Courts. The School of Law is located within a few minutes' ride of both the federal and state courts sitting in Seattle. The United States District Court is in session and trying cases almost constantly, and the United States Circuit Court of Appeals for the Ninth Circuit holds a session in Seattle each autumn. The superior court for King county with thirteen departments, the justice courts, the municipal police court and the juvenile court are in session in Seattle throughout the school year, and enable the student to witness the trial of actual cases. The Supreme Court of the State of Washington is situated within comparatively easy reach at Olympia and affords the student casual opportunity of hearing the argument of state appeals.

GENERAL INFORMATION

Quarter System. The quarter system prevails in the School of Law. Each quarter is approximately 12 weeks in length. Credit is given usually on the basis of one credit representing a recitation or lecture one hour a week per quarter. The total hour values of courses prevailing in the schools of the Association of American Law Schools have been generally retained—*e.g.*, courses formerly given two hours a week per semester are given three hours a week per quarter under the quarter system.

Admission to the Bar. The University of Washington School of Law is by law the standard of approved law schools for admission to the bar of this state. Admission to the Washington Bar, however, is conditioned upon passing a state bar examination.

Professional Standard of Minimum Training. The following resolution was adopted by the American Bar Association, September 1, 1921. It was approved by a national conference of state and local bar associations, February 24, 1922.

"(1) The American Bar Association is of the opinion that every candidate for admission to the bar should give evidence of graduation from a law school complying with the following standards:

"(a) It shall require as a condition of admission at least two years of study in a college.

"(b) It shall require its students to pursue a course of three years' duration if they devote substantially all of their working time to their studies, and a longer course, equivalent in the number of working hours, if they devote only a part of their working time to their studies.

"(c) It shall provide an adequate library available for the use of the students.

"(d) It shall have among its teachers a sufficient number giving their entire time to the school to insure actual personal acquaintance and influence with the whole student body.

"The Council on Legal Education and Admission to the Bar is directed to publish from time to time the names of those law schools which comply with the above standards and of those which do not and to make such publications available so far as possible to intending law students."

As stated, the University of Washington Law School is approved by the council.

Fees. For detailed information concerning general fees and expenses, see page 45.

ADMISSION

Regular Students. Admission to the School of Law is on a selective basis. In passing upon applications for admission, the following factors are taken into account: amount of pre-legal work, scholarship in pre-legal work, special aptitude and fitness as evidenced by legal aptitude examination and personal interview with the dean of the Law School. Students contemplating entering the School of Law should file application blanks, copies of which may be obtained from the dean's office.

Students transferring from other colleges and law schools should settle the question of their admission in advance. In all cases, complete transcripts of college and law work should be sent to the dean's office.

The following are the minimum requirements for admission:

Candidates for the degree of juris doctor must have received the bachelor of arts degree or its equivalent from this university or an approved college.

Candidates for the bachelor's degree in arts, science, or business administration, and the bachelor of law degree under the combined curricula must have completed three years of college work, including the group requirements of the college concerned, and must, in addition, have maintained a scholarship average of 2.25 grade points over their entire college work.

Candidates for the bachelor of law degree only, who enter the Law School prior to the autumn quarter of 1934, must have completed two years of college work, representing one-half of the work acceptable for a bachelor's degree, granted on the basis of a four-year period of study, in this university or an approved college and, in addition, must have a scholarship average of 2.25 grade points over the two years of college work.

Beginning with the autumn quarter of 1934, a minimum of three years' college work (135 quarter credits), together with a scholarship average of 2.25 grade points, will be required.

Special Students. No person will be admitted as a special student in law unless he is 23 years of age and his general education is such as to entitle him to admission to the first year class in the University of Washington. Special students are admitted only in exceptional cases upon vote of the faculty and never in excess of ten per cent of the Law School registration.

A special student may become a candidate for a degree by complying with all the entrance requirements set forth in reference to regular students.

DEGREES AND REQUIREMENTS FOR GRADUATION

Two degrees are given by this law school, J.D. (juris doctor) and LL.B. (bachelor of law).

The juris doctor degree will be conferred upon students who, prior to entering the Law School, have received the bachelor of arts degree, or its equivalent, from this institution or some other approved college and who, thereafter, complete the three years' professional law course (125 credits), including the prescribed courses of the first year and such advanced courses in law as the faculty may prescribe, and who, in addition, maintain a scholastic average of 3 grade points (B) over their entire law work.

The bachelor of law degree will be conferred on students who meet the requirements for admission to the School of Law and who, thereafter, complete 125 credits in professional law subjects, including the required first year courses, and who maintain over their entire law record a scholarship average of 2.25 grade points.

Combined Curricula in Arts, Science, Business Administration and Law. It is possible for students to obtain the bachelor's degree in arts, science, or business administration, and the bachelor's degree in law in six years. To do this, the student must first complete, with a grade point average of 2.25, the three years' work in the college chosen, a total of 139 credits, including the group requirements of that college. (For details of these requirements, see the sections of the College of Liberal Arts, Science, or Business Administration). The student will then be admitted to the School of Law and upon completion of the prescribed first year's work in law (41 credits) will be granted the college degree. Upon completing the remaining two years of professional law work, with the required scholarship average, he will be granted the bachelor of law degree.

Residence Requirement. The candidate for graduation must spend nine quarters or their equivalent (three college years) in residence at a law school which is a member of the Association of American Law Schools. The three quarters immediately preceding the conferring of the law degree must be spent in residence at the University of Washington Law School.

Advanced Standing. If, in addition to satisfying the entrance requirements for regular standing in the Law School, the student has earned credits in another law school by regular attendance for at least one academic year of not less than eight months, he will ordinarily receive credit for such work, subject to the following restriction: The work must equal in amount and character that required by this Law School. Not more than two years'

credit will be allowed for such work. (No advanced credit for law work done elsewhere will be allowed except in accordance with the regulations of the Association of American Law Schools.) The right is reserved to refuse credit in law in whole or in part, save upon examination, and credit once given may be withdrawn for poor work in this school. Candidates for admission with advanced standing should forward a transcript of their record in both pre-legal and law work. No credit is given for time spent in private reading or for study in a law office.

SUMMER SCHOOL

General Statement. Courses are offered each summer as a part of the regular instruction of the Law School. This work carries the same credit and counts toward a degree the same as the work of any other quarter. Ordinarily, only second and third year courses are offered. For a detailed program, see the announcement of the summer session. By taking advantage of the summer work, students may shorten the period required for the law degree.

MISCELLANEOUS INFORMATION

Washington Law Review. The *Washington Law Review* is a legal publication issued quarterly during the year under the direction of the law faculty with the assistance of a student board of 12 to 15 members chosen from the ablest students in the Law School. The *Review* serves as a medium of expression for the legal scholars of Washington and elsewhere and is devoted particularly to the interpretation, advancement, and harmonious development of the law. The *Review* contains scholarly articles by judges and lawyers and discussions of important recent court decisions by students in the Law School, based on thorough research. A place on the student editorial board is one of the goals of every earnest law student and the experience is invaluable to him in his later professional life.

The Order of the Coif. The Order of the Coif is a national honorary legal society with a chapter at this Law School. The order has for its purpose the encouragement of scholarship and the advancement of the ethical standards of the legal profession. Membership in the order is dependent entirely upon the attainment of high scholastic standing. Each chapter annually elects from the senior law class a number of persons, not exceeding ten per cent of the class, ranking highest in scholarship, with the proviso that any person whose character unfits him for membership in the order may be rejected.

The Carkeek Prize. Mr. Vivian M. Carkeek of Seattle offers an annual cash prize of \$50 for the best student contribution to *The Washington Law Review* by a member of the senior class on a point of Washington law, or any point of peculiar interest to Washington attorneys.

The Jaggard Prize. Miss Anna Wright Jaggard, daughter of the late Edwin Ames Jaggard, LL.D., justice of the supreme court of Minnesota, offers an annual cash prize of \$50 for the best thesis submitted by members of the senior class, candidates for the degree of bachelor of law, on a subject in the courses of history of the law or jurisprudence.

Instruction in Other Departments. Law students may elect studies, for which they are prepared, in other departments of the University without charge, provided, that such election does not interfere with their law studies. Before registering in other departments, the student must obtain written permission from the dean of the Law School.

INQUIRIES

General Statement. Further particulars as to any phase of the work of the Law School not given herein, or in the general information section, will be cheerfully given upon request. Communications addressed at any time to the Dean of the Law School, University of Washington, Seattle, Washington, will receive prompt attention.

COURSES OF STUDY

For a description of courses offered by the Law School, see Departments of Instruction section.

COLLEGE OF LIBERAL ARTS

GENERAL STATEMENT

The College of Liberal Arts comprises the lower division, which is normally the work of the first two years, and the upper division for majors in one of the departments of the college. The lower division offers a broad cultural training based on the balanced study of the humanities, social science, and natural science. Under humanities are classified courses in Latin, Greek, German, French, Spanish, Italian, Scandinavian, Japanese, Chinese, Russian, English composition, literature, public speaking, drama, liberal arts, philosophy, and literature or language courses in Oriental Studies. Social sciences include anthropology, economics, history, political science, sociology, and the social and historical courses in Oriental Studies. Under natural science are classified astronomy, botany, chemistry, geology, geography, home economics, mathematics, physics, psychology, and zoology. By agreement the courses in natural science are offered by the College of Science for Liberal Arts students. Students preparing to enter the Schools of Law, Journalism, Education and Library Science naturally receive their preliminary training in the College of Liberal Arts. Thus with the co-operation of the College of Science, the lower division of the college aids several important groups of students: (1) to pursue a broad cultural training during two years or more as an objective in itself; (2) to prepare for advanced studies in humanities, social science, mathematics, psychology, or home economics; (3) to take advantage of this fundamental training to aid in their choice of a vocation. Such students may proceed from the lower division of the College of Liberal Arts to other professional and vocational schools of the University provided that their electives have been chosen to facilitate such a transfer.

REQUIREMENTS FOR ADMISSION

Correspondence. Credentials and all correspondence relating to admission to any college or school of the University should be addressed to the registrar, University of Washington. For detailed information concerning admission, registration, and general University fees and expenses, applicable to all students, is contained in the General Information section pages 35, 43, 45.

ENTRANCE REQUIREMENTS

1. *Secondary School Preparation.* It is a decided advantage for a student to plan his high school work so as to enter the College of Liberal Arts with requirements satisfied and with a maximum of exemption. The requirements include graduation from an accredited high school with twelve *units of work done entirely in the tenth, eleventh and twelfth grades. Of the twelve units, not more than four may be in courses primarily designed for ninth grade students. The twelve units may be distributed as follows:

- (a) Not more than four units in non-academic subjects.
- (b) At least eight units from the academic groups (English, mathematics, natural science with laboratory, social science including history, foreign language). Less than one unit will not be counted in physics, chemistry, or a foreign language.
- (c) Specific requirements are two units of English, a second unit of one foreign language, one unit of geometry, and one unit of physics or chemistry. Until October, 1934, this one unit of physics or chemistry is recommended, but not required.

RECOMMENDED SENIOR HIGH SCHOOL CURRICULUM

The high school student who has accepted credits in accordance with the following schedule will enter the University with requirements satisfied and with a maximum of exemption.

UNITS

NATURE OF RECOMMENDATION

- 2 **ENGLISH.** Composition and Literature. If a student has sufficient ability to organize English composition and to avoid the mistakes in grammar, punctuation, and spelling, known as the Minimum Essentials in English Composition, his requirement in English composition may be reduced, or he may be exempted entirely from this requirement at the University. If a student is unable to pass the Preliminary Freshman English Test on the above essentials and on theme writing, he will be required to take composition without credit until he is qualified for university courses.
- 2 **HISTORY.** Two units of history are required in the high school or in the University. One of these units may be studied in the ninth grade and one unit must be American history which may be combined with civics. Students who did not have civics in the high school must earn credit for Political Science 1 in the University. As a knowledge of the development of civilization, especially as it applies to our complex modern life, is essential to a cultured and intellectual attitude, it is strongly recommended that in the high school or in the University a student have courses in ancient, mediaeval, and modern civilizations.
- 1 **PHYSICS or CHEMISTRY (with laboratory).** After October, 1934, one unit of physics or chemistry is definitely required. Until that date students having one unit of a physical science in the high school and one unit of a biological science will be exempted from further science requirement in the University. It is however, deemed advisable that some science be studied at the University.
- 1 **PLANE GEOMETRY.**
- 3 **FOREIGN LANGUAGE.** A second unit of Latin, Greek, French, German, Spanish, Scandinavian or Italian is required for entrance into the College of Liberal Arts. If a student presents for entrance two units of a foreign language other than these, he must take in college at least twenty hours of some one of the seven languages named, but will receive college credit therefor. To complete the language requirements of the lower division, a student must pass the reading knowledge test in a language taught in the University. Students in the following classifications are exempted from this test: (1) Majors or minors in a foreign language; (2) those having three years of one language in the high school and/or the University; (3) those having two years each of two foreign languages in the high school and/or the University. Units in language begun in the eighth or ninth grades may be used to satisfy the above exemptions.
- 3 **ELECTIVE SUBJECTS.** These electives may be any courses accepted for graduation in the student's high school. It is definitely recommended that these elective units to complete the required twelve units be selected from English, mathematics, social science including history, laboratory science, and foreign language. Ability to use a typewriter is also definitely recommended.

Transfer Students. It is highly desirable that students entering the College of Liberal Arts from another institution should obtain from the registrar as soon as possible, a statement of their requirements for the bachelor's degree. Otherwise, by failing to fulfill the requirements, they will find their graduation postponed for a quarter or more, despite the fact that they may have earned credits sufficient in number to entitle them to the degree.

LOWER DIVISION

Planning Schedules in Lower Division. As a rule students in the lower division must confine their election to courses numbered 1 to 99 in the catalogue. If a student has had the proper prerequisite or is deemed qualified in intellectual maturity he may register for an upper division course with the consent of the dean and instructor concerned. If a student avails himself of this privilege he should be careful not to allow it to interfere with the completion of all the requirements of the first two years.

To complete the work of the lower division a student must earn at least 90 scholastic credits and satisfy the following requirements:

I. *Specific Requirements.*

1. Composition 1 and 2—10 credits. Exemption to the amount of 5 credits in composition will be added to the requirement in humanities presented below.
2. Psychology 1—5 credits.
3. Philosophy 1, 2, 3, or 5—5 credits.
4. Completion of foreign language requirement as explained above.
5. Completion of history requirement as explained above.
6. Military or Naval Science or Physical Education—6 quarters non-scholastic credit.

II. *Group Requirements.* Not more than 10 credits in one subject may be used to satisfy the requirements of any of the following groups.

1. Humanities—10 credits. (15 credits if exempted from Composition.) English, foreign literature in translation, language not used to satisfy above requirements, philosophy, Oriental studies, liberal arts, ancient life and literature, appreciation courses in art: music, painting, architecture.
2. Social Science—15 credits. History, political science, economics, sociology, anthropology.
3. Natural Science—15 credits. Mathematics, physics, chemistry, botany, zoology, geology, geography, astronomy, home economics.

III. *Elective*—30 credits.

UPPER DIVISION

A student is said to be enrolled in the upper division of the College of Liberal Arts when he has completed the requirements of the lower division and has been accepted as a major by one of the departments of the college authorized to offer a major.

UPPER DIVISION REQUIREMENTS

- (a) 30 upper division credits in the major or in work approved by the adviser as a part of the major although this work may be offered in other departments. No major student may count toward graduation more than 45 upper division credits in his major.
- (b) 30 upper division credits divided so as to present 15 credits each in two subjects approved by the adviser as related to the major or as representing a definite educational program.
- (c) 30 hours of elective.

Major Subjects. The following are the departments from which a candidate for the B.A. degree must select his major:

Anthropology	Greek	Philosophy
Drama	History	Political Science
Economics	Home Economics	Psychology
English Literature	Italian	Public Speaking
French	Latin	Scandinavian
General Literature	Mathematics	Sociology
German	Oriental Studies	Spanish

Major Credits Required. From 36 to 60 credits must be earned in a single department known as the major department but, for a major in English literature, drama, or public speaking, 10 credits in Composition 1-2 may be counted in addition to 60 credits in other English courses. In order that the pre-major and the major studies may be carefully planned, students should consult with the adviser of his chosen major preferably during the freshman year or as soon thereafter as he is able to decide on his principal specialization. The adviser for pre-law students is the Dean of the College of Liberal Arts. For suggestions to students intending to enter the Schools of Education, Journalism, Law, or Library Science, see pages 138, 141 and 142.

Economics Majors. Liberal arts students majoring in economics must take courses 1, 2, 103, 105, 124, 160, and 168 and at least 15 additional credits from the following list:

	Credits		Credits
B.A. 100. Econ. & Ind. Dev. of U.S.	5	B.A. 129. Taxation	5
B.A. 103. Money and Banking	5	B.A. 131. Econ. of Pub. Utilities . . .	5
B.A. 104. Econ. of Transportation . . .	5	B.A. 140. The Co-operative Movement	5
B.A. 106. Econ. of Mktg. & Adv. . . .	5	B.A. 145. World Trade	5
B.A. 108. Econ. of Insurance	5	B.A. 161. Econ. of Labor	5
B.A. 109. Econ. of Real Estate	5	B.A. 162. European Labor Problems.	5
B.A. 121. Corporation Finance	5	B.A. 173. Int'l. Com'l. Policies	5
B.A. 122. Principles of Investment . .	5	B.A. 175. The Business Cycle	5
B.A. 125. Adv. Money and Banking . .	5	B.A. 181. Econ. of Consumption	5

Other courses offered in the summer quarter shall be accepted on an economics major only upon the approval of the dean of the College of Business Administration.

Scheme of Electives. For the purpose of election, outside the major department, the College of Liberal Arts, the College of Science, the School of Education, the College of Business Administration, and the School of Journalism are treated as one. A total of 36 credits in courses given outside these colleges may be counted toward a bachelor of arts degree. Of these 36 not more than 24 may be taken in any one college or school, except that from the College of Fine Arts 36 credits may be counted.

SCHEDULE LIMITATIONS

Dean's Signature. No student shall be registered for more than 16 credits a quarter (exclusive of military or naval science and physical education), or for less than 12 credits a quarter except with the written consent of the dean.

Outside Work. In addition to a load of 16 plus the required military or naval science or physical education credits a student may carry a maximum of eight hours per week outside work without special permission. But if he carries more than eight hours of outside work, he must have the dean's signature for excess credits, each three hours of outside work counting the same as one credit. A student who is obliged to do outside work must enter on his registration blank a statement of the nature of the work and the number of hours per week so used. In considering petitions for reinstatement the Board

of Deans shall take no cognizance of outside work if it has not been noted on the student's registration blank.

Excess Credits Based on Grades. No entering freshman may carry excess credits. Other students, when applying to the dean for this privilege, must bring their grade books. Requests will be granted only under the following conditions:

17 credits, when grades average B, with no grade below C

18 credits, when grades are straight B—or better

19 credits, when all grades are A

Seniors who have made *exceptionally* good records may in rare cases be allowed to carry 20 credits.

High School Deficiencies. Deficiencies which are being made up in high school shall count on the student's schedule as five credits per half unit.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

Total Credits. To obtain the degree of bachelor of arts (B.A.) the student must complete not less than 180 credits plus the required six quarters of military or naval science or physical education, must observe the restrictions in regard to major and group requirements, scholarship requirements, and the requirements of the lower and upper divisions and must show a reading knowledge of one of the foreign languages taught in the University. Detailed information is given above. Students wishing to take this test must sign up for it in the dean's office not later than a date set at least three weeks from the end of the quarter. This requirement does not apply to graduates of the six-year arts and law curriculum, nor to students planning to graduate under the catalogue of 1922-23 or under earlier catalogues.

Graduation Option; Catalogues. All students shall have the option of being held to the entrance and graduation requirements of the catalogue under which they enter, or those of the catalogue under which they expect to graduate. All responsibility for fulfilling the requirements for graduation from the various schools and colleges of the University shall rest with the student concerned.

All Courses Must Be Completed. A student who registers for an elective course must ultimately complete the course, unless relieved of the necessity by his dean. A student properly withdrawn and given a W shall not be affected by this rule. A grade of W can be given only in case of regular withdrawal while in good standing.

Residence Work. A minimum of three full quarters of residence in the senior year, with completion of 36 credits, is required for any degree granted by the University. Senior standing is attained when 135 credits plus the required work in military or naval science or physical education have been completed.

Grades. Not less than three-fourths of the credits required for graduation must be earned with grades of A, B, or C.

Grades Cannot Be Changed. Except in cases of clerical error, no instructor shall be allowed to change a grade which has once been turned in to the registrar.

Failures. Grade E is final and a student receiving a grade of E in a course can obtain credit for that course only by re-registering for it and repeating it.

GENERAL REGULATIONS

Examinations. Examinations shall be held at the close of each quarter in all courses at the last scheduled class-hour of the quarter, and also at the next preceding class hour, if desired; except in laboratory courses, when the last laboratory period may be used as a substitute or in addition. A student desiring to be absent from his scheduled examinations must before leaving college, present to the instructors concerned permission from his dean to be absent. The postponed examination may be taken under the following conditions:

1. The student shall pay a fee of \$1 at the comptroller's office and get a receipt for same;
2. The student shall present this receipt to the registrar, who shall issue a card entitling the student to the examination;
3. The student shall present this card to the instructor concerned and shall take the delayed examination at a time approved by the instructor.

No instructor need give more than one special examination in any one subject in any quarter.

Advanced Credit by Examination. With the approval of the dean of the college or school concerned, a student may be examined for advanced credit in work that he has not followed in a college class in an accredited institution. Credits and grades so obtained must be certified by the examiner and the dean concerned. In no case shall the addition of these credits result in a total for any quarter above the number of credits for which the student involved would have been allowed to enroll in regular courses.

Persons who, while registered in the University, have attended courses as auditors, shall in no case be permitted to take the examination in such courses or obtain credit therefor.

A student desiring to take an examination for advanced credit must first file an application and obtain a permit at the registrar's office.

Special claims for advanced credit based on credentials are passed on by a committee consisting of the registrar and the dean of the college concerned.

Advanced credit by course examination may not cover more than half of the requirement for graduation. At least one-half of the student's work for a degree must be under the supervision of this or some other accredited university. Work under supervision here includes residence class work, extension class work and home study work.

Hyphenated Courses. In these courses the examination on the work of the first quarter is provisional, final credit not being given until the examination for the entire course has been passed. Except in rare cases, the completion of the work of an earlier division of hyphenated courses is prerequisite to the later sections. In the Courses of Study courses are indicated by course numbers connected by hyphens.

PRE-JOURNALISM CURRICULUM

Admission. Students entering the School of Journalism by way of the College of Liberal Arts must complete 90 scholastic credits, including the lower division requirements of the College of Liberal Arts, together with the required credits in military or naval science or physical education.

Adviser. From the beginning of the freshman year, the adviser for pre-journalism students is the dean of the School of Journalism, or such persons as he may designate.

Requirements. The courses with a double dagger listed below are those required of pre-journalism students during the first two years. Those marked

with a single dagger are regarded as essential. Others are suggested electives. By consulting the section of the School of Journalism pre-journalism students will be able more definitely to co-ordinate their courses and to assure themselves that those elected comply with the requirements of these secondary fields: English, and one to be selected from the following: sociology, political science, economics, history, psychology.

FIRST YEAR

Credits		Credits	
Comp. 1. †Composition.....	5	Jour. 2. †The Newspaper and Society. 1	
Econ. 1. †Gen. Econ.....	5	Jour. 3. †Elements of Publishing.....	3
Econ. 2. †Gen. Econ.....	5	Lib. Arts. 1. Intro. to Mod. Thought..	5
Lit. 64,65,66. Lit. Backgrounds.....	13	Lib. Arts 11. Intro. to Fine Arts.....	5
Lit. 60. Intro. to Shakespeare.....	5	Pol. Sci. 1. †Comparative Govt.....	5
Hist. 5-6. Eng. Pol. and Soc. Hist.....	10	Soc. 1. †Intro. to Sociology.....	5
Jour. 1. †Jour. as a Profession.....	1		

SECOND YEAR

Credits		Credits	
Econ. 54. †Business Law.....	3	Jour. 51. †News Writing.....	5
Econ. 55,56. Business Law.....	6	Jour. 61. The Smaller Newspaper....	3
Speech 38. †Argument and Debate..	5	Jour. 90,91,92. Current Events.....	3
Speech 40. †Essentials of Speaking...	5	Music 4,5,6. Music Lit. and Hist.....	9
Speech 41. Advanced Speaking.....	3	Psych. 1. †Gen. Psych.....	5
Lit. 97,98,99. The Bible as Lit.....	6	Soc. 55. Human Ecology.....	5
Foreign Language	10	Soc. 63. Community Organization....	3
Hist. 71-72-73. Ancient Hist.....	9	Soc. 66. Group Behavior.....	5

PRE-LAW COURSE—TWO-YEAR COURSE

NOTE: Beginning with the academic year 1934 all students entering the Law School will be required to have completed three years' work (135 credits) toward the college degree.

Admission. To be admitted from the College of Liberal Arts to regular standing in the Law School students who are candidates for the LL.B. degree only, must have earned 90 credits and have completed the requirements of the lower division prescribed for the College of Liberal Arts on page 135.

Transfer Students. Students who transfer from other institutions with advanced standing, but who have had less than two full years of liberal arts credit in their respective institutions, and who are not entitled to 90 liberal arts credits in accordance with the credit computation system of this University, nor have completed the requirements of the lower division of the College of Liberal Arts of this University, or their equivalent, must satisfy all of the local requirements before they will be admitted to the Law School. Students who transfer from other institutions with advanced standing, and who have had at least two full years of liberal arts credit in their respective institutions and are entitled to 90 liberal arts credits, more or less, in accordance with the credit computation system of this University, but who have not completed the requirements of the lower division of the College of Liberal Arts of this University, or their equivalent, may be held to earn such additional liberal arts credits as the dean of the Law School may impose as a condition for entrance to, or graduation from, the Law School. The object of this provision is, with proper regard for comity between institutions of higher learning, to bring about a fair and reasonable leveling between the preliminary training offered by students from this University and that offered by students from other institutions.

¹ Although the English composition requirement for Liberal Arts students is Composition 1 and 2, ten credits, pre-journalism students satisfy the requirements by taking Composition 1, five credits.

² Five credits in either Speech 38 or 40 are required of pre-journalism students.

Required Courses. It is of first importance that in general the required courses, when available, should be those first registered for. By this means a student will more easily avoid conflicts which, later on, may preclude him from completing the required courses in his two- or three-year pre-law curriculum.

English Recommendation. Pre-law students are urged to take additional courses in English, especially advanced composition and public speaking courses, to fit them for the correct writing and speaking of English, which is increasingly demanded of the legal profession.

Removal of Deficiencies for Entrance. As the Law School curriculum contemplates that the student can begin his work in the Law School advantageously only in the summer or autumn quarter, it is essential that where there are only a few deficiencies, they be removed if possible through the Extension Service or during the summer quarter preceding the beginning of the law work in the autumn quarter. Otherwise, the student will be delayed a year before the beginning of his law work.

Electives. The requirements of the lower division will not make a total of 90 credits. In choosing electives, the student is advised not to specialize in any particular subject or group, but rather to take one or two courses in each or several of the various groups. For a broad general training the following are recommended:

Anthropology 51	Sociology 1
Astronomy 1	Speech 38, 40
Liberal Arts 1, 11	Comp. 51, 52, 53
Latin 1-2, 3, 4, 5, 6	Comp. 54, 55, 56
B.A. 1, 2	Lit. 64, 65, 66
B.A. 65	Lit. 73, 75
Political Science 1	History 107
Political Science 118	
Political Science 119, 120	

PRE-LAW CURRICULUM—THREE-YEAR COURSE

Combined Six-Year Arts-Law Course. It is possible to obtain the degrees of bachelor of arts and bachelor of laws in six years. The requirements and suggestions for the first two years of this combined six-year course are the same as for the two-year pre-law course, with the additions hereafter stated. To have the benefit of this combined course, students must, in the first three years, earn 139 liberal arts credits, together with the required credits in military or naval science or physical education. To take the 139 credits in three years the student should carry an average of 16 credits each for four quarters during the junior and sophomore years, exclusive of military or naval science or physical education. As the Law School can be entered advantageously only at the beginning of the autumn quarter, the entire 139 credits should be completed within the customary three years, with work during an intervening summer quarter. At the beginning of the fourth year, if a student has earned 139 credits with an average of 2.25 grade points, and the required credits in military or naval science, or physical education, he may enter the School of Law, and there earn 41 credits which will be counted toward his bachelor of arts degree. He will be granted the bachelor of arts degree at the end of the fourth year, or as soon as he completes the required work above specified and 41 credits in the School of Law, with an average of 2.25 grade points. The degree of bachelor of laws will be conferred upon completion of his work in the Law School.

In exceptional cases where the student lacks a small number of the 139 liberal arts or science credits, the dean of the Law School may, upon written

petition, permit registration in the Law School, the necessary credits to satisfy the combined degrees to be completed subsequently.

Transfer Law Students. Students from other institutions entering this University with advanced standing may take advantage of this combined six-year course, provided they are registered in the College of Liberal Arts for at least one full year of work, and earn at least 45 credits in the University before entering the School of Law. This privilege will not be extended to normal school graduates attempting to graduate in two years, nor to undergraduates of other colleges who enter this University with the rank of senior.

This combined arts-law course, in lieu of a major, requires 70 upper division credits in place of the 60 credits required of students offering a major. As the 41 credits of law, counted towards the B.A. degree are upper division courses, it follows that at least 29 of the 139 credits referred to above must also be in upper division courses. These 29 credits must be so grouped that they can be approved by the dean of Liberal Arts as constituting, with the law courses, a satisfactory substitute for the major usually required for the B.A. degree.

PRE-LIBRARY CURRICULUM

Admission. Admission to the general course in library science is granted as follows:

1. To graduate students who hold the baccalaureate degree from any college or university of good standing, whose undergraduate work in either or both high school and college has included at least 20 college credits each in German and French. Other modern languages may be substituted with the consent of the dean, provided that the Romanic and Germanic groups are represented.

2. To students who have qualified for senior standing in the College of Liberal Arts or in the elective curricula in the College of Science, having earned 145 credits, including 20 college credits each in German and French, and the required credits in military or naval science or physical education, and including all required work.

Initial admission to classes in the Library School is permitted only at the beginning of the college year in October except by special permission of the dean of the Library School. No one may be admitted to any course in the Library School curriculum except as an auditor, unless he is expecting to complete the entire curriculum.

3. In the autumn quarter of 1933 and thereafter, only college graduates will be admitted. Such graduates must present 20 credits each in French and German and must have made an average grade of B in their undergraduate work.

Students planning to begin their professional training in library science after October, 1933, should consult the Library School adviser in regard to selection of a major and should have their programs approved by him.

Adviser. From the beginning of the freshman year, the adviser for pre-library students is the dean of the Library School, or such persons, as he may designate.

Scholarship. In preparing for the Library School a student must maintain an average of B, as a strong foundation is essential for successful library service. Students not making an average of B in the library science courses may at the discretion of the faculty of the Library School be dropped from the Library School.

Requirements. A suggested curriculum for pre-library students is given below, the courses are arranged in the order in which they should normally follow each other. Those with a double dagger are required; those with a single dagger are strongly recommended; others are suggested electives.

FIRST YEAR

	Credits		Credits
Comp. ¶1-2. Composition.....	10	*Science, Bot., Geol., or Zool.....	10
Speech 40. Essentials of Speaking....	5	Music 4,5,6. Hist. and Appr.....	9
Lit. 60. Intro. to Shakespeare.....	5	*Mod. Lang. ¶1-2-3. French or German	15
Lit. 64,65,66. Lit. Backgrounds.....	13	Psych. ¶1. General.....	5
*Hist. 1-2. Medieval and Modern.....	10	Lib. Arts. ¶1. Intro. to Mod. Thought	5
Hist. 5-6. Eng. Pol. and Social.....	10	Arch. 3. Appreciation.....	2
		*Latin ¶11,13. Rom. Civ. and Lit....	10
		Mil. or Naval Sci. or Phys. Educ....	5

SECOND YEAR

*Mod. Lang. ¶Fourth Qr. of Foreign Language previously taken.....	5	Zool. 17. Eugenics.....	2
Begin other Lang. Required by Lib. School	10	*Pol. Sci. ¶1. Comparative Govt.....	5
*Hist. ¶57-58-59. United States.....	9	*Soc. ¶1. Introduction.....	5
O.S. 26. Hist. of China.....	5	Soc. 62. Play and Leisure Time.....	3
O.S. 27. Hist. of Japan.....	5	*Econ. ¶1. Introduction.....	5
*Greek ¶15-16. Civilization.....	10	Econ. 7. Econ. Geography.....	5
Anthrop. 51. Gen. Intro. to Anthropol.	5	Lib. Arts. ¶11. Intro. to Fine Arts....	5
Zool. 16. Evolution.....	2	Mil. or Naval Sci. or Phys. Educ....	5

THIRD YEAR

*Mod. Lang. Complete Lib. School Requirement	10	Lit. ¶164,165,166. Am. Lit. Since 1870	9
Phil. ¶1,2 or 3. Introduction.....	5	Lit. 174,175. Late 19th Cent. Lit.....	10
Hist. 129. French Rev. and Nap. Era. .	5	*Science. Phys. 1-2 or Chem. 1-2.....	10
Hist. 130. Europe 1814-1870	5	German ¶106,108. Germ. Lit. in Trans.	5
Hist. 131. Europe Since 1870	5	French ¶118,119,120. Surv. of Fr. Lit.	9
Pol. Sci. 122. Foreign Affairs.....	3	Ital. ¶181,182,184. Ital. Lit. in Trans.	6
O.S. 114,115,116. Hist. of Religion... .	9	Scand. Lit. 109,110,111. Mod. Auth. .	3
O.S. 120. Prob. of East. Asia.....	5	Scand. Lit. ¶180,181,182. Recent Lit.	6
Lit. ¶153. English Lit.....	5	Lib. Sci. 151,152,153. Books and Their Authors	15

Graduation. The degree of bachelor of science in library science (B.S. in L.S.) is granted upon satisfactory completion of 45 credits in the Library School.

PRE-EDUCATION CURRICULUM

Admission. Pre-education students must fulfill all the lower division requirements of the College of Liberal Arts, (see page 135) and it is urged that those requirements be worked off as soon as possible.

Adviser. From the beginning of the freshman year, the adviser for pre-education students is the dean of the School of Education, or such persons as he may designate. The needs of public high school teachers may be roughly classified into the following four groups. The first two of these groups the purposeful student may confidently begin to meet in the freshman and sophomore years by supplementing the liberal arts requirements. The third and fourth groups are in the main open to juniors and seniors only.

¹ This requirement may be satisfied by the first course in each of two of these (economics, sociology or political science), or the first course in any one of them together with five credits in another course for which the one taken first is a prerequisite.

² These requirements may be satisfied in high school or in college.

³ The Library School requires 20 credits each of two modern foreign languages, French and German, in either high school or college.

⁴ Students who have taken, or plan to take three or more years of ancient language may omit this requirement. Classical language requirement may be satisfied by either Latin or Greek.

1. *General Preparation.* High school teachers should have a broad acquaintance with those liberalizing studies that give (1) knowledge of, and (2) appreciated insight into the nature, evolution, achievements, and problems of civilization, and especially with regard to their own society. Both the highest usefulness of the teacher and his satisfaction in his work are affected heavily by the breadth and the quality of his general education.

Breadth of education, however, is still compatible with an early intentional focusing which will give to scholarship a certain weight of close relevancy to the peculiar responsibilities of the teacher. Within the limits set by the academic organization of the departments and colleges, which in a university must attempt both to make scholars and to contribute to the special ends of professional schools, it is still possible for the prospective teacher to make choice of courses which will enhance his pleasure in this work and his value to his students. Among the courses now open to freshmen and sophomores, the following are suggested as having large potential bearing on the making of a teacher.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Pol. Sci. 1. Comp. Govt. 5		Hist. 6. Eng. Pol. & Soc. 5		Psych. 1. General..... 5	
Hist. 5. Eng. Pol. & Soc. 5		Lit. 65. Lit. Backgrds.. 5		Zool. 17. Eugenics..... 2	
Lit. 64. Lit. Backgrds.. 5		L.A. 1. Intro. Mod		Geol. 7. Hist. Geol..... 5	
Zool. 16. Evolution.... 2		Thought..... 5		Speech 40. Essen of Spk. 5	
		Geol. 1. Intro..... 5			
		Soc. 1. Intro..... 5			

SECOND YEAR

Hist. 57. U.S..... 3	Hist. 58. U.S..... 3	Hist. 59. U.S..... 3
	Anthro. 51. Intro..... 5	Edu. 60. Second. Edu... 3
	Phil. 2. Soc. Ethics.... 5	Pol. Sci. 53. Prob. Dem. 3
		or
		Phil. 3. Intro. Ethics... 5

2. *Preparation in Teaching Subjects.* The teacher must have the firm grasp of the subjects in which he is to give instruction that will insure him an easy mind and set him free to study the difficulties met by beginners in his field of knowledge. Beyond this it is desirable for him to have courses that will set his subject in its social or cultural context, showing in general how this field has grown and what its development has meant to civilization; and whenever possible to sample the more closely related fields.

The rounding out of a teacher's education usually has to be left to graduate study, however. In the beginning each prospective teacher should prepare to give instruction in at least two subjects. It is difficult to give sound preparation for more; and results are better when these two subjects re-enforce each other; as physics and chemistry, English and Latin, Latin and French or Spanish, history and political science or sociology.

However, the demands of superintendents are often not determined with reference to recognized principles of the professional education of teachers, so much as by the exigencies of a chance need in their own system. Hence they may call for such combinations as home economics and English; manual training and physical education; mathematics and Latin; physical education and history; chemistry, physics and biology.

In general, however, such combinations as mathematics and physical sciences, English and history, physical science and biology, home economics and general science, Latin and French or Spanish, Latin and English, English and history, art and music seem to be the most feasible.

Last year there seemed to be an oversupply in history and in the social sciences, an undersupply in commercial branches, and a general shortage of teachers who could combine with some firmly established subject some form of extra-curricular activity, such as coaching, for example.

Finally, "a poor or displeasing, or unattractive personality" is about as common a difficulty as "insufficient special scholarship." Teachers must be in the group of human beings who are better than average in personality.

3. *Professional Preparation.* The courses offered in the School of Education are intended to give the prospective teacher the training which he will need in professional subjects.

The specific requirements for the normal diploma, which is a requirement for all high school teachers in the State of Washington, and to which all students in any college are eligible are: Edu. 60 or 62 (open to sophomores who have earned 65 credits), Edu. 9, 90, 70, 71, 75 and 120.

Course 70 should be taken during the junior year. This course is prerequisite to Edu. 71 (Cadet Teaching) which should be planned for the senior year. The School of Education bulletin should be consulted for complete details concerning requirements for the normal diploma and for the proper arrangement of education courses to meet those requirements adequately.

4. *Supplementary Professional Preparation.* Here fall courses offered chiefly in the School of Education and the department of psychology, but supplemented, usefully at points, by courses available in the departments of bacteriology, sociology, zoology, and home economics.

COURSES OF STUDY

For description of courses see Department of Instruction section.

LIBRARY SCHOOL

GENERAL STATEMENT

The Library School offers professional education in librarianship.

Being an educational institution, a library should not be entrusted to persons of merely elementary acquirements. Its conduct requires a larger and more comprehensive educational equipment and outlook than can be had with less than that signified by the bachelor's degree.

The technical curriculum extends through three quarters—short in comparison with the academic curriculum, because the general educational equipment of the librarian is of larger significance than the technical education, but neither is sufficient without the other.

Graduates of the school are competent to take charge of a small public library or to take an assistant's place in any department of the larger libraries. After a reasonable experience in either of these positions, they have shown themselves competent to conduct libraries of medium size with excellent success.

Initial admission to classes in the Library School is permitted only at the beginning of the college year in October except by special permission of the dean of the Library School. Except as an auditor, no one may be admitted to any course in the Library School curriculum unless he is expecting to complete the entire curriculum.

Students desiring to enter the Library School must present an average grade of B in their undergraduate work, except in cases where successful library service has proved the student's ability to do library work.

ADMISSION

Admission to the general course in library science is granted as follows:

1. To graduate students who hold the baccalaureate degree from any college or university of good standing, and whose undergraduate work in either or both high school and college has included at least 20 college credits each in German and French. Other modern languages may be substituted with the consent of the dean, provided the Romanic group and the Germanic group are represented.

2. To students who have qualified for senior standing in the College of Liberal Arts or in the elective curricula in the College of Science, having earned 135 academic credits, including 20 college credits each in German and French, and six quarters in military or naval science, or physical education, and including all required work.

3. In the autumn quarter of 1933 and thereafter, only college graduates will be admitted. Such graduates must present 20 credits each in French and German and must have made an average grade of B in their undergraduate work.

Admission to the advanced course in library work with children, is granted as follows:

To graduates of the University of Washington Library School, or schools of equal standard. The number admitted will be limited, so credentials must be taken up at an early date with the dean of the Library School.

EXPENSES

For detailed information concerning University fees and expenses, see page 45.

Loan Fund. By joint action of the Puget Sound Library Club and the Alumni Association of the Library School, a library school student loan fund has been established, known as the University of Washington Library School Loan Fund. This fund is available to students in the Library School who

have been in attendance for at least a quarter and have made a satisfactory record. Its purpose is largely to meet emergency needs of the students, rather than to pay expenses through the year. It is administered by a committee of three, of which the dean of the school is chairman. Applications to borrow from the fund should be made to him. The fund has been raised by voluntary contributions from the members of the club and the alumni, and is open to contribution at any time.

DEGREES

On completion of the curriculum in library science (45 credits), either as a fourth year (or major) following three years in the College of Liberal Arts or the College of Science, or a fifth (or graduate) year, the degree of bachelor of science in library science is granted.

Upon completion of the advanced course in library work with children, a certificate in library work with children is granted.

ADVISORY SUGGESTIONS

In preparing for the Library School, a student must maintain an average of B, as a strong foundation is essential for successful library service. Students not making an average of B in library science courses may at the discretion of the faculty of the Library School be dropped from the Library School.

The student entering the school should be a typist of accuracy and fair speed.

Practical service in a library prior to entering the Library School is extremely advantageous to the student. We advise (and shall later probably require) that each student shall have had before entering the school at least one month's actual experience in a well conducted library.

As no one with serious physical defects or ill health can readily secure a position in library service, such persons should not ask admission to the school.

Persons beyond 30 years of age are advised not to enter the school unless they have already had experience in library service.

Students desiring to prepare for children's librarianship are asked to take Soc. 57, Child Welfare, and Psych. 131, Child Psychology.

Education majors may qualify for their five-year normal diploma and take their bachelor of science in library science in the fifth year. See page 79 under "Teaching majors and minors for normal and life diplomas," or consult with the deans of the School of Education and the Library School.

The dean of the Library School is the adviser for all pre-library students, and electives are to be chosen only with his approval.

Students planning to begin their professional training in library science after October, 1933, should consult the Library School adviser in regard to selection of a major and should have their programs approved by him.

CURRICULA

I. GENERAL COURSE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
170. Children's Work . . . 3		184. Classif. & Cat. . . 3		178. Hist. of Books	
172. Intro. to Library		185. Reference . . . 3-2		and Libraries.. 3	
Work 2		188. Bks. for libraries 2		196. Books for Libs. 3	
175. Classif. & Cat. . . . 4		^o 183. Select. of books		^o 180. Story Telling . . 3	
177. Reference 3		for children. 3		^o 181. Adv. Chil. Work 2	
179. Books for Libs. . . 4		^o 189. Admin. of small		^o 182. School Adminis. . 2	
		libraries 2		^o 190. Selection of Bks.	
		186. Practice 5		for Children. . . . 3	
				^o 191. Classif. & Cat. . . 3	
				^o 192. Administration . . 2	
				^o 193. Govt. Docs. 2	
				^o 194. Bibliog. Subject	
				& Trade. 2	
				^o 195. Book Selection	
				for Schools. 3	

II. LIBRARY WORK WITH CHILDREN

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
201. Children's Lit. . . . 2		202. Children's Lit. . . . 2		203. Children's Lit. . . . 2	
204. Adm. of Children's		205. Adm. of Children's		206. Adm. of Children's	
Libraries. 1		Libraries. 1		Libraries. 1	
207. Story Telling 2		208. Story Telling 2		209. Story Telling 2	
210. School Work 1		211. School Work 1		212. School Work 1	
213. Field Work 7		214. Field Work 7		215. Field Work 7	
[*] Psych. 131. Child. Psy. 5		[*] Soc. 57. Child Welfare 3		^{**} Education 3	

COURSES OF STUDY

For the work of the lower division and for courses in departments other than library science, the sections of the catalogue relating to the Colleges of Liberal Arts and Science, and the Departments of Instruction should be consulted.

^o Electives.

^{*} Consult instructor.

^{*} Consult dean of the Library School.

^{*} May be taken in preparation.

COLLEGE OF MINES

SCOPE AND FACILITIES

Degrees. The College of Mines offers specialized training in mining engineering, metallurgy, and ceramics. The four-year curricula lead to degrees as follows:

- I. Bachelor of science in mining and metallurgy (B.S. in Min. and Met.)
- II. Bachelor of science in mining and geology (B.S. in Min. and Geol.)
- III. Bachelor of science in ceramic engineering (B.S. in Cer. E.)

The degree of engineer of mines (E.M.) is given to graduates in mining engineering who have practised their profession for at least three years and who present a satisfactory thesis. Graduates in metallurgy may receive the degree of metallurgical engineer (Met.E.) under similar conditions, and the appropriate advanced degrees are also open to graduates of other curricula.

Mining and Metallurgical Industries Available for Study. Mining machinery of many kinds is in operation within easy reach of the University. It is also kept in stock at the Seattle branches of the eastern machinery firms, for distribution throughout the Pacific Northwest, British Columbia, and Alaska. Methods important to the mining engineer are illustrated in Seattle by the operations of steam shovels and hydraulic giants. Engineers in charge of plants have given the mining students every opportunity to become familiar with the methods of planning and carrying on work; and the same statement applies to the mine operators throughout the state.

Other available works of interest include coal mines, washeries, briquet plants, and coke ovens, with the largest production west of the Rocky mountain region; gold, silver, copper, arsenic and mercury mines and treatment plants; cement plants, stone quarries, and dressing works; clay mines, and works producing brick, building and roof tile, terra cotta, sewer pipe and drain tile, fire brick, pottery, and decorated mantel tile; sand and gravel pits making large production by modern methods; the Tacoma smelter and refineries; the U.S. Assay Office; the Northwest Lead works; the Seattle steel plant of the Pacific Coast Steel Corporation, numerous foundries, and plants engaged in electro-metallurgical work.

Laboratories. Complete equipment for carrying on laboratory instruction, technical investigations and tests, is available. For description of laboratories, see College of Mines bulletin printed as a separate bulletin.

MINING, METALLURGICAL, AND CERAMIC RESEARCH

The purpose of this department is to encourage development in the mining, metallurgical, and ceramic industries of Washington, the Pacific Northwest and Alaska by research in the special problems presented, and to solve the problems through the efforts of fellowship holders and others studying in the department.

Graduates from suitable technical courses at institutions of recognized standing, or men who present evidence of technical training which has fitted them to undertake investigations, are eligible to enroll in mining and metallurgical research. The degree of master of science may be granted students holding suitable bachelor of science degrees who complete investigative work in compliance with the University requirements for the master's degree. Although as much latitude as possible will be allowed in the choice of subjects for research, the general topics will be those of special importance to this region.

Investigations of Problems. Under certain conditions, the University will permit mining, metallurgical and ceramic companies who have special problems for solution, to detail a representative to work on such problems, or to meet the expense of engaging a man to do so. Experiments which can be carried on as readily in commercial laboratories and which do not require direction from the college's experts are not undertaken. The research is done under the direction of the department, and complete records of all the data obtained are filed with the department, which reserves the right to publish this information for the benefit of the mining, metallurgical and ceramic industries.

MINES LOAN FUND

A loan fund, the nucleus of which was created by the North Pacific Section of the Women's Auxiliary of the American Institute of Mining and Metallurgical Engineers, is available to assist upperclass students. Requests for financial assistance should be made to the dean of the college.

MINING INSTITUTE

Each winter, soon after the Christmas holidays, a Mining Institute is held for the benefit of prospectors, miners, metallurgists, mining investors, men engaged in the clay and cement industries, and all others interested. The instructors in the department of mining, metallurgy, and ceramics demonstrate the extensive equipment in Mines Laboratory and perform tests of special interest to those enrolled in the Institute. Other members of the faculty of the College of Mines give lectures in their particular fields of work, and prominent mining engineers and operators give special talks on work in which they are engaged. In the evenings lantern slides and moving pictures of the mining industry are shown. The course begins on a Monday morning and continues throughout the entire week. It is open to all persons and no fees are charged.

Announcement of the opening date is made in the local papers and in the technical press. It is not necessary to enroll in advance, but better preparation can be made if those who expect to attend will indicate their intention by phone or by letter to the College of Mines a few days before the date set for opening.

At the session held in January, 1932, the registered attendance numbered 200. The next session of the Institute will open at 9 a.m. on Monday morning, January 16, 1933.

MINES SOCIETY

The Mines Society, affiliated with the American Institute of Mining and Metallurgical Engineers, has a membership composed of all students in the College. At the weekly meetings of the society addresses are made by prominent mining engineers, and papers descriptive of their summer work are presented by the student members.

UNITED STATES BUREAU OF MINES NORTHWEST EXPERIMENT STATION

The Department of Commerce maintains at the College of Mines its Northwest Experiment Station, which serves the Pacific Northwest and the coast regions of Alaska.

Mine Safety Station. The Mine Safety Station of the United States Bureau of Mines is housed in a separate building located near Mines Labora-

tory. Various types of oxygen rescue and resuscitation apparatus are kept on hand for practice as well as for use in mine rescue work. The purposes of the station are to give emergency aid in cases of fire or explosions at mines or elsewhere, and also to train miners, firemen, and mining students in the use of oxygen helmets and other forms of rescue apparatus. From ten days to two weeks' time is required for the course of training.

The applicant is taught the construction of the apparatus and is required to wear it for four hours each day, in two periods of two hours each. The practice is carried on in a room filled with gas which cannot be breathed without immediate discomfort, and the work performed is the same as that which would be required in actual mining operations or rescue work. The smokeroom represents a portion of a mine, and is equipped with mine car-track, overcast, timbers and brick. First-aid instruction is also given. Applicants who have completed the course of training receive a certificate from the United States Bureau of Mines.

A one-ton, 45-horsepower automobile truck, equipped with rescue apparatus ready for emergency calls, forms part of the equipment of the safety station.

REQUIREMENTS FOR ADMISSION

Correspondence. Credentials and all correspondence relating to admission to any college or school of the University should be addressed to the registrar, University of Washington. For detailed information concerning admission, registration, and general University fees and expenses applicable to all students, see pages 35, 43, 45.

SPECIAL REQUIREMENTS FOR THE COLLEGE OF MINES

Specific requirements of the College of Mines must be met by students expecting to enter the college. These are as follows:

Plane Geometry	1 unit
Advanced algebra	$\frac{1}{2}$ unit
Solid geometry	$\frac{1}{2}$ unit
Physics	1 unit

A student is advised not to attempt to enter the University until he is able to register in his chosen college without deficiencies. Under certain circumstances and with the approval of the dean of the college concerned, however, certain deficiencies in specific college requirements may be removed after entrance in the University.

CURRICULA OF THE COLLEGE OF MINES

For the Freshman and Sophomore Years in All Options

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Math. 51. Trig.....	4	Math. 52. College Alg..	4	Math. 53. Anal. Geom..	4
G.E. 1. Engr. Draw....	3	G.E. 2. Engr. Draw....	3	G.E. 3. Draft. Prob....	3
G.E. 11. Engr. Prob....	3	G.E. 12. Engr. Prob....	3	G.E. 21. Plane Surv....	3
Chem. 1 or 21. General.	5	Chem. 2 or 22. General.	5	Chem. 23. Qual. Anal..	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

SECOND YEAR

Min. 51. Elem. of Min. 3	Min. 52. Methods..... 3	Met. 53. Elem. of Met. 3
Geol. 5. Rocks & Min... 5	Met. 153. Wet Assaying. 3	Cer. 90. Cer. Materials. 3
Math. 61. Calc..... 3	Math. 62. Calc..... 3	Geol. 121. Mineralogy. 5
Physics 97. Engineers. 5	Physics 98. Engineers.. 5	Physics 99. Engineers.. 5
Military or Naval Sci.	Military or Naval Sci.	Military or Naval Sci.
or Phys. Edu.....+	or Phys. Edu.....+	or Phys. Edu.....+

Mining or geology or metallurgy or ceramics practice in summer vacation.

MINING AND METALLURGY (OPTION I)

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Min. 101. Milling.....	3	Met. 103. Fuels.....	4	Min. 106. Mine Excur.	1
Met. 101. Fire Assaying.	3	E.E. 101-102. Dir. Cur.	6	Met. 102. Met. Lab....	2
Met. 104. Non-Ferrous.	3	Geol. 124. Petrography.	3	E.E. 121-122. Alt. Cur..	6
C.E. 131. Mechanics....	3	C.E. 132. Mechanics....	3	Comp. 100. Composition.	3
Geol. 123. Optical Min.	3			Elective	3

Mining or metallurgical practice in summer vacation.

FOURTH YEAR

Min. 151. Min. Engr....	3	Min. 103. Mine Res. Tr.	1	Min. 107. Mine Excur.	1
Min. 191. Thesis.....	2	Min. 162. Costs.....	4	Min. 152. Ore Dress....	5
Met. 155. Iron & Steel.	3	Min. 192. Thesis.....	2	Min. 182. Min. Ind.Mgt.	3
Met. 162. Phys. Met....	3	Met. 163. Metallog....	3	Min. 193. Thesis.....	1
Elective	4	Elective	4	Elective	4

MINING AND GEOLOGY (OPTION II)

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Min. 101. Milling.....	3	Met. 103. Fuels.....	4	Min. 106. Mine Excur..	1
Met. 101. Fire Assaying.	3	Geol. 106. Physiog....	5	Met. 102. Met. Lab....	2
Met. 104. Non-Ferrous.	3	Geol. 124. Petrography.	3	Geol. 107. Hist. Geol...	5
Geol. 123. Optical Min.	3	C.E. 132. Mechanics....	3	Geol. 125. Petrology...	3
C.E. 131. Mechanics....	3			Comp. 100. Composition.	3
				Elective	2

Mining or geology practice in summer vacation.

FOURTH YEAR

Min. 151. Min. Engr....	3	Min. 103. Mine Res. Tr.	1	Min. 107. Mine Excur.	1
Min. 191. Thesis.....	2	Min. 162. Costs.....	4	Min. 152. Ore Dress....	5
Met. 162. Phys. Met....	3	Min. 192. Thesis.....	2	Min. 182. Min. Ind.Mgt.	3
Elective	6	Geol. 127. Econ. Geol.		Min. 193. Thesis.....	1
		Met.....	5	Elective	4
		Elective	3		

CERAMIC ENGINEERING (OPTION III)

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Min. 101. Milling.....	3	Met. 103. Fuels.....	4	Min. 106. Mine Excur.	1
Cer. 100. Plas., Susp.		Cer. 101. Firing.....	3	Met. 102. Met. Lab....	2
& Drying	3	Cer. 105. Calc. for Dry.		Cer. 102. Cer. Des....	3
Cer. 104. Calc. for		& Firing	3	Cer. 110. Cer. Meas....	3
Bodies & Glazes... 3		C.E. 132. Mechanics....	3	Comp. 100. Composition.	3
C.E. 131. Mechanics....	3	Elective	3	Elective	3
Geol. 123. Optical Min..	3				

Ceramics practice in summer vacation.

FOURTH YEAR

Min. 191. Thesis.....	3	Min. 103. Mine Res.Tr.	1	Min. 107. Mine Excur.	1
Met. 162. Phys. Met....	3	Min. 192. Thesis.....	3	Min. 193. Thesis.....	2
Cer. 121. Cer.Prod.Lab.	5	Cer. 122. Cer.Prod.Lab.	5	Cer. 123. Cer.Prod.Lab.	5
Chem. 181. Phys.&Theor.	3	Chem. 182. Phys.&Theor.	3	Elective	6
		Elective	3		

Suggested electives for students especially interested in

Mining Engineering: C.E. 53, Min 171, M.E. 81, 82, 83.
 Coal Mining: Min. 122, 171, 176, C.E. 53, M.E. 81, 82, 83.
 Metallurgy: Met. 165, 166.
 Mining and Geology: Cer. 90, Geol. 106, 107.
 Ceramics: Cer. 131, 132, 133, Min. 152; Geol. 124, 125, 128, Physics 109.
 General electives: Comp. 102, Speech 103, modern foreign language, B.A. 54.

Electives in all cases must be approved in advance by the dean.

COURSES OF STUDY

For a description of courses, offered by the College of Mines, see Departments of Instruction section.

COLLEGE OF PHARMACY

REGISTRATION AS A PHARMACIST IN THE STATE OF WASHINGTON

In 1912 the State Board of Pharmacy by resolution required that, on and after July 1, 1914, all candidates for registration as a pharmacist must be graduates of recognized colleges of pharmacy. The legislature of 1923 enacted into law the requirements for registration of pharmacists as follows:

1. An applicant for registration must be a graduate of a College of Pharmacy recognized by the department of licenses.

2. A graduate of the four or five-year course of the *University of Washington College of Pharmacy* has the right to register as a pharmacist without further examination and without the requirement of practical experience in pharmacy.

3. A graduate of a recognized college of pharmacy located outside of the State of Washington may become a registered pharmacist as follows:

(a) A graduate of a two-year course must have two years of practical experience and pass an examination as listed under paragraph four.

(b) A graduate of a three-year course must have one year of practical experience and pass an examination as listed under paragraph four.

(c) A graduate of a four-year course is not required to have practical experience but must pass an examination as listed under paragraph four.

4. The examination embraces the following subjects: pharmacy, materia medica, chemistry, toxicology and posology, compounding prescriptions, identification of drugs, and laws relating to the practice of pharmacy in Washington. The grade must not be less than 60 per cent in any one subject and a general average of 75 per cent.

5. A registered pharmacist must be over twenty-one years of age. Persons under twenty-one shall be classified as assistant registered pharmacists until the age of majority is attained.

6. Persons registered by examination in other states may register as pharmacists in Washington without examination other than in the subject of laws relating to the practice of pharmacy in the state of Washington, providing such persons are graduates of recognized colleges of pharmacy.

7. Recognized colleges of pharmacy (see rule 10 of handbook on pharmacy law issued by the state department of licenses) are such colleges as hold membership in the American Association of Colleges of Pharmacy and such foreign colleges of pharmacy as meet the standards and requirements of the American Association of Colleges of Pharmacy.

8. Applicants for registration as pharmacists should communicate with the state department of licenses, Olympia, Washington, for proper blanks and instructions. A fee of ten dollars for registration is payable to the state treasurer.

WORK OFFERED

Training in pharmacy prepares students for a number of different types of work. With this in mind three curricula are outlined. The first two years of the three courses are the same for all students. At the beginning of the junior year the student must select the curriculum that he wishes to complete. The courses of study offer preparation as follows:

Retail Pharmacy. Pharmacy is clearly recognized as both a profession and a business. The graduate going out as a clerk in the ordinary retail store must be a safe professional pharmacist in order to serve properly the public

in the preparation and dispensing of medicines. He must also have a scientific training which will enable him to advise the public in the many problems affecting health and sanitation. In addition to this he must have some fundamental training in business methods if he is to be a success in his calling. This course of study aims to give training which will make the graduate a competent professional and business man for the ordinary retail pharmacy.

The Science Course. Curriculum number two is designed to give a scientific training which will prepare graduates for responsible positions in prescription pharmacies and hospital pharmacies. It also prepares students for positions in clinical diagnostic laboratories as pharmaceutical chemists and manufacturing pharmacists for large pharmaceutical manufacturing houses, as food and drug chemists in the enforcement of state and federal food and drug laws, and as chemists for food and drug manufacturing houses. There are also openings for teachers of pharmacy, but students desiring to teach in colleges of pharmacy are urged to take one or more years of graduate work.

Preparation for Study of Medicine. Curriculum number three is designed to give the student clear entrance to colleges of medicine and at the same time give him training in pharmacy. A graduate of this course, who later studies medicine, has a more thorough knowledge of drugs and medicines than can be obtained in any other way. Students taking this course are expected to select the college of medicine they wish to enter and, by proper use of elective courses, clear entrance for any one or more selected colleges of medicine can be gained. A graduate of this course, who studies medicine, has the benefit of training in two professions, and can practise both pharmacy and medicine as occasion demands.

GRADUATE STUDY

Master of Science in Pharmacy. A graduate of any one of the three undergraduate curricula can continue for a graduate degree. One year of properly selected study, with the completion of a research topic, leads to the degree of master of science in pharmacy. Students with this additional training have many added opportunities for employment.

Doctor of Philosophy with Major in Pharmacy. To obtain this degree the student must do at least two years of graduate work, in addition to that for the master's degree. More time may be necessary for the completion of a research problem, which will yield positive results and which is a definite contribution to knowledge. This college of pharmacy is giving special attention to graduate work and can assure students who take the time for thorough and complete preparation that unusual opportunities will open for them. Pharmacy colleges all over the country are developing and rapidly extending their courses; hence thoroughly trained teachers are in demand. Manufacturing houses and United States governmental laboratories are always looking for thoroughly trained men with this degree.

GENERAL INFORMATION

American Association of Colleges of Pharmacy. The College of Pharmacy is a member of the American Association of Colleges of Pharmacy. The objects of the association are: to promote closer relations between the several colleges of pharmacy of the United States, to standardize pharmaceutical education and to encourage a higher standard of proficiency for members of the profession.

Garden of Medicinal Plants. The College of Pharmacy maintains on the campus a garden in which plants of pharmaceutical importance are cultivated.

The area and scope of this garden have been gradually extended, until the college has a complete collection of medicinal plants which furnishes valuable material for classes in botany, materia medica and drug assay, and for research.

Fellowships and Scholarships. See page 52.

REQUIREMENTS FOR ADMISSION

Correspondence. Credentials and all correspondence relating to admission to any college or school of the University should be addressed to the registrar University of Washington. For detailed information concerning admission, registration and general University fees and expenses, applicable to all students, see pages 35, 43, 45.

DEGREES

1. The degree of bachelor of science in pharmacy (B.S. in Phar.) will be conferred upon any student who has fulfilled the entrance requirements and completed one of the four-year courses as outlined.

2. The degree of master of science in pharmacy (M.S.) will be conferred upon any graduate of the four-year course who has completed one year of graduate work and presented a satisfactory thesis.

3. The degree of doctor of philosophy (Ph.D.) with major and thesis in the pharmaceutical field may be taken by meeting all requirements of the Graduate School. The bulletin of the Graduate School should be consulted for information concerning graduate degrees.

CURRICULA REQUIRED FOR GRADUATION

Three four-year curricula are outlined, each leading to the degree of bachelor of science in pharmacy.

The first two years of all three curricula are the same and are outlined as follows:

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Phar. 1. General.....	3	Phar. 2. General.....	3	Phar. 3. General.....	3
Phar. 4. Profession....	2	Chem. 9. General.....	5	Chem. 10. Qualitative..	5
Chem. 8. General.....	5	Comp. 9. For Phar....	3	Comp. 10. For Phar....	2
Bot. 13. Pharmacy.....	5	Bot. 14. Pharmacy.....	4	Physiol. 6. Human.....	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Edu....+		or Physical Edu....+		or Physical Edu....+	

SECOND YEAR

Phar. 5. Quant. Grav... 5	Phar. 6. Quant. Vol... 5	Phar. 7. Urinalysis... 2
Phar. 9. Prescriptions.. 3	Phar. 10. Prescriptions. 3	Phar. 11. Prescriptions. 3
Phar. 12. Pharmacog... 3	Phar. 13. Pharmacog... 3	Phar. 14. Pharmacog... 3
Chem. 37. Organic.... 5	Chem. 38. Organic.... 5	Phar. 8. U.S.P. Assay. 2
Military or Naval Sci.	Military or Naval Sci.	Chem. 39. Organic.... 5
or Physical Edu....+	or Physical Edu....+	Military or Naval Sci.
		or Physical Edu....+

Optional Curricula. The student, after completing the first two years, the outline of which is common to all courses, must elect to follow one of the following:

1. **PHARMACY COMBINED WITH BUSINESS COURSES.** (To prepare graduates for positions in retail pharmacy.)

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Phar. 101. Pharmacol.		Phar. 102. Pharmacol.		Phar. 103. Pharmacol.	
Tox.	3	Tox.	3	Tox.	3
Phar. 113. Adv. Prescr.	5	Phar. 104. Microscopy.	2	Phar. 105. Microscopy..	2
B.A. 54. Bus. Law....	3	Phar. 114. Adv. Prescr.	5	Phar. 115. Adv. Prescr.	5
Bact. 101. General....	5	B.A. 55. Bus. Law....	3	Econ. 3. General.....	3
		Approved elective	3	Approved elective	3

FOURTH YEAR

Phar. 181. Drugst. Prac.	5	Phar. 182. Drugst. Prac.	5	Phar. 184. Laws & Jour.	3
Phar. 112. Biologicals..	3	Phar. 183. New Remed.	3	Phar. 197. Toxicology.	4
Phar. 195. Phar. Chem.	4	Phar. 196. Phar. Chem.	4	B.A. 65. Accounting....	5
Approved elective	3	Approved elective	3	Approved elective	3

Note.—By special permission of the dean, students who have had sufficient practical experience may substitute elective credits for courses 181 or 182 or both.

Total scholastic credits for graduation—180 plus six quarters in military or naval science or physical education.

2. **THE SCIENTIFIC COURSE.** (Prepares students for prescription and hospital pharmacy, manufacturing pharmacists and pharmaceutical chemists.)

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Phar. 101. Pharmacol.		Phar. 102. Pharmacol.		Phar. 103. Pharmacol.	
Tox.	3	Tox.	3	Tox.	3
Phar. 113. Adv. Prescr.	5	Phar. 104. Microscopy..	2	Phar. 105. Microscopy..	2
Bact. 101. General	5	Phar. 114. Adv. Prescr.	5	Phar. 115. Adv. Prescr.	5
Approved elective	2	Approved elective	5	Approved elective	5

FOURTH YEAR

Phar. 112. Biologicals..	3	Phar. 183. New Remed.	3	Phar. 184. Laws and	
Phar. 195. Phar. Chem.	4	Phar. 196. Phar. Chem.	4	Journ.	3
Physics 1 or 4. Mech..	5	Physics 2 or 5. Sd. Heat		Phar. 197. Toxicology..	4
Approved elective	3	Lt.	5	Approved elective	8
		Approved elective	3		

Total scholastic credits for graduation—180 plus six quarters in military or naval science or physical education.

3. **PRE-MEDICAL CURRICULUM.** (This curriculum, with proper selection of elective courses, will give clear entrance to colleges of medicine. The graduate upon completion of the study of medicine in the college of medicine has the benefit of training in both professions.)

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Phar. 101. Pharmacol.		Phar. 102. Pharmacol.		Phar. 103. Pharmacol.	
Toxicology	3	Toxicology	3	Tox.	3
Mod. For. Lang.....	5	Mod. For. Lang.....	5	Mod. For. Lang.....	5
Zoology 1 or 3.....	5	Zool. 2 or 4.....	5	Comp. 2. Composition..	5
Approved elective	2	Approved elective	2	or	
				Speech 37. Arg.....	5
				Approved elective	2

FOURTH YEAR

Physics 1 or 4. Mech..	5	Phys. 2 or 5. Sd. Ht.		Physics 3 or 6. Elect..	5
Bact. 101. General....	5	Lt.	5	Approved elective	10
Approved elective	5	Approved elective	10		

Total scholastic credits for graduation—180 plus six quarters in military or naval science or physical education.

GRADUATE COURSES

4. WITH DEGREE OF MASTER OF SCIENCE IN PHARMACY. (Five-Year Course.)

Graduates of the four-year course may continue work for the master's degree as follows:

Not more than 25 credits allowed outside of the department of pharmacy.

Not less than 20 credits shall be elected in the department of pharmacy.

At least 12 credits of the major work must be a research problem and the preparation of a thesis. Examination and thesis must conform to the regulations of the graduate school.

5. WITH DEGREE OF DOCTOR OF PHILOSOPHY.

The degree of doctor of philosophy (Ph.D.) with major and thesis in the pharmaceutical field may be taken by meeting all requirements of the Graduate School. The Graduate School section, page 117 should be consulted for information concerning graduate degrees.

COURSES OF STUDY

For a description of courses, offered by the College of Pharmacy, see Departments of Instruction section.

COLLEGE OF SCIENCE

REQUIREMENTS FOR ADMISSION

Correspondence. Credentials and all correspondence relating to admission to any college or school of the University should be addressed to the registrar, University of Washington. For detailed information concerning admission, registration, and general University fees and expenses, applicable to all students, see pages 35, 43, 45.

CURRICULA

The student entering the College of Science may take up one of several curricula, general or specialized, with emphasis on pure or applied sciences. These curricula, as set forth in detail in succeeding pages, are:

- I. Elective curricula, for students desiring general training in science, leading to the degree of bachelor of science.
- II. Required curricula, for students desiring to specialize in one department, or to obtain professional training, leading to the degree of bachelor of science, in one of the following subjects:
 - A. Bacteriology
 - B. Biology
 - C. Chemistry
 - D. Fisheries
 - E. Geology
 - F. Geography
 - G. Mathematics
 - H. Military Science
 - I. Naval Science
 - J. Oceanographic Laboratories
 - K. Physics
- III. Required curricula in group majors leading to the degree of bachelor of science:
 - A. Combined Science and Law
 - B. Pre-Library
- IV. Prescribed curricula in vocational subjects:
 - A. Home Economics
 - B. Nursing Education
 - C. Physical Education for Men
 - D. Physical Education for Women
 - E. Pre-medical
- V. Pre-Landscape Gardening curriculum.

I. ELECTIVE CURRICULA

The student selecting these curricula must choose one department of the College of Science, in which he proposes to do the preponderance of his work. This department will be known as his major department and the subject as his major subject. If possible, the student should choose his major subject at the time of entrance.

To secure the degree of bachelor of science in this division of the college, a student must earn 180 academic credits, observing the restrictions in regard to a major subject, scholarship requirements, and electives in other colleges.

A. REQUIREMENTS IN A MAJOR SUBJECT

A student must earn not less than 36 nor more than 60 credits in his major department. Not more than 96 credits will be accepted in the major and any other one department.

B. DISTRIBUTION OF REQUIRED WORK

At least 60 of the scholastic credits presented for the degree of bachelor of science must be in the courses numbered above 100, and 18 such credits must be in the major subject. Requirements for graduation are as follows:

1. *Subjects in Secondary Schools:*

- (a) English, three years.
- (b) Elementary algebra, one year.
- (c) Plane geometry, one year.
- †(d) One foreign language, two years.

2. *Subjects Required Either in Secondary School or in the University:*

- (e) United States history and civics, one year in high school or ten credits in the University.
- (f) History in addition to (e), one year or ten credits.
- (g) Mathematics, geology, or astronomy, one year or ten credits.
- (h) Chemistry, one year or ten credits.
- (i) Physics, one year or ten credits.
- (j) Botany or zoology, one year or ten credits.
- (k) The student must obtain a certificate of proficiency in English from the department of English, or must earn 10 credits in English composition in the University.

3. *Subjects Required in the University:*

- (l) Physical education, or military or naval science, two years.
- (m) Economics, history, language and literature, philosophy, political science, psychology, sociology, 20 credits, but only ten credits will be counted in any one of these subjects.

C. ELECTIVES

Students selecting these curricula may complete their courses with electives from any school or college of the University. Electives in engineering, fine arts, forestry, law, mines, and pharmacy, must not exceed 36 credits in all, and must not exceed 25 credits from any one of these colleges.

† If a student has not taken in high school the amount of foreign language required for admission to the college that he plans to enter, he must make up the deficiency in the University as part of his regular schedule of work, but without receiving college credit for it. For the College of Science, the foreign language requirement may be satisfied by two units, or 20 credits, in any one foreign language.

II. CURRICULA IN THE VARIOUS DEPARTMENTS

A minimum of 180 academic credits is required for graduation from any of these curricula.

A. BACTERIOLOGY

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition..	5	Comp. 2 or electives...	5	Psych. 1. General.....	5
Chem. 1 or 21. General..	5	Chem. 2 or 22. General..	5	Chem. 23. Qual. Anal..	5
Zool. 1 or 3. Intro.....	5	Zool. 2 or 4. Intro.....	5	Soc. 1. Intro.....	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

SECOND YEAR

Chem. 131. Organic....	5	Chem. 132. Organic....	5	Chem. 111. Quant. Anal. 5	
Physics 1. General.....	5	Physics 2. General.....	5	Physics 3. General.....	5
Elective	5	Elective	5	Bact. 101. General.....	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

THIRD YEAR

Bact. 105. Infect. Dis..	5	Bact. 106. Clin. Diag..	5	Bact. 104. Serology....	5
Anat. 105. Histol.....	6	Anat. 106 or 102.		Anat. 107 or 103.	
Bact. 103. Pub. Hyg... 5		Embryo. or General... 6		Neur. or General.....	6
		Bact. 102. Sanitary....	5	Elective	5

FOURTH YEAR

Bact. 120. Applied.....	5	Bact. 121. Applied.....	5	Bact. 122. Applied.....	5
Electives	10	Electives	10	Electives	10

B. BIOLOGICAL SCIENCES

In this curriculum the student must select a major in anatomy, botany, or zoology. On selecting his major subject, the student should at once consult his major department, a member of which will act as his adviser. The adviser will plan a special curriculum for the student, fitting him for his chosen work. This curriculum must be submitted to the dean of the College of Science for approval. Thereafter the individual curriculum can be changed only with consent of the adviser and the dean.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition..	5	Comp. 2. Composition or		Mathematics or Elective 5	
Botany or Zoology.....	5	Electives	5	Electives	10
Electives	5	Botany or Zoology....	5	Military or Naval Sci.	
Military or Naval Sci.		**Mathematics or Elect. 5		or Phys. Edu.....+	
or Phys. Edu.....+		Military or Naval Sci.			
		or Phys. Edu.....+			

SECOND YEAR

Chemistry or Physics... 5		Chemistry or Physics... 5		Major	5
Major	5	Major	5	Electives	10
Electives	5	Electives	5	Military or Naval Sci.	
Military or Naval Sci.		Military or Naval Sci.		or Phys. Edu.....+	
or Phys. Edu.....+		or Phys. Edu.....+			

THIRD YEAR

Major	5	Major	5	Major	5
B.A. 2, Pol. Sci. or Soc. 5		Soc., Pol. Sci. or Econ. 5		Electives	10
Electives	5	Electives	5		

FOURTH YEAR

Major	5	Major	5	Electives	15
Electives	10	Electives	10		

**Two and one-half years of mathematics required, which may be taken in high school or University.

C. CHEMISTRY

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 1 or 21. General...	5	Chem. 2 or 22. General...	5	Chem. 23. Qual. Anal...	5
Math. 4. Plane Trig...	5	Math. 5. College Alg...	5	Math. 6. Anal. Geom...	5
Comp. 1. Composition...	5	Comp. 2 or ¹ Electives...	5	¹ Electives	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

¹Options (a) Geology or Mineralogy
(b) Mechanical Drawing
(c) Biological Science

SECOND YEAR

Chem. 109. Quan. Anal. 5	Chem. 110. Quan. Anal. 5	Chem. 101. Adv. Qual. Anal. 5
Physics 1 or 97. Gen.. 5	Physics 2 or 98. General 5	Physics 3 or 99. General 5
Math. 61. Calc..... 3	Math. 62. Calc..... 3	² Electives
and	and	or
Electives	Electives	Math. 109. Calc..... 5
Math. 107. Calc..... 5	Math. 108. Calc..... 5	Military or Naval Sci.
Military or Naval Sci.	Military or Naval Sci.	or Phys. Edu.....+
or Phys. Edu.....+	or Phys. Edu.....+	

THIRD YEAR

¹ Chem. 131. Organic... 5	² Chem. 132. Organic... 5	³ Chem. 133. Organic... 5
¹ Electives	² Electives	³ Electives
Group Option	Group Option	Group Option
(a) General:	(a) General:	(a) General:
¹ Electives	² Electives	³ Electives
(b) Industrial:	(b) Industrial:	(b) Industrial:
Chem. 121. Ind.... 5	Chem. 122. Ind.... 5	Chem. 123. Ind.... 5
(c) Biochemical:	(c) Biochemical:	(c) Biochemical:
Physiol. 151. Adv. or	Physiol. 152. Adv. or	Physiol. 153. Adv. or
Bact. 101. Gen.... 5	Bact. 102. Sanit... 5	Bact. 103. Pub. Hyg. 5
(d) ⁴ Oceanographical:	(d) ⁴ Oceanographical:	(d) ⁴ Oceanographical:
Physics 101. Intro.	Physics 105. Elec.. 5	Physics 160. Optics 5
Mod. Theor. 5		

FOURTH YEAR

Chem. 181. Phys. and Theor. 5	Chem. 182. Phys. and Theor. 5	Chem. 183. Phys. and Theor. 5
¹ Electives	² Electives	
Group Option	Group Option	Group Option
(a) General:	(a) General:	(a) General:
Electives	Electives	Electives
(b) Industrial:	(b) Industrial:	(b) Industrial:
Chem. 171. Chem. Engr. 5	Chem. 172. Chem. Engr. 5	Electives
176. Chem. Engr. Thesis	177. Chem. Engr. Thesis	(c) Biochemical:
3	3	Chem. 163. Physiol Chem. 3
(c) Biochemical:	(c) Biochemical:	Electives
Chem. 161. Physiol. Chem. 5	Chem. 162. Physiol. Chem. 5	(d) ⁴ Oceanographical:
Electives	166. Bioch. Prep... 3	Electives
(d) ⁴ Oceanographical:	(d) ⁴ Oceanographical:	8
Electives	Electives	

² Students expecting to elect the industrial group in junior year must take Chem. 52 the spring quarter of the sophomore year.

³ For Oceanographical option, Chem. 128 or 129 may be substituted for Chem 131 and 132. Chem. 133 is not required.

⁴ In addition to the subjects specially listed above, 10 credits in either French or German are required, to be completed before the end of the third year.

⁵ Chem. 190 and 191 (History of Chemistry) are suggested as electives in either the junior or senior year.

⁶ Twenty-five hours of electives must be taken in the biological sciences or geology.

D. FISHERIES

This curriculum has been prepared to meet the needs of students interested in the life histories of fish and commercially important invertebrates. Those interested in other fields of fisheries science will consult the Fisheries Department for special arrangements of courses under the elective curricula of the College of Science.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition...	5	Comp. 2. Composition...	5	Zool. 5. Embryol.....	5
Zool. 1. Elementary....	5	Zool. 2. Elementary....	5	Chem. 23. Qual. Anal..	5
Chem. 1 or 21. General	5	Chem. 2 or 22. General	5	Elective	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

SECOND YEAR

Zool. 127. Comp. Anat. 5	Zool. 128. Comp. Anat.. 5	Zool. 108. Limnology... 5
or	or	Physics 3 or 6. Gen. or
125. Invert. Zool..... 5	126. Invert. Zool.... 5	Elective 5
Elective 5	Elective 5	Elective 5
Physics 1 or 4. General 5	Physics 2 or 5. General. 5	Military or Naval Sci.
Military or Naval Sci.	Military or Naval Sci.	or Phys. Edu.....+
or Phys. Edu.....+	or Phys. Edu.....+	

THIRD YEAR

Fish. 101. Ichth. or	Fish. 102. Ichth. or	Fish. 103. Ichth. or
105. Comm. Invert... 5	106. Comm. Invert... 5	107. Comm. Invert... 5
Math. 4. Plane Trig... 5	Math. 5. College Alg... 5	Math. 6. Anal. Geom... 5
Elective 5	Elective 5	Zool. 101. Cytol. or
		Elective 5

FOURTH YEAR

Fisheries electives ....10	Fisheries electives ....10	Fisheries electives 5
Fish. 195. Seminar..... 2	Fish. 196. Seminar.... 2	Fish. 197. Seminar.... 2
or	or	Math. 63. Calc..... 3
Zool. 16. Evolution.... 2	Zool. 121. Micro. Tech.. 3	Elective 5
Math. 61. Calc..... 3	Math. 62. Calc..... 3	

E. GEOLOGY

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 1 or 21. General	5	Chem. 2 or 22. General	5	Chem. 23. Qual. Anal..	5
Math. 51. Trig..... 4		Math. 52. College Alg.. 4		Comp. 1. Composition... 5	
G.E. 1. Engr. Drawing. 3		G.E. 2. Engr. Drawing. 3		G.E. 21. Plane Surv... 3	
Elective	3	Elective	3	3. Drafting Prob... 3	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

SECOND YEAR

Geol. 5. Rocks & Min.. 5	Geol. 6. Elem. Physiog. 5	Geol. 7. Hist. Geol..... 5
Physics 1. General..... 5	Physics 2. General..... 5	121. Mineral. 5
Bot. or Zool. 1. Elem.. 5	Bot. or Zool. 2. Elem.. 5	C.E. 54. Topo. Surv... 3
Military or Naval Sci.	Military or Naval Sci.	Comp. 2. Composition... 5
or Phys. Edu.....+	or Phys. Edu.....+	Military or Naval Sci.
		or Phys. Edu.....+

THIRD YEAR

Geol. 123. Optical Min. 5	Geol. 124. Petrog..... 5	Geol. 125. Petrol..... 5
French 1 or Ger. 1. El. 5	130. Paleont. 5	132. Invert. Pal..... 5
Astron. or Elective.... 5	Fr. 2 or Ger. 2. Elem.. 5	Fr. 3 or Ger. 3. Elem.. 5

FOURTH YEAR

Geol. 122. Field Meth.	Geol. 131. Stratigraphy. 3	Geol. 128. Econ. Geol. of
or Elective .....10	126. Sed. Petrog..... 5	Non-Metals 5
Min. 51. Elem..... 3	127. Econ. Geol. of	112. Phys. East. U.S. 5
Chem. 111. Quant. Anal. 5	Met. 5	Met. 53. Elem..... 3
	190. Thesis 5	160. Met. Anal..... 2

¹ Ten credits of German or French in the University are required before the end of the junior year.

F. GEOGRAPHY

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Geog. 1. Elem.	5	Geol. 6. El. of Physiog.	5	B.A. 7. Econ. Geog.	5
B.A. 1. Gen. Econ.	5	B.A. 2. Gen. Econ.	5	Soc. 1. Intro.	5
Comp. 1. Composition. .	5	¹ Math. 2. Solid Geom. .	5	Comp. 2. Composition. .	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.	+	or Phys. Edu.	+	or Phys. Edu.	+

SECOND YEAR

Geog. 70. Conservation. 5	Geog. 11. Weather and Climate 5	Geog. 105. Ec. Geog. of Latin Amer. 5
Physics 1 or 4. General 5	Physics 2 or 5. General 5	Geol. 128. Econ. Geol. of Non-Metals 5
Chem. 1 or 21. General 5	Chem. 2 or 22. General 5	Fr. 3 or Ger. 3. Elem. . 5
Fr. 1 or Ger. 1. Elem. . 5	Fr. 2 or Ger. 2. Elem. 5	Military or Naval Sci. .
Military or Naval Sci.	Military or Naval Sci.	or Phys. Edu.
or Phys. Edu.	or Phys. Edu.	+

THIRD YEAR

Geog. 102. Econ. Geog. of North America. . 5	Geog. 103. Econ. Geog. of Asia 5	Geog. 104. Econ. Geog. of Europe 5
Bot. 1. Elem.	Anthrop. 51. Intro.	114. Geog. of Oceans 5
Soc. 55. Human Ecol. . 5	B.A. 116. Prin. For. Tr. 5	Geol. 112. Physiog. 5

FOURTH YEAR

Geog. 175. Pol. Geog. . 5	Geog. 155. Soc. Geog. . 5	Geog. 199. Proseminar. 5
B.A. 173. Int. Com. Pol. 5	B.A. 145. World Trade. 5	Geol. 113. Physiog. 5
² Elective 5	² Elective 5	² Elective 5

G. MATHEMATICS

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition. .	5	Comp. 2 or Electives. .	5	History	5
Math. 4. Plane Trig. . .	5	Math. 5. College Alg. . .	5	Math. 6. Anal. Geom. .	5
Physics 1. General. . . .	5	Physics 2. General. . . .	5	Modern Foreign Lang. .	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.	+	or Phys. Edu.	+	or Phys. Edu.	+

SECOND YEAR

History 5	B.A. 2. Gen. Econ. 5	Pol. Sci. 1. Comp. Govt. 5
Math. 107. Calc. 5	Math. 108. Calc. 5	Math. 109. Calc. 5
Modern Foreign Lang. . 5	Chem. 1. General. 5	Chem. 2. General. 5
Military or Naval Sci.	Military or Naval Sci.	Military or Naval Sci.
or Phys. Edu.	or Phys. Edu.	or Phys. Edu.
+	+	+

THIRD YEAR

Group I—Secondary School Teachers

Psych. 1. Intro. 5	Philosophy or Logic. . 5	Astron. 1. General. 5
Biological Science . . . 5	Biological Science . . . 5	Mathematics 2 or 3
Mathematics 2 or 3	Mathematics 2 or 3	Edu. 60. Sec. Edu. . . . 3
Electives 3 or 2	Electives 3 or 2	Electives 3 or 2
		Edu. Elective 3

Group II—College and University Teachers

Psych. 1. General. 5	Philosophy or Logic. . 5	Astronomy 5
Biological Science . . . 5	Biological Science . . . 5	Mathematics 4
Mathematics 5	Mathematics 5	Electives 5

FOURTH YEAR

Group I—Secondary School Teachers

Edu. 70. H.S. Proced. . 4	Edu. 71. Cadet Teaching contd. 12	Education 3
71. Cadet Teach. 8		Edu. 75Q. Math. 3
Electives 7		Electives 3

Group II—College and University Teachers

Mathematics 5	Mathematics 5	Mathematics 5
Electives 10	Electives 10	Electives 10

¹ If solid geometry has been taken in high school, elective may be substituted.

² If graduate work leading to the doctorate is contemplated, a second language should be taken.

H. FOUR-YEAR CURRICULUM IN MILITARY SCIENCE

For students who desire to major in military science the following four-year curriculum has been provided. This will give a good general college education upon which any line of professional or technical study may be based and will give to the graduate the degree of bachelor of science in military science, and at the same time enable him to obtain a commission as second lieutenant in the Officers' Reserve Corps of the United States Army in accordance with the provisions of the National Defense Act.

Military Science.

<i>First Year</i>		<i>Credits</i>	<i>Second Year</i>		<i>Credits</i>
Mil. Sci. 1-2-3. Inf.	}	6	Mil. Sci. 51-52-53. Inf.	}	6
4-5-6. Arty.			61-62-63. Arty.		
Math. 1. Algebra		5	Physics 1-2 or 97, 98. General		10
2. Solid Geometry		5	Chem. 1-2 or 21-22. General		10
4. Plane Trigonometry		5	French, Ger. or Span		9 or 10
G.E. 7. Engr. Drawing		3	Hist. 57-58-59. U. S.		9
21. Plane Surv.		3	Speech 40. Essen. of Speaking		5
Comp. 1-2. Composition		10			
French, Ger. or Span. 1-2-3. Elem.		15			
<i>Third Year</i>		<i>Credits</i>	<i>Fourth Year</i>		<i>Credits</i>
Mil. Sci. 104-105-106. Adv. Inf.	}	9	Mil. Sci. 154-155-156. Adv. Inf.	}	9
114-115-116. Adv. Arty.			164-165-166. Adv. Arty.		
124-125-126. Adv. Ord.			174-175-176. Adv. Ord.		
Phil. 1, 2, 3, or 5. Intro		5	Military Science Thesis		5
B.A. 2, Soc. or Pol. Sci.		10	†Approved Electives		32
†Approved Electives		21			

Summer Quarter (After Third Year)—Advanced R.O.T.C. Camp

Students taking this course will specialize in the military work of one of the three units established here, infantry, coast artillery or ordnance, and receive their Reserve commissions in that branch of the service.

The military department, during the latter part of the second year and prior to the beginning of the third year, will advise the student as to his electives, all of which will be outside the military department. Each case will be handled separately, depending on the student's future life. After approval by the professor of military science and tactics, and the dean of the College of Science, the curriculum for the individual student must be followed until graduation.

I. FOUR-YEAR CURRICULUM IN NAVAL SCIENCE

For students who desire to follow the sea, the following four-year curriculum has been provided. In addition to giving the student a good general education, this course will fit him to be a master in the merchant marine or, after experience at sea, will fit him for an executive position with a shipping concern. Graduates of Naval R.O.T.C. are now eligible to obtain a third mate's license after six months at sea. Graduates of this course will obtain the degree of bachelor of science in naval science and are eligible for a commission as ensign in the United States Naval Reserve.

† All electives will be outside the military department.

Naval Science.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Nav. Sci. 1. Seamanship, Adm., Drill	3	Nav. Sci. 2. Seamanship, Adm., Drill	3	Nav. Sci. 3. Seamanship, Adm., Drill	3
French or Spanish.....	5	French or Spanish.....	5	French or Spanish.....	5
Comp. 1. Composition..	5	Math. 5. Algebra.....	5	Physics 2. Gen. Physics	5
Math. 4. Trigonometry.	5	Physics 1. Gen. Physics	5	Speech 40. Pub. Spkg..	5

SECOND YEAR

Nav. Sci. 51. Navigation	3	Nav. Sci. 52. Navigation	3	Nav. Sci. 53. Navigation	3
Hist. 57. U.S. History.	3	Hist. 58. U.S. History.	3	Hist. 59. U.S. History	3
B.A. 7. Econ. Geog....	5	B.A. 3. Gen. Econ....	3	B.A. 57. Bus. Law....	5
Chem. 1 or 21. General		Chem. 2 or 22. General	5	Electives	7
Chemistry	5	Electives	2		
Electives	4				

Recommended electives for freshmen and sophomores: Comp. 2, Speech 37, 2nd year foreign languages, Math. 6 or 53, Physics 3 or 6, Chem 23, G.E. 7, 82, Phil. 5, Psych. 1, Pol. Sci. 1.

THIRD YEAR

Nav. Sci. 101. Gunnery, Ordnance Drill	3	Nav. Sci. 102. Gunnery, Ordnance Drill	3	Nav. Sci. 103. Gunnery, Engr. Drill	3
B.A. 104. Econ. of Transportation	5	B.A. 145. World Trade.	5	B.A. 119. Water Trans.	5
Electives	10	Electives	10	Electives	10

FOURTH YEAR

Nav. Sci. 151. Leadership, Strat. & Tactc. Drill..	3	Nav. Sci. 152. Aviation, Strat. & Tactc. Drill..	3	Nav. Sci. 153. Commun., Strat. & T. Drill....	3
Law 141. Admiralty....	4	B.A. 153. B.A. of Ship.	5	Electives	15
Electives	11	Electives	10		

Recommended electives for juniors and seniors: B.A. 107, 117, 118, Math. 61, 62, 63, Pol. Sci. 111, 112, 113, M.E. 179, 185, Law 184, 185.

Summer Quarter—Advanced R.O.T.C. Cruise (required)¹

J. OCEANOGRAPHIC LABORATORIES

A thorough training in the fundamental sciences is essential for an extensive study in oceanography. Such a study does not ordinarily begin until graduate standing has been attained, although exceptional seniors will be considered. Preparation for graduate study in oceanography may be approached by majoring in one of the physical or biological sciences. For the convenience of students contemplating such work, the following curricula for undergraduates are suggested by the staff of the laboratories. By adherence to the curricula a student may graduate with the degree of bachelor of science. The student adviser will be a member of the staff of the laboratories representing the major department.

Botany

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Bot. 1. Elem.....	5	Zool. 1. Elem.....	5	Bot. 3. Elem.....	5
Chem. 21. General....	5	Chem. 22. General....	5	Chem. 23. Qual. Anal..	5
Comp. 1. Composition..	5	Comp. 2. Composition..	5	Zool. 2. Elem.....	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

¹ One advanced cruise, preferably at the end of the third year, will be required of all students. Week-end cruises are offered once a month.

SECOND YEAR

Bot. 105. Morph. and Evolution 5	Bot. 106. Morph. and Evolution 5	Bot. 107. Morph. and Evolution 5
Physics 1. General. 5	Physics 2. General. 5	Physics 3. General. 5
Math. 4. Plane Trig. 5	Math. 5. College Alg. 5	Math. 6. Anal. Geom. 5
Military or Naval Sci. or Phys. Edu. +	Military or Naval Sci. or Phys. Edu. +	Military or Naval Sci. or Phys. Edu. +

THIRD YEAR

Bot. 119. Plant Histol. 5	Chem. 128. Organic. 5	Chem. 129. Organic. 5
Math. 107. Calc. 5	Math. 108. Calc. 5	Math. 109. Calc. 5
Elective 5	Elective 5	Elective 5

FOURTH YEAR

Bot. 143. Plant Physiol. 5	Bot. 144. Plant Physiol. 5	Bot. 145. Plant Physiol. 5
Electives 10	Electives 10	Electives 10

For the electives, 20 credits must be selected from courses in language, literature, history, or the social sciences, with not more than 10 credits in one department. Suggested electives: Hist. 1-2; Pol. Sci. 1; B.A. 2; Soc. 1; Phil. 1; Psych. 1; Ger. 1-2, 3, 60, or continuation of work taken in secondary school; French 1-2, 3, 4, 7, or continuation of work taken in secondary school; Physics 101, 105, 160; Zool. 5, 106, 107, 125, 126; Chem. 111, 140, 141; Bot. 140, 247; Bact. 101.

Chemistry

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 21. General. 5		Chem. 22. General. 5		Chem. 23. General. 5	
Math. 4. Plane Trig. 5		Math. 5. College Alg. 5		Math. 6. Anal. Geom. 5	
Comp. 1. Composition. 5		Comp. 2. or Elective. 5		Elective 5	
Military or Naval Sci. or Phys. Edu. +		Military or Naval Sci. or Phys. Edu. +		Military or Naval Sci. or Phys. Edu. +	

SECOND YEAR

Chem. 109. Quan. Anal. 5	Chem. 110. Quan. Anal. 5	Chem. 101. Adv. Qual. Anal. 5
Physics 1. General. 5	Physics 2. General. 5	Physics 3. General. 5
Math. 107. Calc. 5	Math. 108. Calc. 5	Math. 109. Calc. 5
Military or Naval Sci. or Phys. Edu. +	Military or Naval Sci. or Phys. Edu. +	Military or Naval Sci. or Phys. Edu. +

THIRD YEAR

Chem. 131. Org. or Elec. 5	Chem. 128 or 132. Org. 5	Chem. 129. Org. or Elec. 5
Physics 101. Mod. Theor. 5	Physics 105. Electricity. 5	Physics 160. Phys. Optics 5
Elective 5	Elective 5	Elective 5

FOURTH YEAR

Chem. 181. Phys. and Theor. 5	Chem. 182. Phys. and Theor. 5	Chem. 183. Phys. and Theor. 5
Electives 10	Electives 10	Electives 10

For the electives, 20 credits must be selected from courses in language, literature, history or the social sciences, with not more than 10 credits in one department, and 25 credits from the biological sciences or geology.

College of Science

Physics

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 21. General....	5	Chem. 22. General.....	5	Chem. 23. Qual. Anal..	5
Math. 4. Plane Trig...	5	Math. 5. College Alg...	5	Math. 6. Anal. Geom...	5
Biological Science....	5	Biological Science....	5	Comp. 1. Composition..	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

SECOND YEAR

Physics 1. General....	5	Physics 2. General.....	5	Physics 3. General.....	5
Math. 107. Calc.....	5	Math. 108. Calc.....	5	Math. 109. Calc.....	5
Elective	5	Elective	5	Elective	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

THIRD YEAR

Physics 101. Modern		Physics 105. Electricity.	5	Physics 160. Phys. Optics	5
Theor.	5	Biological Science	5	Biological Science	5
Biological Science	5	Elective	5	Elective	5
Elective	5				

FOURTH YEAR

Physics 191. Anal. Mech.	3	Physics 192. Anal. Mech.	2	Chem. 183. Phys. and	
Chem. 181. Phys. and		Chem. 182. Phys. and		Theor.	5
Theor.	5	Theor.	5	Electives	10
Electives	7	Electives	8		

For the electives, 20 credits must be selected from courses in language, literature, history or the social sciences, with not more than 10 credits in one department, and 10 credits must be in physics.

Zoology

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Zool. 1. Elem.....	5	Zool. 2. Elem.....	5	Comp. 1. Composition..	5
Chem. 21. General....	5	Chem. 22. General.....	5	Chem. 23. General.....	5
Math. 4. Plane Trig...	5	Math. 5. College Alg...	5	Math. 6. Anal. Geom...	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

SECOND YEAR

Zool. 125. Invert. Zool..	5	Zool. 126. Invert. Zool..	5	Zool. 5. Gen. Embryol.	5
or		or		Physics 3. General.....	5
Zool. 127. Comp. Anat..	5	Zool. 128. Comp. Anat..	5	Math. 13. Stat. Meth...	5
or		or		Military or Naval Sci.	
Fish. 101. Ichthyol....	5	Fish. 102. Ichthyol....	5	or Phys. Edu.....+	
Physics 1. General.....	5	Physics 2. General.....	5		
Elective	5	Elective	5		
Military or Naval Sci.		Military or Naval Sci.			
or Phys. Edu.....+		or Phys. Edu.....+			

THIRD YEAR

Chem. 131. Organic....	5	Chem. 132. Organic....	5	Chem. 111. Quan. Anal.	5
Bot. 1. Elem.....	5	Bot. 2. Elem.....	5	Zool. 102. Exper. Zool..	5
Elective	5	Elective	5	Elective	5

FOURTH YEAR

Zool. 106. Plankton...	5	Zool. 121. Micro. Tech.	3	Zool. 101. Cytology....	5
Bact. 101. General....	5	Electives	12	or	
Elective	5			Zool. 107. Parasitology..	5
				or	
				Zool. 108. Limnology..	5
				Electives	10

For the electives, 20 credits must be selected from courses in language, literature, history or the social sciences, with not more than 10 credits in one department.

K. PHYSICS

First Year	Credits	Second Year	Credits
Composition	10	Physics 1, 2, 3, or 4, 5, 6. General...15	
Psychology	5	Math. 107, 108, 109. Calc.....15	
Math. 4. Plane Trig.....5		¹ Advisory Electives15	
Math. 5. College Algebra.....5		Military or Naval Sci. or Phys. Edu.+	
Math. 6. Anal. Geometry.....5			
Chemistry	15		
Military or Naval Sci. or Phys. Edu.+			
Third Year	Credits	Fourth Year	Credits
Physics 101. Modern Theories.....5		Physics 191-192. Anal. Mech.....5	
Physics 105. Electricity.....5		Physics Electives10	
Physics 160. Physical Optics.....5		¹ Advisory Electives15	
Biol. Sci., Geol., Astron.....15		² Free Electives15	
³ Free Electives15			

III. REQUIRED CURRICULA IN GROUP MAJORS

A. SIX-YEAR COURSE IN SCIENCE AND LAW

This is a combination course whereby a student may obtain the degrees of bachelor of science and bachelor of laws in six years. At the end of his third year, after he has earned 139 credits, and completed the required six quarters in military or naval science or physical education, and all required work with a major in some department, he may register in the School of Law for the first year's work in law. He will be granted the bachelor of science degree at the end of the fourth year, or as soon as he completes the required work above specified with nine additional credits in the College of Science and 36 credits in the School of Law, making a total of 180 credits for graduation. The fifth and sixth years of the combined course are devoted to completing the remainder of the required work for graduation from the School of Law.

B. A CURRICULUM FOR PRE-LIBRARY STUDENTS IN THE COLLEGE OF SCIENCE

FIRST YEAR

	Credits		Credits
[*] Mod. Lang. §1-2, 3. French or Ger...15		Zool. §1-2. Elementary.....10	
Astron. 1. General.....5		Lib. Arts. 1. Intro. to Mod. Thought. 5	
Psych. §1. Introduction.....5		Chem. §1-2 or 21-22. General.....10	
Mil. or Nav. Sci. or Phys. Edu.....+		Mil. or Nav. Sci. or Phys. Edu.....+	

SECOND YEAR

	Credits		Credits
[*] Mod. Lang. §Fourth quarter of for. lang. previously taken.....5		Zool. §16. Evolution.....2	
Begin other foreign lang. required by Library School10		Zool. 17. Eugenics.....2	
B.A. 2, Pol. Sci. or Soc. 1. Intro...5		Hist. 1-2. Modern and Medieval.....10	
Comp. §1, 2.....10		Geol. §1. General.....5	
Mil. or Nav. Sci. or Phys. Edu.....+		Geog. §1. Prin. of Econ. Geog.....5	
		Music 4, 5, 6. Hist and Apprec.....9	
		Mil. or Nav. Sci. or Phys. Edu.....+	

THIRD YEAR

	Credits		Credits
[*] Mod. Lang. §Complete Library School requirements10		Physics 1-2. General10	
Bot. §1, 2. General.....10		Hist. 130. Europe, 1814-1870.....5	
Lib. Arts 11. Intro. to Fine Arts.....5		Hist. 131. Europe, Since 1870.....5	

For those who take the library curriculum in the senior year no academic major is required in the College of Science, as the technical training of the Library School constitutes this major. Subjects marked with the double dagger are required. The complete Library School curriculum constitutes the fourth year of study.

¹ Advisory electives must be approved by the department.

² It is very desirable that the student take 15 credits of his free electives in history, economics, language, philosophy, political science, or sociology.

³ The Library School requires 20 credits each of French and German in either high school or college.

† Required courses.

IV. PRESCRIBED CURRICULA IN VOCATIONAL SUBJECTS

A. PRESCRIBED CURRICULA IN HOME ECONOMICS

Home economics is primarily an applied field of knowledge. Its subject matter is based upon factual material and laws found in physical sciences, social sciences and fine arts. The application of the principles of these supporting subjects define the techniques, determine the standards and form the basis for the choices which modern living makes necessary. Home economics assembles from the basic fields of knowledge the material which will make the individual better understand his physical and social environment, endeavors to show the application of such knowledge in terms of human needs and to provide an outlet for his abilities in constructive vital work. The strength of home economics lies not only in well organized courses under its own title, but in the relation of these courses to the fundamental sciences and art.

The following curricula include these supporting courses in the proper sequence. These curricula lead to the degree of bachelor of science in home economics.

Smith-Hughes Teacher Training Curriculum

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition...	5	Physics 90. Home.....	5	Chem. 2 or 22. Gen....	5
Physics 89. Home.....	5	Chem. 1 or 21. General..	5	Comp. 2. Composition..	5
Phys. Edu. 10. Health		Lang., Lit., Hist.....	3	P.S.D. 9. Art Struc....	3
Education	5	Zool. 17. Eugenics.....	2	Nurs. Edu. 5. Ho. Nurs.	2
Phys. Edu.	1	Phys. Edu.	1	Phys. Edu.	1

SECOND YEAR

Chem. 135. Organic....	5	Chem. 136. Organic....	5	Physiol. 7. Elem.....	5
Arch. 1. Arch. Apprec..	2	Arch. 2. Arch. Apprec..	2	H.E. 47. Home Furn....	3
H.E. 25. Textiles.....	3	H.E. 26. Textiles.....	3	or	
H.E. 45. Hh. Mgt.....	3	H.E. 46. Hh. Mgt.....	3	H.E. 46. Hh. Mgt.....	3
Elective	2	or		Bact. 101. General....	5
Phys. Edu.	1	H.E. 47. Home Furn..	3	Edu. 60. Seccon. Edu....	3
		Elective	2		
		Phys. Edu.	1		

THIRD YEAR

H.E. 112. Cost Des..3 or 5	H.E. 113. Cost. Des. & Const.	H.E. 114. Cost. Des. & Const.
H.E. 115. Food Prep..3 or 5	H.E. 116. Food Prep.. 3	H.E. 117. Food Prep.. 5
Psych. 1. General.....	B.A. 1. Gen. Econ.....	Edu. 70. Methods.....
Edu. 90. Meas.....	Edu. 9. Edu. Psych... 3	Edu. 75NA. Spec. Meth. 3
Elective		

FOURTH YEAR

H.E. 107. Nutrition....	5	H.E. 108. Nutrition....	5	H.E. 145. Hh. Econ.....	2
Edu. 71. Cadet Teach..	8	H.E. 144. Hh. Econ... 3		H.E. 148. Home Mgt.	
Edu. 75NB. Spec. Meth. 3		Edu. 71. Cadet Teach.		House	2
Edu. 120. Edu. Soc....	3	continued		H.E. 190. Child Nutr. & Care	5
		Soc. 1. Intro.....	5	Electives	6

Twenty credits of language, literature or history must be elected.

One quarter's residence after graduation is required for the normal diploma; two quarters will be required after September, 1932, and three quarters after September, 1933.

Institution Management Curriculum

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition..	5	Physics 90. Home....	5	Chem. 2 or 22. Gen...	5
Physics 89. Home....	5	Chem. 1 or 21. Gen...	5	Comp. 2. Composition..	5
Phys. Edu. 10. Health		Lang., Lit., or Hist....	3	P.S.D. 9. Art. Struct..	3
Education	5	Zool. 17. Eugenics....	2	Lang., Lit., or Hist....	2
Phys. Edu.	1	Phys. Edu.	1	Phys. Edu.	1

SECOND YEAR

Chem. 135. Organic...	5	Chem. 136. Organic....	5	Chem. 144. Physiol....	5
H.E. 45. Hh. Mgt....	3	H.E. 46. Hh. Mgt....	3	H.E. 26. Textiles.....	3
Psych. 1. General.....	5	or		H.E. 47. Home Furn..	3
Elective	2	H.E. 47. Home Furn...	3	or	
Phys. Edu.	1	Physiol. 7. Elem.....	5	H.E. 46. Hh. Mgt....	3
		Elective	3	Bact. 101. General....	5
		Phys. Edu.	1		

THIRD YEAR

H.E. 115. Food Prep.3 or 5		H.E. 116. Food Prep... 3		H.E. 117. Food Prep... 5	
B.A. 2. Gen. Econ....	5	B.A. 65. Acct. Surv... 5		H.E. 124. Inst. Mgt... 3	
Elective	6 or 8	Soc. 1. Intro.....	5	B.A. 106. Mktg. &	
		Elective	3	Advg.	5
				Elective	3

FOURTH YEAR

H.E. 107. Nutrition... 5		H.E. 108. Nutrition... 5		H.E. 121. Inst. Food	
H.E. 120. Adv. Food		H.E. 125. Inst. Mktg... 3		Preparation	5
Prep.	3	H.E. 144. Hh. Econ... 2		H.E. 123. Inst. Mgt... 3	
H.E. 122. Inst. Equip... 3		H.E. 190. Child Nutr.		H.E. 145. Hh. Econ... 2	
Elective	5	& Care.....	5	H.E. 191. Diet Therapy 4	

Twenty credits of language, literature or history must be elected.

Textiles, Clothing and Fine Arts Curriculum

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition..	5	Chem. 1 or 21. Gen....	5	Comp. 2. Composition..	5
P.S.D. 5. Drawing....	3	P.S.D. 6. Drawing....	3	Chem. 2 or 22. Gen... 5	
P.S.D. 9. Art Struct..	3	P.S.D. 10. Art Struct..	3	P.S.D. 11. Art Struct..	3
Phys. Edu. 10. Health		Lang., Lit., or Hist....	4	Elective	2
Education	5	Phys. Edu.	1	Phys. Edu.	1
Phys. Edu.	1				

Physics 89-90 may be substituted for Chemistry 1-2.

SECOND YEAR

H.E. 25. Textiles.....	3	H.E. 26. Textiles.....	3	Physiol. 7. Elem.....	5
H.E. 45. Hh. Mgt....	3	H.E. 46. Hh. Mgt....	3	H.E. 47. Home Furn..	3
H.E. 112. Cost. Des. &		or		or	
Const.	3	H.E. 47. Home Furn..	3	H.E. 46. Hh. Mgt....	3
Arch. 1. Arch. Apprec..	2	H.E. 113. Cost. Des. &		H.E. 114. Cost. Des. &	
Electives	4	Const.	3	Const.	3
Phys. Edu.	1	Arch. 2. Arch. Apprec.2		Electives	5
		Electives	4		
		Phys. Edu.	1		

THIRD YEAR

H.E. 101. Needlecraft. 2		P.S.D. 170. Cost. Des.. 2		H.E. 198. Hist. Text... 3	
H.E. 188. Adv. Text.. 2		H.E. 102. Needlecraft.. 2		P.S.D. Elective	3
P.S.D. 169. Cost. Des.. 2		H.E. 109. El. of H.E... 5		Soc. 1. Intro.....	5
Psych. 1. General.....	5	B.A. 1. Gen. Econ....	5	Electives	5
Electives	4				

FOURTH YEAR

Phil. 1 or 129. Esthet.. 5		H.E. 160. Adv. Cost.		H.E. 133. Cost. Des... 5	
P.S.D. Elective	3	Des.	3	H.E. 161. Adv. Cost.	
Electives	8	P.S.D. Elective	3	Des.	3
		Electives	10	P.S.D. Elective	3
				Electives	5

Twenty credits of language, literature or history must be elected.

Transfer Students

The following schedules are suggested for graduates of junior colleges, normal schools, and for others who enter the University as juniors with the expectation of completing the Smith-Hughes teacher training curriculum, the institution management curriculum or the textiles, clothing and fine arts curriculum.

For the Smith-Hughes teacher training curriculum or the institution management curriculum, the following courses should have been completed before the junior year: English composition, 10 credits; language, literature or history, 20 credits; general chemistry, 10 credits; physics, 10 credits; psychology, 5 credits; physiology, 5 credits; sociology, 5 credits.

Credits in science must be earned in laboratory courses.

Chemistry 135 and 136, Organic Chemistry, or its equivalent, should be taken in the summer session preceding the junior year or between the junior and senior years.

For the teacher's curriculum, education courses required for the normal diploma must be elected.

Smith-Hughes Teacher Training Curriculum

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
H.E. 25. Textiles.....	3	H.E. 46. Hh. Mgt.....	3	H.E. 46. Hh. Mgt.....	3
H.E. 45. Hh. Mgt.....	3	or		or	
H.E. 115. Food Prep..3 or 5		H.E. 47. Home Furn..	3	H.E. 47. Home Furn..	3
Arch. 1. Arch. Apprec. 2		H.E. 116. Food Prep..	3	H.E. 117. Food Prep..	5
P.S.D. 9. Art. Struct..	3	Nurs. Edu. 5. Ho. Nurs.	2	Bact. 101. General.....	5
		Arch. 2. Arch. Apprec..	2	Edu. 75NA. Spec. Meth.	3
		Zool. 17. Eugenics.....	2		
		Edu. Elective	3		

FOURTH YEAR

H.E. 107. Nutrition....	5	H.E. 108. Nutrition....	5	H.E. 114. Cost. Des....	3
H.E. 112. Cost. Des. 3 or 5		H.E. 113. Cost. Des....	3	H.E. 145. Hh. Econ....	2
H.E. 148. H. Mgt. Hse. 2		H.E. 144. Hh. Econ....	2	H.E. 190. Child. Nutr..	5
Edu. 75NB. Spec. Meth. 3		Edu. 71. Cadet Teach..	3	Edu. 71. Cadet Teach..	5
		Electives	3		

A minimum of nine credits of education is required, which must include Education 60 or 62.

One quarter's residence after graduation is required for the normal diploma; two quarters will be required after September, 1932, and three quarters after September, 1933.

Institution Management Curriculum

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
H.E. 45. Hh. Mgt.....	3	H.E. 26. Textiles.....	3	H.E. 46. Hh. Mgt.....	3
H.E. 115. Food Prep..	3	H.E. 47. Home Furn..	3	or	
P.S.D. 9. Art. Struct..	3	or		H.E. 47. Home Furn..	3
B.A. 2. Gen. Econ....	5	H.E. 46. Hh. Mgt.....	3	H.E. 117. Food Prep..	5
		H.E. 116. Food Prep..	3	Chem. 144. Physiol....	5
		H.E. 124. Inst. Mgt....	3	B.A. 65. Acct. Surv... 5	
		B.A. 106. Mktg. & Adv. 5			

FOURTH YEAR

H.E. 107. Nutrition....	5	H.E. 108. Nutrition....	5	H.E. 121. Inst. Food	
H.E. 120. Food Prep..	3	H.E. 125. Inst. Mktg..	3	Prep.	5
H.E. 122. Inst. Equip..	3	H.E. 144. Hh. Econ....	2	H.E. 123. Inst. Mgt....	3
Bact. 101. General.....	5	H.E. 190. Child Nutr..	5	H.E. 145. Hh. Econ....	2
				H.E. 191. Diet Therapy.	4

For the textiles, clothing and fine arts curriculum, the following courses should have been completed before the junior year: English composition, 10 credits; language or literature or history, 20 credits; general chemistry or physics, 10 credits; psychology, 5 credits; physiology, 5 credits; fine arts, at least 3 credits.

Textiles, Clothing and Fine Arts Curriculum

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
P.S.D. 9. Art Struct..	3	P.S.D. 10. Art. Struc..	3	P.S.D. 11. Art Struct..	3
Arch. 1. Arch. Apprec..	2	P.S.D. 6. Drawing.....	3	P.S.D. 7. Drawing.....	3
H.E. 25. Textiles.....	3	Arch. 2. Arch. Apprec..	2	H.E. 46. Hh. Mgt.....	3
H.E. 45. Hh. Mgt.....	3	H.E. 26. Textiles.....	3	H.E. 47. Home Furn... 3	
H.E. 112. Cost Des...3 or 5		H.E. 46. Hh. Mgt.....	3	H.E. 114. Cost. Des... 3	
		H.E. 47. Home Furn... 3		Electives	3
		H.E. 113. Cost. Des... 3			

FOURTH YEAR

P.S.D. 169. Cost. Des..	2	H.E. 102. Needlecraft..	2	H.E. 133. Cost Des....	5
H.E. 101. Needlecraft..	2	H.E. 109. El. of H.E..	5	H.E. 161. Cost Des....	3
H.E. 188. Adv. Text..	2	H.E. 160. Cost. Des..	3	H.E. 198. Hist. Text... 3	
B.A. 1. Gen. Econ.....	5	P.S.D. 170. Cost. Des..	2	Soc. 1. Intro.....	5
		Phil. 1. Intro.....	5		

A student may major in food and nutrition in the College of Science. The electives must be chosen from related sciences.

B. CURRICULA FOR NURSES

I. ELECTIVE CURRICULA

Graduate students in the department of nursing education may elect a major or minor in any school or college of the University. For information as to number of hours and distribution of work write to the head of the department of nursing education.

II. PRESCRIBED CURRICULA

Group A. Courses leading to a degree of bachelor of science in nursing.

1. Five-year Curriculum

Believing that a broader scientific education is desired by young women entering the nursing profession, the University offers a five-year course in nursing education, including three years at the University and two years at a hospital selected by the University. This course leads to a degree of bachelor of science in nursing and a certificate of nursing.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition..	5	Comp. 2. Composition..	5	H.E. 9. Nutrition.....	6
Nurs. Edu. 1. Hist.Nurs.	2	Chem. 1 or 21. Gen... 5		Chem. 2 or 22. Gen... 5	
Physics 89. Home.....	5	Physics 90. Home.....	5	Psych. 1. General.....	5
Elective	3	Phys. Edu.	1	Phys. Edu.	1
Phys. Edu.	1				

SECOND YEAR

Anat. 100. Gen. Human	3	H.E. 105. Nutrition... 5	H.E. 106. Nutrition... 5
Physiol. 53. Inter....	5	Physiol. 54. Inter....	5
B.A. 2. Gen. Econ....	5	Soc. 1. Intro.....	5
Elective	2	Phys. Edu.	1
Phys. Edu.	1	Prac.	5
		Electives	6

THIRD YEAR

Anat. 101. Gen. Human. 3	Anat. 102. Gen. Human. 3	Bact. 103. Pub. Hyg... 5
Bact. 101. General.... 5	Bact. 102. Sanit..... 5	Electives10
Speech 40. Essen. of	Electives 9	
Speaking 5		
Electives 3		

Curriculum to be Followed in Hospital by Five-Year Nursing Students

	<i>Credits</i>		<i>Credits</i>
Hygiene and Sanitation	2	Modern Social and Health Movements. 3	
Materia Medica	4	Obstetrical Nursing	3
Elementary Nursing Procedure.	6	Mental Nursing	3
Advanced Nursing Procedure.	3	Emergency Nursing	2
Elements of Pathology.	2	Diseases of Eye, Ear, Nose and Throat	2
Medical Nursing (including diseases of skin)	6	Pediatric Nursing	3
Surgical Nursing	3	Nursing Practice	48

2. Four-Year Curriculum

Four years of University work, six quarters of which are taken on the campus and the remaining period in instruction and practice under University direction in an approved hospital school of nursing, leading to a degree of bachelor of science in nursing.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 4. Composition.. 3		Chem. 2. General..... 5		Bact. 101. General..... 5	
Chem. 1. General..... 5		Physics 90. Home..... 5		Comp. 5. Composition.. 3	
Physics 89. Home..... 5		H.E. 9. Nutrition..... 6		Psych. 1. General..... 5	
Nurs. Edu. 1. Hist... 2		Phys. Edu. 1		Phys. Edu. 1	
Phys. Edu. 1					
<i>Summer Quarter</i>		<i>Credits</i>			
Physiol. 53, 54. Inter.....10					
Anat. 100, 101. Gen. Human..... 6					

SECOND YEAR

*Nurs. Edu. 50. Prin & Prac. 5	Nurs. Edu. 60. Prin of Med. 3	Nurs. Edu. 51. Case Study 1
Nurs. Edu. 52. Intro. Hosp. Prac. 6	Nurs. Edu. 62. Hosp. Prac. 6	Nurs. Edu. 61. Prin. of Med. 3
Anat. 105. Path. 3	Nurs. Edu. 70. Prin. of Surg. 3	Nurs. Edu. 71. Prin. of Surg. 3
Phar. 51. Elem. 2	Phar. 61. Pharm. & Ther. 3	Nurs. Edu. 72. Hosp. Prac. 6
Phys. Edu. 1	Phys. Edu. 1	H.E. 191. Nutrition.... 4
<i>Summer Quarter</i>		<i>Credits</i>
Nurs. Edu. 65. Hosp. Prac..... 4		

THIRD YEAR

Nurs. Edu. 64. Spec. Therapy 2	Nurs. Edu. 73. Oper. Room 6	Chem. 131. Organic... 5
Nurs. Edu. 80. Pediatr. 5	Nurs. Edu. 76. E. E. N. & T. 2	Bact. 106. Clin. Diag.. 3
Nurs. Edu. 82. Hosp. Prac. 6	Nurs. Edu. 86. Obstet.. 5	Nurs. Edu. 88. Hosp. Prac. 6
<i>Summer Quarter</i>		<i>Credits</i>
Nurs. Edu. 75. Hosp. Prac..... 4		

FOURTH YEAR

Nurs. Edu. 66. Prv. Med. & Nurs.....	2	Nurs. Edu. 90. Psy- chiatry	5	Two quarters of elective work at University, at least 20 credits of which must be in field of social sciences, literature, history or lan- guages.
Nurs. Edu. 68. Hosp. Prac.	6	Nurs. Edu. 92. Hosp. Prac.	6	
Soc. 1. Intro.....	5	Nurs. Edu. 100. Prof. Prob.	2	
Preferred electives: Nurs. Edu. 102, 103 or 150, 151, 152; Bact. 103, 105; H.E. 103, 105, 106; Psych. 124, 131; Soc. 164, 171; B.A. 1, 2, 103, 120; Hist. 149, 153; Lit. 174, 175, 176.				

* NOTE: Offered in connection with Harborview Hospital under the Rockefeller subsidy, 1931.

3. Curriculum for Graduate Nurses

The University offers this course to enable the graduate nurse to broaden her scientific and cultural background and prepare for advanced professional work. It allows the student a choice of her electives in the fields of public health nursing, nursing administration, or nursing education.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition..	5	Chem. 1 or 21. General.	5	Chem. 2 or 22. General	5
Psych. 1. Intro.....	5	Comp. 2. Composition..	5	B.A. 2. Gen. Econ....	5
Elective	5	Elective	5	Elective	5
Phys. Edu.	1	Phys. Edu.	1	Phys. Edu.	1

Preferred electives: Soc. 1, 63, 62; Zool. 16, 17.

SECOND YEAR

Physiol. 53. Inter.....	5	Physiol. 54. Inter.....	5	Nurs. Edu. 150. Prin.	
H.E. 105. Nutrition....	5	H.E. 106. Nutrition....	5	of Edu.	5
Elective	5	Elective	7	Elective . . .	10
Phys. Edu.	1	Phys. Edu.	1		

Preferred electives: Psych. 101, 114, 131; Speech 40; Soc. 131

THIRD YEAR

Bact. 101. General.....	5	Bact. 102. Sanit.....	5	Bact. 103. Pub. Hyg...	5
Nurs. Edu. 102. Pub. Health	5	Nurs. Edu. 103. Admin.		Elective . . .	11
Elective	5	Pub. Health Nurs....	5		
		Elective	5		

Preferred electives: Soc. 155, 156, 171, 173; Nurs. Edu. 110, 150, 151, 152.

Group B. Courses leading to a certificate in public health nursing.

The broadening of the field of nursing has created a demand on the part of nurses for definite study along lines which experience has shown to be closely interwoven with the problems of the family and the community. A nurse must combine with the technical knowledge she already possesses an understanding of the fundamental principles of economics and the social sciences.

The demand for properly trained and qualified public health nurses is constantly increasing as new fields open through recognition by the public of the economic value of the work. Beginning each quarter of the year the University offers a course in public health nursing which is open to graduate nurses who are deemed qualified for such work, and who wish to broaden their training to take up positions in this specialized line.

1. University Resident Curriculum

This includes three quarters of academic work at the University and one quarter of field work under the University Extension Service.

<i>Credits</i>		<i>Credits</i>	
Nurs. Edu. 102. Public Health.....	5	†Psych. 1. General.....	5
Nurs. Edu. 103. Admin. Pub. Health.....	5	†Psych. 131. Child Psych.....	5
Nurs. Edu. 150. Prin. of Edu.....	5	†Psych. 132. Clinical Psych.....	3
Soc. 175. Social Case Work.....	5	Bact. 103. Public Hygiene.....	5
†H.E. 105-106. Nutrition	10	Field Work	16
†Comp. 1 and 2. Composition.....	10	Total credits required.....	60
†Speech 40. Essen. of Speaking.....	5		

† Electives.

2. Firland Sanatorium Extension Service Curriculum

This includes 36 University credits under the University Extension Service distributed over a two-year period of clinical and field practice, and institutional work. Maintenance and nominal salary are given for part-time professional service, enabling the student to defray her expenses during the course.

<i>Credits</i>		<i>Credits</i>	
Nurs. Edu. E. 102. Public Health....	5	Soc. E. 175. Social Case Work.....	5
Nurs. Edu. E. 103. Admin. Pub. Health	5	Psych. E. 1. General.....	3
H.E. E. 104. Nutrition.....	3	Comp. E. 1. Composition.....	5

Group C. Courses in supervision of nursing specialties.

Executives and students of the field of hospital and nursing administration have frequently expressed the need for supervisors, administrators and teachers who have had advanced education and experience, qualifying them for positions of responsibility in fields of obstetric, pediatric, medical, surgical, psychiatric, and out-patient nursing.

The University is offering a supervisory course for graduate nurses which combines academic courses and professional practice in the major and minors elected from the nursing specialties listed above. This course leads to a certificate in "teaching supervision."

1. University Resident Curriculum

This includes 45 academic credits in scientific, social, and economic subjects at the University, and one year of graded clinical administrative practice in an approved hospital under University direction.

<i>Academic Courses</i>	<i>Credits</i>	<i>Professional Practice</i>
B.A. 2. Gen. Econ.....	5	Review, supervision, and advanced ad-
Soc. 1. Intro.....	5	ministration in classes and practice of
Psych. 1. General.....	5	major and 1st and 2nd minor nursing
H.E. 103. Nutrition for Grad Nurses.	3	specialties elected.
Phar. 101. E. Adv. Pharm and		Major service
Therapeutics	2	1st minor service.....
Nurs. Edu. 150. Princ. Edu.....	5	2nd minor service.....
Nurs. Edu. 152. Supervision.....	5	Adv. Admin.
Nurs. Edu. 153. Administration.....	5	
Electives	10	12 months
	<u>45</u>	

Preferred electives: H.E. 123, 191; Bact. 103; Comp. 1; Soc. 56, 175.

2. Harborview Hospital Extension Service Curriculum

This includes 45 academic credits as listed in the University resident curriculum, given under the University Extension Service, distributed over a two-year period of clinical and field practice and institutional experience. Maintenance and nominal salary are given for part time professional service in the institution, enabling the student to defray her expenses during the course.

A maximum of six credits per quarter on the above curriculum may be carried in addition to the maximum 48-hour week of practice and work in the special department of the hospital. Students with advanced University standing will be able to complete this course in four quarters.

For other graduate nurses the second year of professional work may be taken in advanced administration in elected specialties with a salary graded according to professional service rendered and subject to rule of the institution.

Service Courses. For students in hospital schools of nursing.

1. Preliminary Nursing Course in Basic Sciences

To meet the needs for certain courses in the basic sciences, the University is offering a one-quarter course to students who have entered hospital schools of nursing.

Requirements for entrance: 1. Recommendation of the hospital superintendent. 2. High school graduation.

The curriculum:

	Credits		Credits
Chem. 7. Gen. Chem. for Hosp. Students	5	Anat. 25. Anatomy.....	3
H.E. 9. Nutrition	6	Physiol. 20. Physiol. for Hospital Students	3

2. Senior Nursing Student Extension Courses

Nurs. Edu. E. 101. Intro. to Public Health.....2 credits

For other University departments:

1. Physical Education

P.E. 6-7, or 10. Community Hygiene.....2 or 5 credits

Required of all women students.

2. Home Economics

Nurs. Edu. 5. Home Nursing.....2 credits

Required of prescribed curricula in home economics; open to all women students.

3. Education

Edu. 145. The Health Education Movement.....3 credits

Planned for teachers; open to any student.

C. PRESCRIBED CURRICULUM FOR PHYSICAL EDUCATION FOR MEN

FIRST YEAR

Autumn Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Comp. 1. Composition..	5	Comp. 2. Composition..	5	Speech 40. Essen of	
Soc. 1. Intro.....	5	Zool. 1. Elem.....	5	Speaking	5
Phys. Edu. 80. Intro..	2	Phys. Edu. 90. Pers. &		Zool. 2. Elem.....	5
Elective	3	Gen. Hyg.	2	Elective	5
Military or Naval Sci.		Elective	3	Military or Naval Sci.	
or Phys. Edu.....+		Military or Naval Sci.		or Phys. Edu.....+	
		or Phys. Edu.....+			

SECOND YEAR

Anat. 100. Gen. Human	3	Physiol. 50. For P.E..	6	Zool. 17. Eugenics....	2
Anat. 110. Spec. Dem..	1	Anat. 111. Spec. Dem..	1	Anat. 112. Spec. Dem..	1
Psych. 1. Intro.....	5	Phys. Edu. 110. Ath. Tr.		Phys. Edu. 113. Playgr.	
Phys. Edu. 95. Elem.		& First Aid.....	3	and Com. Recreation	3
Games	2	Phys. Edu. 59. Leader-		Phys. Edu. 115. Physiol.	
Phys. Edu. 58. Leader-		ship	1	of Ex.....	3
ship	1	Elective	5	Phys. Edu. 60. Leader-	
Elective	4			ship	1
				Elective	6

THIRD YEAR

Bact. 103. Pub. Hyg... 5	Phys. Edu. 135. Ind. 2	H.E. 104. Nutrition.... 2
Edu. 60. Sec. Edu.... 3	Gym. 2	Edu. 145G. Health Edu. 3
Phys. Edu. 122. Kines. 3	Phys. Edu. 142. Meth.. 3	Phys. Edu. 136. Ind. 2
Phys. Edu. 141. Meth.. 3	Phys. Edu. 175. Sw. & Div. 2	Gym. 2
Elective 1	Edu. Elective 4	Phys. Edu. 143. Meth.. 3
	Elective 4	Elective 5

FOURTH YEAR

Edu. 70. H.S. Proc.... 5	Edu. 71. Cadet Teach.. 3	Edu. 71. Cadet Teach.. 5
Edu. 71. Cadet Teach.. 5	Phys. Edu. 157. Meth.. 2	Phys. Edu. 150. Admin. 5
Phys. Edu. 156. Meth.. 2	Phys. Edu. 153. Health Edu. 2	Phys. Edu. 158. Meth.. 2
Phys. Edu. 145. Prin.. 3	Edu. 2	Elective 6
Elective 2	Elective 8	

Preferred electives: Phys. Edu. 182; Edu. 120; Soc. 62.

D. PRESCRIBED CURRICULUM FOR PHYSICAL EDUCATION FOR WOMEN

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition.. 5		Zool. 2. Elem..... 5		Comp. 2. Composition.. 5	
Zool. 1. Elem..... 5		Zool. 17. Eugenics.... 2		Phys. Edu. 10. Health Edu. 5	
†Chem. 1. General.... 5		†Chem. 2. General.... 5		Elective 5	
Phys. Edu. 1		Phys. Edu. 100. Surv.. 2		Phys. Edu. 1	
		Phys. Edu. 1			

SECOND YEAR

Anat. 100. Gen. Human 3	Soc. 1. Intro..... 5	Phys. Edu. 113. Playgr. and Com. Recreation 3
Anat. 110. Spec. Dem.. 1	Physiol. 50. For P.E.. 6	Phys. Edu. 115. Physiol. of Ex. 5
Phys. Edu. 111. Rhyth. 3	Anat. 111. Spec. Dem.. 1	Anat. 112. Spec. Dem.. 1
Act. for Small Chil.. 3	Phys. Edu. 112. Elem. Ath. Games..... 3	Bact. 103. Pub. Hyg... 5
Psych 1. General.... 5	Phys. Edu. 1	Elective 2
Speech 43. Spk. Voice.. 3		
Phys. Edu. 1		

THIRD YEAR

Edu. 60. Second. Edu... 3	Phys. Edu. 101. Surv. 3	Phys. Edu. 102.* 5
Phys. Edu. 122. Kines. 3	Gym. 5	Phys. Edu. 164. Meth.. 5
Phys. Edu. 162. Meth.. 5	Phys. Edu. 163. Meth.. 5	Edu. 70. H.S. Proceed.. 4
Elective 4	Elective 8	Edu. Elective 4
		Elective 2

FOURTH YEAR

Phys. Edu. 131. Adapt. Act. 3	Phys. Edu. 132. Adapt. Act. 3	Phys. Edu. 133. Adapt. Act. 3
Phys. Edu. 145. Prin.. 3	Phys. Edu. 153. Meth. Health Edu..... 2	Phys. Edu. 152. Admin. 2
Edu. 71. Cadet Teach.. 3	Edu. 71. Cadet Teach.. 3	Edu. 71. Cadet Teach.. 2
Elective 7	Edu. 75V. Phys. Edu.. 2	Edu. 145G. School Hyg. 3
	Elective 6	Elective 6

In no case can credits in courses Phys. Edu. 57 to Phys. Edu. 97, inclusive, be counted as part of the 180 academic credits for graduation.

A student may also use physical education as a major, following the prescriptions outlined under Elective Curricula, page 157 (curricula with major in one department). The department recommends that any student planning to teach physical education follow the four-year curriculum rather than the curriculum with a major in one department.

For requirements for normal diploma, see page 79.

*Withdrawn.

†Chemistry 1-2 required of students who have not completed a year of chemistry or physics in high school.

E. PRE-MEDICAL CURRICULA

TWO AND FOUR-YEAR CURRICULA PREPARATORY TO MEDICINE

The University offers two curricula preparatory to the study of medicine. One of these is for two years, and will meet the requirements of medical schools which require only two years of college work for admission to their professional study. The second is for four years, and prepares students for those medical schools that require for admission the completion of a full four-year college course. The curricula will not reduce the amount of work to be done by the student in the medical school but they are designed to increase its efficiency.

These courses are also well adapted for pre-dental students, as the best dental schools require the same foundation work as the medical schools.

Below is the outline of the four-year curriculum. The first and second years constitute the two-year curriculum:

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 1 or 21. General.. 5		Chem. 2 or 22. Gen... 5		Chem. 23. Qual. Anal.. 5	
Zool. 3. Pre-medical... 5		Zool. 4. Pre-medical... 5		Physiol. 7. Elem..... 5	
Comp. 1. Composition.. 5		Comp. 2. Composition.. 5		Psych. 1. General..... 5	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....+		or Phys. Edu.....+		or Phys. Edu.....+	

SECOND YEAR

Sci. French or German. 5	Physics 2. General.... 5	Physics 3. General.... 5
Physics 1. General.... 5	Chem. 128. Organic.... 5	Chem. 129. Organic.... 5
Lit. 73. Intro. Mod. Lit. 3	Electives 5	B.A. 2. Gen. Econ.... 5
Electives 2	Military or Naval Sci.	or
Military or Naval Sci.	or Phys. Edu.....+	Pol. Sci. 1. Comp. Govt. 5
or Phys. Edu.....+		Military or Naval Sci.
		or Phys. Edu.....+

THIRD YEAR

Anat. 100. Lecture..... 3	Anat. 102. Gen. Human 6	Anat. 103. Gen. Human 6
Anat. 101. Gen. Human 3	Anat. 106. Hist. & Emb. 6	Anat. 107. Neurology .. 6
Anat. 105. Hist. & Emb. 6	‡Bact. 106. Clin. Diag.. 5	‡Bact. 104. Serology ... 5
‡Bact. 101. General.... 5		

FOURTH YEAR

Physiol. 151. Adv..... 5	Physiol. 152. Adv..... 5	Physiol. 153. Adv..... 5
‡Chem. 161. Physiol... 5	‡Chem. 162. Physiol... 5	Bact. 112. Pathol..... 5
Bact. 105. Inf. Dis.... 5	Electives 6	Anat. 104. Topograph.. 4
		Electives 2

VI. PRE-LANDSCAPE GARDENING CURRICULUM

The climate and flora of this region make it peculiarly fitted for the study of landscape gardening. There are likewise increasing demands for work of this nature. It therefore seems possible and feasible to construct from courses already offered in the University a two-year curriculum for those students who wish to specialize in landscaping. This will enable them to finish the course, such as that offered at the University of California, Cornell University, Iowa State College, Washington State College and Oregon State College, in two years.

‡ Approved electives may be substituted.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Bot. 1. Elem.....	5	Bot. 2. Elem.....	5	Bot. 3. Elem.....	5
P.S.D. 5. Drawing....	3	P.S.D. 6. Drawing....	3	P.S.D. 7. Drawing....	3
Comp. 1. Composition..	5	Comp. 2. Composition..	5	B.A. 2. Gen. Econ....	5
Math. 54. Math. for		Math. 55. Math. for		G.E. 7. Engr. Drawing. 3	
Arch.	3	Arch.	3	Military or Naval Sci.	
Military or Naval Sci.		Military or Naval Sci.		or Phys. Edu.....+	
or Phys. Edu.....+		or Phys. Edu.....+			

SECOND YEAR

Arch. 1. Arch. Apprec..	2	Arch. 2. Arch. Apprec..	2	G.E. 21. Plane Surv...	3
Arch. 4. Arch. Design.	4	Arch. 5. Arch. Design.	4	Bot. 90. Plant Prop...	3
Arch. 7. Graph. Rep...	1	Arch. 8. Graph. Rep...	1	Bot. 92. Orn. Plants...	5
Arch. 112. Freehand		Arch. 113. Freehand		Elective	4
Drawing	2	Drawing	2	Military or Naval Sci.	
B.A. 54. Bus. Law....	3	Speech 40. Essen. of		or Phys. Edu.....+	
Geol. 1. Intro.....	5	Speaking	5		
Military or Naval Sci.		Military or Naval Sci.			
or Phys. Edu.....+		or Phys. Edu.....+			

COURSES OF STUDY

For description of courses, see Departments of Instruction section.

General Note: Each student is to be held either for the admission and graduation requirements of the catalogue under which he enters, or for those of the catalogue under which he graduates.

DEPARTMENTS OF INSTRUCTION

EXPLANATION

This section contains a list of all courses of study offered in the University. The departments are arranged in alphabetical order.

The University reserves the right to withdraw temporarily any course which has not an adequate enrollment at the end of the sixth day of any quarter. For changes in registration, due to withdrawal of a course, no fee will be charged.

The four-quarter plan has been adopted to enable the University to render larger service. It is more flexible than the semester plan and adds 12 weeks' instruction to the regular year. It is impossible, however, to provide that every course be given every quarter.

Courses bearing numbers from 1 to 99 inclusive are normally offered to freshmen and sophomores; those from 100 to 199 to juniors and seniors, and those from 200 upwards to graduate students.

Two or three numbers connected by hyphens indicate a course which ordinarily carries credit only when pursued for the full time; the instructor's permission must be obtained for credit for only a single quarter of such a course. No credit in a beginning foreign language is given for less than two quarters' work.

The credit indicated in connection with each course is the "quarter credit," based on the class period per week.

The descriptions of courses in each department include: (1) the number of the course as used in University records; (2) the title of the course; (3) a brief statement of its subject matter and method; (4) number of quarter credits given; (5) quarter in which it is given (autumn, winter, spring, summer); (6) name of instructor.

Courses preceded by * are not given in 1932-1933.

Courses preceded by ** are given if a sufficient number of students elect them.

DEPARTMENTS OF INSTRUCTION

AERONAUTICAL ENGINEERING

Guggenheim Hall

Professor Eastwood, Executive Officer

101. *Aerodynamics*. Study of air-flow phenomena and of the aerodynamical characteristics of air-foils and air-foil combinations. Prerequisite, junior standing. Three credits; autumn, winter. Eastman.

102. *Advanced Aerodynamics*. Mathematical development of air-foil contours; stability problems for various flight maneuvers; wind tunnel testing of airplane models. Prerequisite, A.E. 101. Three credits; winter, spring. Kirsten, Eastman.

103. *Airplane Performance*. Speed, climb, and stability estimates from theoretical considerations and from model tests. Full scale testing. Prerequisite, A. E. 102. Three credits; spring. Eastman.

111. *Airplane Design*. Layout and design of airplanes. Application of the United States Department of Commerce regulations. Prerequisite, A.E. 101. Three credits; autumn. Miller.

112. *Airplane Design*. Airplane structural details. Design, manufacture, inspection and testing. Prerequisites, A.E. 111, 173. Three credits; winter, spring. J. W. Miller.

121. *Airships*. Study of lighter-than-air craft, aerostatics and airship design. Prerequisite, A.E. 101. Three credits; spring. Kirsten.

141. *Aerial Propulsion*. Study of several methods of screw propeller design; design of a standard screw propeller and performance calculations. Prerequisite, A.E. 101. Three credits; autumn, spring. Kirsten.

142. *Advanced Aerial Propulsion*. Different types of propellers; co-ordination of propeller with vessel; standard propeller test methods. Prerequisite, A.E. 141. Three credits; winter. Kirsten.

*151. *Special Aeronautical Designs*.

161. *Aerial Transportation*. Layout, location, construction and equipment of airways and air terminals. Prerequisite, A.E. 111, 141. Three credits; autumn. Miller.

162. *Aerial Transportation*. Economics of airway location and operation. Economic considerations in the design and selection of aircraft for a given purpose. Prerequisite, A.E. 161. Three credits; winter. Miller.

171. *Aircraft Mechanics*. Parts subjected to simple bending and torsion; graphical solutions; wing truss analysis; ties, struts and connections. Prerequisite, C.E. 132. Three credits; autumn, winter. F. S. Eastman.

172. *Aircraft Mechanics*. A continuation of A.E. 171. Analysis of beams under combined bending and compressive loads. Indeterminate trusses for aircraft. Prerequisite, A.E. 171. Three credits; winter, spring. F. S. Eastman.

173. *Advanced Aircraft Mechanics*. Graphical analysis. Rigid frames and indeterminate structures. Prerequisite, A.E. 172. Three credits; spring. J. W. Miller.

*Not offered in 1932-1933.

181. *Advanced Airplane Design*. Advanced structural analysis and the preparation of final drawings. Prerequisite, A.E. 112. Three credits; spring. Miller.

*190. *Seminar*.

191, 192, 193. *Research*. Two to five credits; autumn, winter, spring. Kirsten.

211, 212, 213. *Research*. Two to five credits; autumn, winter, spring. Kirsten.

ENGINEERING ENGLISH

For courses in Engineering English, see department of English, Comp. B, 100, 102 and Speech 103.

ANATOMY

Anatomy Building

Professor Worcester, Executive Officer

GROSS ANATOMY

25. *Anatomy*. For hospital students. Three credits; autumn, winter, spring. Worcester, Assistants.

100. *Anatomy Lectures*. Three credits; autumn, winter, spring. Worcester.

101, 102, 103. *General Human Anatomy*. For students preparing for medicine, nursing or physical education; open to others. Prerequisites, Zool. 3 and 4 or their equivalent. Three or six credits a quarter; autumn, winter, spring. Worcester, Assistants.

104. *Topographic Anatomy*. Cross and sagittal sections for correlation. Prerequisites, Anat. 101, 102, 103. Four credits; autumn, winter, spring. Worcester.

108. *Special Dissections*. For physicians or students who have completed the above courses in gross anatomy. Credits to be arranged; autumn, winter, spring. Worcester.

110, 111, 112. *Special Demonstrations*. For physical education and bacteriology majors. Credits and hours to be arranged; autumn, winter, spring. Worcester, assistant.

MICROSCOPIC ANATOMY

105, 106. *Histology and Embryology*. Especially for medicine, and nursing students; open to others. Prerequisites, 1 or 3, or their equivalent. Three to six credits for 105 (normal and abnormal microscopic anatomy for Harbor-view students); six credits for 106; autumn, winter. Worcester.

107. *Neurology*. Dissection of the human brain and cord and special organs of sense; comparative developmental history of the central nervous system; a microscopic study of the nuclei and fibre tracts. Prerequisites, Zool. 1 or 3 or their equivalent. Especially for pre-med students but open to others. Six credits a quarter; spring. Worcester.

200. *Research*. Graduate and research work in anatomy for those qualified. Credits and time arranged. Autumn, winter, spring. Worcester.

*Not offered in 1932-1933.

ANTHROPOLOGY

Museum

Instructor Smith, Secretary

51. *General Introduction to Anthropology*. Five credits; autumn, winter, spring. Ray, Jacobs.
52. *General Introduction to Anthropology*. Continued. Five credits; winter. Ray.
101. *Basis to Civilization*. Prerequisite, Anthr. 51 or 52 or junior standing. Three credits; spring. Jacobs.
105. *Culture Growth*. A study of the development of culture elements. Prerequisites, Anthr. 51 or 52 or junior standing. Three credits; spring. Demetracopoulou.
111. *Indian Cultures of the Pacific Northwest*. Three credits; winter. Ray.
112. *Peoples of the Pacific*. Three credits; winter. Jacobs.
- *113. *Peoples of Northeastern Asia*.
- *114. *Peoples of Africa*.
141. *Primitive Literature*. The forms and functions of oral tradition. Three credits; winter, spring. Demetracopoulou.
143. *Primitive Art*. A survey of the aesthetic theories and artistic achievements of pre-literate peoples. Museum specimens will be used for illustrative material. Three credits; spring. Gunther.
150. *General Linguistics*. The anthropological concept of language and its function in culture. Three credits; autumn. Demetracopoulou.
151. *American Indian Languages*. Phonetics and morphology. American Indian languages; methods of field research. Prerequisite, Anthr. 150. Three credits; spring. Jacobs.
185. *Primitive Social and Political Institutions*. Prerequisites, Anthr. 51 or 52. Three credits; autumn. Demetracopoulou.
- 190, 191, 192. *Research*. Independent studies in field or on campus with seminars and conferences. Instructor's permission necessary. Credits and hours to be arranged; autumn, winter, spring. Jacobs, Demetracopoulou.
- 193, 194, 195. *Reading Course*. Directed reading following the student's special interests. Instructor's permission necessary. Credits and hours to be arranged; autumn, winter, spring. Demetracopoulou.
- *197. *Introductory Graduate Course*.
- 204, 205. *Seminar*. Instructor's permission necessary. Three credits; winter, spring. Staff.

*Not offered in 1932-1933.

ARCHITECTURE

Architecture Building

Professor Thomas, Executive Officer

(Member of the Association of Collegiate Schools of Architecture)

All students contemplating the study of architecture should confer with the head of the department as to their special qualifications and reasons for entering the professional study of architecture. A student should have credits in plane geometry, algebra through quadratics, trigonometry, physics, and at least two years of foreign language. Thirty-five credits of foreign language are required for graduation, 15 credits of which are provided in the curriculum.

1-2. *Architectural Appreciation*. Illustrated lectures giving an historic survey of domestic architecture. General appreciation of architecture. Two credits a quarter; autumn, winter. Herrman.

3. *Architectural Appreciation*. Important periods of architectural history, studied, wherever possible, in terms of present day conditions. Two credits; spring. Herrman.

4-5-6. *Elements of Architectural Design*. Problems in elementary architectural design. To be taken with Arch. 7-8-9. Four credits a quarter; autumn, winter, spring. Herrman.

7-8-9. *Graphical Representation*. Elementary principles of orthographic projections, shades and shadows, and perspective. To be taken with Arch. 4-5-6. One credit a quarter; autumn, winter, spring. _____.

40, 41, 42. *Freehand Drawing, Water Color*. Still life studies and outdoor sketching in water color. Prerequisite, major in architecture. Two credits each quarter; autumn, winter, spring. Hill.

47-48. *Elementary Theory of Construction*. Analysis of fundamental structural problems by application of the laws of equilibrium. Three credits a quarter; autumn, winter. May.

51-52-53. *History of Architecture*. Technical study of the architecture of Egypt, Greece, Rome, Byzantium, the Romanesque and Gothic. Prerequisite, Arch. 3. Two credits a quarter; autumn, winter, spring. Thomas.

54, 55, 56. *Architectural Design, Grade I*. Problems in design under individual criticism; order problems and simple problems of buildings. Prerequisite, Arch. 6. Five credits; any quarter; autumn, winter, spring. Gowen, Pries.¹

101-102-103. *History of Architecture*. The Renaissance; a comparative study of the period in European architecture. Prerequisite, Arch. 53. Two credits a quarter; autumn, winter, spring. Herrman.

104, 105, 106, 107. *Architectural Design, Grade II*. Advanced problems in design done under individual criticism. (B.A.I.D. Class B Project). Prerequisite, Arch. Design, Grade I. Five credits; autumn, winter, spring. Herrman.¹

112, 113. *Freehand Drawing*. Studies of casts of the human figure. Charcoal, flat wash, and pencil. Prerequisite, PSD 34. Three credits a quarter; autumn, winter. Pratt.

117. *Building Construction*. General principles of structural design; girders, columns and roof trusses in timber and steel as applied by the architect. Prerequisite, C.E. 130. Three credits; winter. Sergev, May.

¹General criticism and supervision of all courses in Design, Grades I, II, III and Advanced Design, is given by Professor Harlan Thomas, head of the department.

118. *Building Construction*. Principles of concrete design; slab, joists, tile and joist columns, and the like, as applied by the architect. Prerequisite, Arch. 117. Three credits; spring. Sergev, May.

120-121-122. *Working Drawings*. Lectures on simple building construction. Drafting room practice in working drawings. Two credits a quarter; autumn, winter, spring.

125-126. *Pencil Sketching*. Pencil sketches of architectural subjects—the first quarter from photograph, the second from actual subjects. One credit a quarter; winter, spring.

140, 141, 142. *History of Architectural Ornament*. A comparative study of the historic development of architectural ornament. Prerequisite, sophomore standing. Two credits; autumn, winter, spring. Pries.

151. *History of Architecture*. Modern architecture in America and Europe from the middle of the eighteenth century to the present time. Prerequisite, Arch. 103. Two credits; spring. Gowen.

152. *Theory of Architecture*. Theory of architectural design, relation of composition and scale, planning. Class discussions and lectures. Prerequisite, Arch. Design, Grade II. Two credits; autumn. Gowen.

153. *Architectural Materials*. Properties of materials used in architectural construction and practice; steel, concrete, wood, plaster, paint, varnish, and the like. Senior standing. Two credits; winter. Gowen.

154, 155, 156, 157, 158. *Architectural Design, Grade III*. Advanced design under individual criticism. (B.A.I.D. Class A Projet.) Prerequisite, Arch. Design, Grade II. Five credits a quarter; autumn, winter, spring.

159. *Specifications and Office Practice*. Specifications and all contract forms used by the architect; modern business methods, ethics and office organization. Prerequisites, Arch. 122 and 153. Two credits; spring. Alden.

160, 161, 162. *Architectural Problems*. Class A, B.A.I.D. Problems and advanced local problems in design. Prerequisite, Arch. 158. Three to seven credits; any quarter.

170. *Senior Mechanics*. Advanced theory of construction. Structural design of buildings and solution of structural problems in concrete or steel. Two credits; winter.

ASTRONOMY

The Observatory

Assistant Professor Jacobsen, Executive Officer

1. *Astronomy*. The solar system, the stars, and the sidereal universe. Five credits; autumn, spring. Jacobsen.

2. *Principles of Astronomy*. Selected topics in practical astronomy, and motions in the solar system. Prerequisites, Ast. 1, trigonometry; mechanics desirable. Three credits; spring. Jacobsen.

AVIATION

Ground School Course

See Naval Science and Tactics.

¹General criticism and supervision of all courses in Design, Grades I, II, III and Advanced Design, is given by Professor Harlan Thomas, head of the department.

BACTERIOLOGY AND PATHOLOGY

Johnson Hall

Professor Weinzirl, Executive Officer

CO-OPERATING LABORATORIES

- A. U. Simpson, M.D., Director State Board of Health.
 P. C. West, M.D., Director Seattle Department of Health.
 E. D. Clark, Ph.D., Director National Cannery Association.
 A. Balle, M.D., Director Virginia Mason Hospital.
 D. H. Nickson, M.D., Director Swedish Hospital.
 G. A. Magnusson, M.D., Director Physicians' Clinical Laboratory.
 O. G. West, M.D., Director Harborview Hospital Laboratory.

The work in bacteriology provides training along the following lines: (a) as part of a liberal education; (b) as applied to medicine, nursing, pharmacy, fisheries, home economics, sanitary engineering, chemistry; (c) physical education; (d) for the preparation of technicians and bacteriologists; (e) for advanced degrees.

101. *General Bacteriology*. Prerequisite, Chem. 2. Prerequisite for advanced degrees. Five credits; autumn, winter, spring, summer.

Weinzirl, Henry.

102. *Sanitary Bacteriology*. Bacteriology of soil, air, water, sewage, foods, clothing, etc. Prerequisite, Bact. 101. Five credits; winter.

Weinzirl, Henry.

103. *Public Hygiene*. Five credits; lectures only; autumn, spring.

Weinzirl.

104. *Serology*. Types of immunity; immunization of animals and man; study of immune products. Prerequisite, Bact. 101. Five credits; spring.

Hoffstadt.

105. *Infectious Diseases*. Study of the pathogenic bacteria, and methods of diagnosis of infectious diseases. Prerequisite, Bact. 101. Five credits; autumn.

Hoffstadt.

106. *Clinical Diagnosis*. Examination of blood, urine, gastric and intestinal contents, parasites, etc. Prerequisite, Bact. 101. Five credits; winter.

Hoffstadt.

110, 111, 112. *Pathology*. Gross and microscopic study of diseased tissue. Prerequisite, Anat. 105. Five credits; autumn, winter, spring.

Karshner.

120, 121, 122. *Applied Bacteriology*. Work in media room, public health, private, hospital or industrial laboratories. Twenty hours per week. Registration, written report and letter from director required. For bacteriology majors only. Prerequisites, Bact. 102, 104, 105, 106. Five credits; autumn, winter, spring, summer.

Henry.

126, 127, 128. *Journal Survey*. One credit; autumn, winter, spring.

Hoffstadt.

COURSES FOR GRADUATES ONLY

204, 205, 206. *Advanced Bacteriology*. Under this head nearly all types of work can be provided. Time and credit to be arranged. Autumn, winter, spring, summer.

Hoffstadt, Henry.

207, 208, 209. *Seminar*. Two credits; autumn, winter, spring. Staff.

210, 211, 212. *Research*. Open to qualified students after consultation. Credits to be arranged; autumn, winter, spring, summer. Weinzirl and staff.

213, 214, 215. *Tuberculosis Conference*. Open to qualified students after consultation. Autumn, winter, spring. No credit.

Weinzirl.

BOTANY

Johnson Hall

Professor Frye, Executive Officer

SUGGESTED SELECTIONS

For the required biological science in the Colleges of Liberal Arts and Science, only courses 1, 2, 3, 105, 106, 107 will be accepted. Students in the College of Fine Arts desiring to satisfy the science requirements by taking botany may select from this list, or they may include 92. It is recommended that they include 92 where possible.

For a major, courses 105, 106, 107 are required.

For teaching botany, select from non-technical courses, among which 1, 3, 92, 105, 106, 107 are suggested.

1. *Elementary Botany*. Structure and functions of roots, stems, leaves and seeds. Open to students entering with or without botany. Five credits (foresters four); autumn and winter. Rigg and Assistants.

2. *Elementary Botany*. Types of the great groups of plants from the highest to the lowest. Prerequisite, Bot. 1 or one year high school botany. Five credits; winter. Frye and assistants.

3. *Elementary Botany*. Plant analysis; field work with local flora. Open to students entering without botany. Five credits; spring. Frye and assistants.

11. *Foresters' Botany*. Types of plants and their parts. For forestry students only. Four credits; autumn. Hotson and assistants

13, 14. *Pharmacy Botany*. Gross structure of vegetative and reproductive parts of seed plants, brief study of spore plants; microscopy of powdered drugs. Five credits; autumn; four credits, winter. Rigg and assistants

90. *Plant Propagation*. The manner in which plants propagate; the principles underlying it; the illustration of these principles by laboratory methods. Prerequisite, five credits of botany, including 92. Three credits; spring. Hotson.

92. *Ornamental Plants*. The plants used in beautifying lawns and house-yards, their propagation and use. Five credits; spring. Hotson.

105, 106, 107. *Morphology and Evolution*. Morphological study of types to show advances in complexity. Required for all majors unless course 11 is taken in the freshman year. Prerequisites, one year high school botany or ten credits of botany, or Zool. 1 and 2. Five credits a quarter; autumn, winter, spring. Frye and assistants.

111. *Forest Pathology*. Recognition and treatment of common wood destroying fungi. Prerequisite, Bot. 11 or 105. Five credits; spring. Hotson and assistant.

119. *Plant Histology*. Preparation of slides for the microscope; a study of the cells which compose plant bodies. Prerequisite, ten credits of botany. Five credits; autumn. Frye and assistant.

129. *Plant Anatomy*. The cellular structure of plants. The origin and development of the stile. Prerequisite, Bot. 119. Five credits; winter. Frye and assistant.

130. *Taxonomy*. The flowering plants. Prerequisite, 15 credits of botany. Five credits; spring. Frye and assistant.

140, 141, 142. *General Fungi*. Morphology and classification of fungi as a basis for plant pathology. Prerequisite, 15 credits of botany. Five credits a quarter; autumn, winter, spring. Hotson.

143, 144, 145. *Plant Physiology*. Prerequisites, 15 credits of botany and Chem. 22. Desirable prerequisites, Chem. 133 and Physics 2. Five credits a quarter; autumn, winter, spring. Rigg and assistant.

180, 181, 182. *Plant Pathology*. Diseases of plants and the fungi which produce them. Prerequisite, Bot. 142. Five credits a quarter; autumn, winter, spring. Hotson.

199. *Proseminar*. Semi-independent work by students. Open only on consultation with the head of the department. Two to five credits; any quarter. Frye, Rigg, Hotson.

Teachers' Course in Botany. See Education 75B.

COURSES FOR GRADUATES ONLY

200. *Seminar*. Review of recent literature. No fee. Only graduate students may obtain credit. One-half credit per quarter, with maximum of two credits allowed any one student; autumn, winter, spring. Staff.

205, 206, 207. *Physiology of Marine Plants*. Prerequisites, Physics 3, Bot. 145, Chem. 111 and 129 or equivalents. Two lectures, one three-hour laboratory period. Three credits each quarter; autumn, winter, spring. Rigg.

210, 211. *Phytoplankton*. These courses are given at the Friday Harbor laboratories by special arrangement with instructor. Three credits; winter, spring. Phifer.

*220. *Advanced Fungi*.

233. *Research*. Two to five credits; any quarter. Frye, Rigg, Hotson.

247. *Diatoms*. Prerequisite, 30 credits of botany. Three credits; autumn. Frye.

250. *Algae*. Prerequisite, 30 credits of botany. Credits to be arranged; autumn, spring. Frye.

251. *Bryophytes*. Prerequisite, Bot. 106. Credits to be arranged; autumn, winter. Frye.

271, 272, 273. *Experimental Morphology*. Prerequisites, Bot. 106, 145, one year chemistry. Two credits a quarter; autumn, winter, spring. Frye.

279. *Colloidal Biology*. Prerequisites, Bot. 143, Chem. 132. Desirable prerequisites, Chem. 141 and 204. Five credits; any quarter. Rigg.

280. *Micrometabolism*. Prerequisites, 107, 145. Five credits; any quarter. Rigg.

281. *Physiology of the Fungi*. Prerequisites, Bot. 142, 145, 280. Five credits; any quarter. Rigg.

*Not offered in 1932-1933.

CERAMICS

Mines Laboratory

See Mining, Metallurgy and Ceramics.

CHEMISTRY AND CHEMICAL ENGINEERING

Bagley Hall

Professor Benson, Executive Officer

Instruction in this department is designed to satisfy as far as possible the requirements of students who desire to study chemistry as a means of culture and as a necessary complement of a liberal education; but as the subject is eminently practical, it is also the desire of those in charge to guide the student so that he may fit himself for work in lines in which chemistry has become an applied science.

REQUIREMENTS OF THE DEPARTMENT

Students wishing to specialize in chemistry may select one of the three courses: (1) the elective curriculum for those who want a general course in chemistry, leading to the degree of bachelor of science in the College of Science (See College of Science section; (2) the suggested curriculum for those who intend to make use of chemistry as a vocation, leading to the degree of bachelor of science in chemistry (See College of Science section); (3) the prescribed curriculum in chemical engineering for those who plan to engage in manufacturing industries, leading to the degree of bachelor of science in chemical engineering (see College of Engineering section). Courses 7, 8, 9, 10, 37, 38 and 39 may not be counted toward a major in the department.

For purchase of chemicals and apparatus, each student is required to buy a breakage ticket when he obtains his locker key. The cost of the ticket is \$5. Any unused portion will be refunded.

1-2. *General Inorganic Chemistry*. Open only to students not having had accredited high school chemistry. Two lectures, one recitation and two two-hour laboratory periods a week. Five credits a quarter; any quarter.

Smith, Tartar, Powell, Sivertz.

7. *General Chemistry for Hospital Students*. Three recitations and two two-hour laboratory periods. Five credits; autumn, spring.

Benson.

8-9-10. *General Chemistry and Qualitative Analysis*. Open only to pharmacy students. The work in the spring quarter is qualitative analysis. Three lectures and two laboratory periods a week. Five credits a quarter; autumn, winter, spring.

Lynn.

21-22. *General Inorganic Chemistry*. Open only to students having accredited high school chemistry. Two lectures, one recitation and two two-hour laboratory periods a week. Five credits a quarter; any quarter.

Smith, Tartar, Powell, Sivertz.

23. *Elementary Qualitative Analysis*. Prerequisite, Chem. 2 or 22, or equivalent. Two lectures, one recitation and two two-hour laboratory periods a week. Five credits a quarter; any quarter.

Smith, Tartar, Thompson, Powell, Sivertz.

37-38-39. *Organic Pharmaceutical Chemistry*. Organic chemicals of the U.S. Pharmacopoeia. Open only to pharmacy students. Prerequisite, Chem. 10 or its equivalent. Three lectures and two laboratory periods a week. Five credits a quarter; autumn, winter, spring.

Johnson.

52. *Chemical Technology*. Application of mathematics, physics and chemistry to unit chemical operations. Prerequisites, Chem. 23, Physics 1 or 97, and Math. 61. Three lectures. Three credits; autumn, spring. Kobe.

*55. *Forest Products*.

*56. *Forest Soils*.

101. *Advanced Qualitative Analysis*. Two lectures and three laboratory periods a week. Prerequisite, Chem. 23 or its equivalent. Five credits; autumn, spring. Thompson, Robinson.

104. *Food Chemistry*. Methods of analysis of various foods and federal and state laws studied. Prerequisites, Chem. 111 and 129 or equivalent. Two lectures and two laboratory periods a week. Four credits; spring. Norris.

109. *Quantitative Analysis*. Gravimetric analysis. Prerequisite, Chem. 23 or its equivalent. Two lectures and three laboratory periods a week. Five credits; autumn, winter. Thompson, Robinson.

110. *Quantitative Analysis*. Volumetric analysis. Two lectures and three laboratory periods a week. Prerequisite, Chem. 109. Five credits; winter, spring. Thompson, Robinson.

111. *Quantitative Analysis*. Gravimetric and volumetric methods for students not majoring in chemistry. Prerequisite, Chem. 23. Two lectures and three laboratory periods a week. Five credits; autumn, winter, spring. Thompson, Robinson.

*118. *Industrial Chemistry for Engineers*. (Offered every other year, alternating with Chem. 119.) Benson.

*119. *Industrial Chemistry for Engineers*. (Offered every other year, alternating with Chem. 118.)

121, 122, 123. *Industrial Chemistry*. Three lectures and two laboratory periods a week. Prerequisites, Chem. 52, 111 or equivalent. Five credits a quarter; autumn, winter, spring. Benson, Kobe.

128-129. *Organic Chemistry*. For medical, chemical engineering and technical students. Three lectures and two laboratory periods a week. Prerequisite, Chem. 22 or its equivalent. Five credits a quarter; winter, spring. Powell.

131, 132, 133. *Organic Chemistry*. For major students in chemistry and for students in the College of Science. Three lectures and two laboratory periods a week. Prerequisite, Chem. 23, or its equivalent. Five credits; autumn, winter, spring. Dehn.

135-136. *Organic Chemistry*. For home economics students. Only women are admitted. Three lectures and two laboratory periods a week. Prerequisite, Chem. 2 or 22. Five credits a quarter; autumn, winter. Powell.

140-141. *Elementary Physical Chemistry*. Descriptive, non-mathematical, for pre-medic and science students not majoring in chemistry. Two lectures and one laboratory period. Prerequisites, Chem. 111 or equivalent and ten credits of physics. Three credits a quarter; autumn, winter. Sivertz.

144. *Physiological Chemistry*. For fisheries and home economics students. Prerequisite, Chem. 136 or equivalent. Three lectures and two laboratory periods. Five credits; spring. Norris.

150. *Undergraduate Thesis*. Investigation of special topics suggested by

*Not offered in 1932-1933.

the staff. Report must conform to the thesis regulations of the library. Prerequisite, senior standing in chemistry. Two to five credits; any quarter.

152. *Advanced Chemical Technology*. Mathematical study of chemical processes with quantitative solutions of typical engineering problems. Prerequisite, Chem. 172. Three credits; spring. Staff. Kobe.

155. *Oceanographical Chemistry*. Prerequisite, Chem. 111, 132 or equivalent. Three lectures. Three credits; winter. Thompson.

156. *Oceanographical Chemistry*. Laboratory methods. Prerequisite, Chem. 155. One lecture and two laboratory periods. Three credits; spring. Thompson, Robinson.

161-162. *Physiological Chemistry*. For students of medicine, biology, bacteriology, and nutrition. Prerequisites, Chem. 111 and 131 or equivalent. Three lectures and two laboratory periods. Five credits; autumn, winter. Norris.

163. *Physiological Chemistry*. Study of normal and pathological blood and urine. For students of medicine, nurses and clinical technicians. Prerequisites, Chem. 111, 131, 162 or equivalent. One lecture and two laboratory periods. Three credits; spring. Norris.

166. *Biochemical Preparations*. Preparations of special substances involving biochemical methods. Two to three credits; autumn, winter, spring. Norris.

171, 172. *Chemical Engineering*. Unit operations. Three recitations and two laboratory periods. Prerequisites, Chem. 52, 123. Five credits a quarter; autumn, winter. Beuschlein.

173. *Chemical Engineering*. Continuation of Chem. 172. Three lectures a week. Prerequisites, Chem. 52, 123. Three credits; spring. Beuschlein.

176, 177, 178. *Chemical Engineering Thesis*. One to five credits a quarter; autumn, winter, spring. Benson, Beuschlein, Kobe.

181, 182, 183. *Physical and Theoretical Chemistry*. Fundamental principles and theories of chemistry accompanied by physico-chemical measurements. Prerequisites, one year (15 credits) college physics, and Chem. 110. Three lectures and two laboratory periods a week. Five credits a quarter; autumn, winter, spring. Tartar, Sivertz.

*190, 191. *History of Chemistry*. (Offered every other year, alternating with Chem. 205, 206, 207.) Smith.

Teachers' Course in Chemistry. See Education 75C.

COURSES FOR GRADUATES ONLY

200. *Departmental Seminar*. Required of all graduate students during residence. Assigned readings and reports on the chemical literature. One-half credit a quarter; maximum of two credits will be allowed to any student; autumn, winter. Powell.

201, 202, 203. *Advanced Theoretical and Physical Chemistry*. (Offered every other year, alternating with 204, 215, 216.) An advanced course giving a detailed study of different phases of the subject. Prerequisites, one year (15 credits) of college physics, calculus and Chem. 182. Three lectures. Three credits a quarter; autumn, winter, spring. Tartar.

*Not offered in 1932-1933.

*204. *Chemistry of Colloids*. (Offered every other year, alternating with 202, 203.) Three lectures. Three credits. Tartar.

205, 206, 207. *Inorganic Preparations*. (Offered every other year, alternating with 190, 191.) Preparation of special substances involving representative laboratory methods. Any quarter may be taken independently. Two credits; autumn, winter, spring. Smith.

208, 209. *Advanced Quantitative Analysis*. Theoretical principles of analytical chemistry. Prerequisites, Chem. 111 and 182 or equivalent. Two lectures. Two credits a quarter; autumn, winter. Thompson.

211, 212. *Advanced Organic Preparations*. Preparation of special substances involving representative laboratory methods. Either quarter may be taken independently. Two credits; winter, spring. Powell.

*215, 216. *Advanced Theoretical and Physical Chemistry*. (Offered every other year, alternating with 202, 203.)

218, 219, 220. *Selected Topics in Industrial Chemistry*. The application of fundamental chemical and economic principles to typical industries. Prerequisite, graduate standing in chemistry as a major. Two lectures a week. No fee. Two credits; autumn, winter, spring. Benson.

221, 222, 223. *Advanced Inorganic Chemistry*. The third quarter is devoted to the chemistry of the higher order compounds. Recommended for all majors and graduate students. Three credits a quarter; autumn, winter, spring. Smith.

224. *Chemistry of Nutrition*. Enzyme and chemical reactions involved in digestion and metabolism. Prerequisites, Chem. 111 or 110 and 129, or equivalent. Two lectures and one laboratory period. Three credits; autumn. Norris.

*225. *Advanced Quantitative Analysis*.

226, 227. *Micro-analytical Chemistry*. Principles of micro-analysis. One lecture and two laboratory periods. Prerequisites, Chem. 111 and 132 or equivalent. Three credits; autumn, winter. Robinson.

231, 232, 233. *Advanced Organic*. Detailed study of special fields of organic chemistry. Any quarter may be taken independently. Prerequisite, Chem. 129 or equivalent. Three lectures. Three credits a quarter; autumn, winter, spring. Dehn.

236. *Advanced Physical Chemistry Laboratory*. Work adapted to the interest and needs of the students. Prerequisite, Chem. 182. One to five credits and laboratory periods to be arranged; any quarter. Sivertz.

*241, 242, 243. *Advanced Chemical Engineering*. (Offered every other year, alternating with 244, 245, 246.) Three credits a quarter; autumn, winter, spring. Beuschlein.

244, 245, 246. *Advanced Chemical Engineering*. (Offered every other year, alternating with 241, 242, 243.) Evaporation, drying, distillation, absorption and extraction. Three credits a quarter; autumn, winter, spring. Beuschlein.

249. *Graduate Seminar*. Assigned readings and reports dealing with special topics. Offered as desired by members of the different divisions of the department. Hours and credits to be arranged; autumn, winter, spring. Staff.

*Not offered in 1932-1933.

250. *Research.* The work in research is of three types: (1) special investigations by advanced students under direction of members of the staff; (2) research for the master's degree; maximum, nine credits; (3) research for the doctor's degree under direction of any member of the senior staff of the department. Maximum, 45 credits. Staff.

ENGINEERING ENGLISH

For courses in Engineering English, see department of English, Comp. B, 100, 102 and Speech 103.

CIVIL ENGINEERING

Guggenheim Hall

Professor Tyler, Executive Officer

53. *Mine Surveying.* Special survey methods for underground surveying. Observation for meridian; mining claim survey and topography. For mining engineers. Prerequisite, G.E. 21. Three credits; winter. Chittenden.

*54. *Topographic Surveys.*

55. *Forest Surveying.* Practice with chain, compass and level. Use of bearings and distances in mapping. For forestry students. Two credits; spring. Chittenden, Hawthorn.

56. *Forest Surveying.* Plane surveying with reference to work in forestry. Orientation. Given at Pack Forest. Prerequisite, C.E. 55. Five credits; spring. Chittenden.

57. *Transportation Surveying.* Curves and earthwork. Complete survey notes and map for highway or railway grading project. Prerequisite, G.E. 21. Four credits; autumn. Hawthorn, Chittenden.

58. *Transportation Engineering.* Grading, balancing of earthwork quantities. Profile, mass diagram and estimate for highway or railway grading project. Prerequisite, C.E. 57. Four credits; winter. Hawthorn, Chittenden.

59. *Advanced Surveying.* Base line measurement; triangulation; precise leveling; determination of azimuth, latitude and time; plane table; hydrographic surveying. Prerequisite, G.E. 21. Four credits; spring. Hawthorn, Chittenden.

106. *Sanitation and Plumbing.* For architects. Two credits; winter. Huan.

121. *Roads and Pavements.* Location, construction and maintenance of roads and pavements. Materials and accessories. Prerequisite, C.E. 58. Three credits; spring. Hawthorn.

123. *Highway and Railway Economics.* Economics of highway and railway location, construction and maintenance. Prerequisite, C.E. 121. Three credits; winter. Hawthorn.

124. *Highway Design.* Selection and design of pavements. Pavement subgrades. Plans, specifications and estimates. Prerequisite, C.E. 121. Three credits; autumn. Hawthorn.

128. *Transportation Administration.* Highway and railway organization, operation and finance. Prerequisite, C.E. 123. Three credits; spring. Hawthorn.

* Not offered in 1932-1933.

130. *Theory of Building Construction*. For architects. Three credits; autumn. May.

131. *Mechanics*. Fundamental principles of mechanics for non-civil students. Kinetics, kinematics. Prerequisites, Math. 62, Physics 97. Three credits; autumn, winter, spring.

A. L. Miller, Farquharson, Moritz, Hawthorn, Smith, Sergev.

132. *Mechanics*. Mechanics of materials for non-civil students. Analysis and design of structural members. Prerequisite, C.E. 131. Three credits; autumn, winter spring.

A. L. Miller, Farquharson, Collier, Hawthorn, Smith, Sergev, Moritz.

135. *Mechanics*. (For students in civil engineering only.) Fundamentals of static and dynamic equilibrium. Kinematics. Prerequisites, Math. 61, Physics 97, G.E. 12. Three credits; winter. A. L. Miller, Rhodes.

136. *Mechanics*. (For students in civil engineering only.) Mechanics of materials. Fundamentals of structural mechanics. Prerequisite, C.E. 135. Three credits; spring. A. L. Miller, Rhodes.

142. *Hydraulics*. Flow of water through pipes, orifices, over weirs and in open channels; energy of jets with application to impulse wheels. Prerequisite, C.E. 131. Five credits; autumn, winter, spring.

Harris, Wilcox, Van Horn, Smith.

143. *Hydraulic Engineering*. Complete projects presenting hydraulic engineering; hydrometric methods; economic design of pipes and spillways. Prerequisite, C.E. 142. Five credits; winter. Harris, Van Horn.

145. *Hydraulic Machinery*. Development and theory of water wheels and turbine pumps; design of a reaction turbine; hydrostatic machinery and dredging equipment. Prerequisite, C.E. 142. Three credits; autumn. Harris.

147. *Hydraulic Power*. Investigation of power development; generation of power; penstocks and turbines; types of installation. Prerequisite, C.E. 142. Three credits; spring. Harris.

150. *Sanitary Engineering*. Relation of biology, bacteriology and chemistry to water supply and sewage, with problems affecting the public health. Industrial hygiene. Prerequisite, Chem. 23. Three credits; spring. Van Horn.

154. *Sanitary Designs*. The design of sewers, sewage disposal plants and water purification plant. Prerequisite, C.E. 155 and 158. Three credits; spring. Tyler.

155. *Water Supply Problems*. Design, cost estimation, construction, operation and maintenance of water supplies, distribution systems and purification plants. Prerequisites, C.E. 142, 150. Three credits; winter. Tyler.

157. *Reclamation*. Reclamation of land by drainage and levees. Elements of irrigation engineering. Prerequisite, C.E. 142. Three credits; autumn. Van Horn.

158. *Sewerage and Sewage Treatment*. Design and operation of sewage systems and disposal plants. Refuse collection and disposal. Prerequisites, C.E. 150, 142. Three credits; autumn. Tyler.

159. *Drainage, Waterways, and Flood Control*. Advanced study of large area drainage in connection with flood control. The design of artificial waterways. Prerequisite, C.E. 143. Two credits; spring.

Harris, Van Horn.

162. *Materials of Construction.* Investigating strength and physical characteristics of Portland cement and concrete. Designing concrete mixtures. Prerequisite, C.E. 132. Three credits; autumn. Collier.

163. *Materials of Construction.* Strength and physical characteristics of timber and steel. Prerequisite, C.E. 132. Three credits; winter. Collier.

171. *Structural Analysis.* Reinforced Concrete—Investigation of the stresses in reinforced concrete structures and structural members. Prerequisite, C.E. 132. Three credits; autumn. A. L. Miller, More, Rhodes.

172. *Structural Analysis.* Steel—investigation of the stresses in riveted and welded steel structures and structural members. Prerequisites, C.E. 171, or permission. Three credits; winter. A. L. Miller, More, Rhodes.

173. *Structural Analysis.* Timber—Investigation of the stresses in timber structures and structural members. Prerequisite, C.E. 172, or permission. Three credits; spring. A. L. Miller, More, Rhodes.

175. *Structural Design.* Reinforced Concrete—Design of reinforced concrete structures and structural members. Prerequisite, C.E. 173. Four credits; autumn. More.

176. *Structural Design.* Steel—Design of welded and riveted steel structures and structural members. Prerequisite, C.E. 175. Four credits; winter. More.

177. *Structural Design.* Timber—Design of timber structures and structural members. Prerequisite, C.E. 176. Three credits; spring. More.

181, 182, 183. *Advanced Structural Analysis.* Stresses and deflections in structures and structural members with particular reference to statically indeterminate cases. Seniors and graduates. Three credits; autumn, winter, spring. More.

185, 186, 187. *Advanced Structural Design.* Design of structures. Arches. Statically indeterminate trusses. Seniors and graduates. Four credits; autumn, winter, spring. More.

192, 194, 196. *Research.* Two to five credits; autumn, winter, spring. Staff.

198. *Thesis.* Three to six credits; autumn, winter, spring. Staff.

199. *Engineering Relations.* A study of business relations and economic conditions involved in engineering projects. Prerequisite, senior standing. Three credits; spring. May.

COURSES FOR GRADUATES ONLY

210, 212, 214. *Research.* For graduates. Two to five credits; autumn, winter, spring. Staff.

ENGINEERING ENGLISH

For courses in Engineering English, see department of English, Comp. B, 100, 102 and Speech 103.

CLASSICAL LANGUAGES AND LITERATURE

Denny Hall

Professor Sidey, Executive Officer

For administrative purposes Greek and Latin are combined, but students must major in one or the other.

To satisfy the requirement of ten hours in ancient life and literature, the following courses may be used: Greek 1-2, 11, 13, 15-16, 17 and Latin 4-5, 11, 13. Students are advised not to combine Greek 17 with Greek 11 or Latin 11.

I. GREEK

Requirements for a Major. At least 36 credits chosen from courses other than 1-2, 11, 13, 15-16, 17. At least 50 per cent of the credits in the major must be in upper division courses. A student majoring in Greek must have had at least two years of high school Latin or must take Latin 1-2, 3 in the University, and is advised to secure a reading knowledge of German. At the conclusion of the senior year all major students must take the senior examination.

1-2, 3. *Elementary Greek.* Five credits a quarter, beginning autumn.

Densmore.

4, 5. *Socrates.* A study of the life and personality of the philosopher, based on Plato, Xenophon, Aristophanes. Prerequisite, Greek 3. Three credits; autumn, winter.

Densmore.

6. *The World of Homer.* Readings from the story of Achilles. Prerequisite, Greek 5. Three credits; spring.

Densmore.

11. *Greek Civilization.* Knowledge of Greek not required. Five credits; spring.

Densmore.

13. *Greek Literature.* Knowledge of Greek not required. Five credits; autumn, spring.

Sidey.

15-16. *Greek Civilization and Literature.* Duplication of Greek 11 and 13. Knowledge of Greek not required. Open to freshmen only. Five credits; autumn and winter.

Densmore.

17. *Greek and Roman Art.* Five credits; autumn.

Sidey.

51. *Greek Authors.* Practice at sight-reading from a wide range of authors. Prerequisite, Greek 5. No credits. One hour weekly throughout the year.

Densmore.

101. *The Persian War Period.* Readings in Herodotus and Plutarch. Prerequisite, Greek 5. Three credits; autumn.

Densmore.

102. *Pericles and the Peloponnesian War.* Aristotle, Thucydides, Xenophon and Plutarch. Three credits; winter.

Densmore.

103. *Periods of Theban and Macedonian Supremacy.* Plutarch, Demosthenes and Arrian. Three credits; spring.

Densmore.

*104, 105, 106. *Greek Poetry.*

122. *Grammar and Composition.* Intensive review of the entire grammar with practice in writing. Prerequisite, one upper division course. Three credits; winter.

Densmore.

*Not offered in 1932-1933.

*151, 152, 153. *Plato*.

191, 192, 193. *Literary Criticism and Sophocles*. Textual criticism. Aristotle and other ancient critics. Independent critical study of one play. Prerequisite, 106. A reading knowledge of Latin required. Three to five credits. Densmore.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Greek Philosophy*. The pre-Socratics; ethical writings of Plato and Aristotle; later developments down to the Neo-Platonists. Three to five credits; autumn, winter, spring. Densmore.

221, 222, 223. *Epigraphy*. Preliminary study and practice; inscriptions in fifth century Athenian history; Greek social life. Five credits; autumn, winter, spring. Densmore.

II. LATIN

Requirements for a major: At least 36 credits, chosen from courses other than 1-2, 3, 4, 5, 6, 11, 13. At least 50 per cent of the credits in the major must be in upper division courses. A student majoring in Latin must take at least 15 credits of Greek, preferably in the first two years. At the conclusion of the senior year all major students must take the senior examination.

1-2, 3. *Elementary Latin*. First and second year high school Latin. Five credits; autumn, winter, spring. Stone.

4, 5, 6. *Cicero and Vergil*. Prerequisite, two years high school Latin or Latin 1-2, 3 in the University. Qualifies a student for Latin 21. Review of grammar and syntax. Five credits; autumn, winter, spring. Ballaine.

11. *Roman Civilization*. Knowledge of Latin not required. Five credits; winter, spring. Sidey, Read.

13. *Roman Literature*. Knowledge of Latin not required. Five credits; autumn, winter. Read.

NOTE: To enter Latin 21 to 25, the student is expected to be thoroughly familiar with the declensions and conjugations and with the normal phenomena of Latin syntax to be found in Caesar, Cicero and Vergil.

21. *Cicero: De Senectute; Latin Literature*. (Mackail.) With exercises in grammar and composition. Prerequisite, three and one-half years high school Latin. Five credits; autumn. Read.

*22. *Catullus*.

*23. *Vergil: Georgics and Bucolics*.

24. *Sallust: Jugurtha; Latin Literature* (Mackail). With exercises in grammar and composition. Prerequisite, three and one-half years high school Latin. Five credits; spring. Sidey.

25. *Ovid: Metamorphoses; Latin Literature* (Mackail). Exercises in grammar and composition. Prerequisite, three and one-half years of high school Latin. Five credits; winter. Read.

100. *Livy*. One book and selections from other books. Prerequisites, Latin 21, 22, 24, or special permission. Five credits; autumn. Stone.

*Not offered in 1932-1933.

101. *Horace*. Selections from the complete works. Prerequisite, Latin 21, 22, 24, or special permission. Five credits; winter. Stone.

*102. *Tacitus*.

103. *Plautus and Terence*. Selected plays. Prerequisites, Latin 21, 22, 23, or special permission. Five credits; spring. Stone.

*104. *Martial*.

106. *Syntax and Prose Composition* (Advanced). Students should, if possible, register for this course in combination with Edu. 75P. Prerequisite, Latin 100 or 101 or 102, or equivalent. Three credits; autumn. Stone.

107. *Cicero's Letters*. Prerequisite, Latin 100 or equivalent. Three credits; winter. Stone.

*109. *Pliny's Letters*.

113. *Roman Home Life and Religion*. Selections from Rogers and Harley's text. Prerequisite, Latin 100 or equivalent. Three credits; spring. Stone.

150. *Juvenal*. Selected satires. Prerequisite, Latin 109 or equivalent. Two to five credits; autumn. Sidey.

154. *Lucretius: De Rerum Natura*. Prerequisite, Latin 109 or equivalent. Two to five credits; winter. Sidey.

155. *Cicero: De Oratore*. Book I. Prerequisite, Latin 109 or equivalent. Two to five credits; spring. Sidey.

160, 161, 162. *Major Conference*. Discussion with members of the staff of various features of Greek and Roman life and literature not specifically dealt with in other courses. Required of all majors. One credit each quarter. Staff.

COURSES FOR GRADUATES ONLY

NOTE: One of the three courses, 208, 285, 287, will be given in the winter quarter; and one of the four courses, 201, 240, 286, 288, will be given in the spring quarter, according to demand.

201. *Historical Latin Grammar*. A brief survey of the development of the Latin language. Prerequisite, completion of an undergraduate Latin major or equivalent. Two to four credits; spring (see note). Stone.

204. *Tacitus*. Histories I-II. Two to five credits; spring. Read.

*207. *Seneca*.

208. *Vergil: Aeneid*. Books VII to XII. Prerequisite, completion of an undergraduate major or special permission. Two to four credits; winter (see note). Stone.

*211. *Latin Novel*.

213. *Latin of the Italian Humanists*. Selection by Gragg. Two to five credits; autumn. Sidey.

*216. *Christian Latin*.

220. *Latin Elegy*. Harrington's Selections with a study of the history of elegy. Two to five credits; winter. Sidey.

*Not offered in 1932-1933.

240. *Relations of Latin to English and the Romance Languages.* Prerequisites, Latin 100, or equivalent, and French, Spanish, or Italian 101, or satisfactory equivalent. Two credits; spring (see note). Stone.

285, 286. *Vulgar Latin.* Prerequisites, completion of work in Latin and at least one Romance language, satisfactory to instructor. Three to five credits; winter, spring (see note). Stone.

287, 288. *Medieval Latin.* Prerequisite, same as for 285, 286. Three to five credits; winter, spring (see note). Stone.

ECONOMICS AND BUSINESS ADMINISTRATION

Commerce Hall

Professor Coon, Executive Officer

(B.A. 1 is not a prerequisite for B.A. 2. B.A. 2 is a prerequisite for all other courses in economics and business administration except 3, 7, 54, 55, 56, 57, 59, 65.)

1. *General Economics.* A descriptive analysis of modern economic institutions. Nature and evolution of economic problems. Five credits; autumn, winter, spring, summer. Cox.

2. *General Economics.* The elementary principles of economic theory. Production, value and price, money and banking, international trade, functional and personal distribution. Five credits; autumn, winter, spring, summer. Smith.

3. *General Economics.* Same as B.A. 2 above, abbreviated for students in chemistry, pharmacy, forestry and engineering. Three credits; autumn, spring. Gould.

7. *Economic Geography.* The environmental laws underlying the distribution of the major classes of raw materials; factors locating industries; geographic laws of trade. Five credits; autumn, winter, spring. Renner, Martin, Seeman.

54. *Business Law.* Designed to give the fundamentals of those branches of law which bear most closely upon the ordinary business transactions. Prerequisite, sophomore standing. Three credits; autumn, winter, spring. Brown, Harsch.

55. *Business Law.* Continuation of B.A. 54. Prerequisite, B.A. 54. Three credits; autumn, winter, spring. Brown, Harsch.

56. *Business Law.* Continuation of B.A. 55. Prerequisites, B.A. 54 and 55. Three credits; autumn, winter, spring. Brown, Harsch.

57. *Practical Business Relations.* Offered to those unable to devote nine hours to business law; should be taken in preference to B.A. 54 by those contemplating but one quarter of law. Students electing B.A. 57 may not receive credit for B.A. 54. Prerequisite, sophomore standing. Five credits; autumn, winter, spring. Brown.

59. *Graphic and Tabular Analysis of Business Problems.* Application of statistical method to business and economic problems. Five credits; autumn. Mackenzie.

62. *Principles of Accounting.* Five credits; autumn, winter, spring. Butterbaugh and assistants.

63. *Principles of Accounting.* Prerequisite, B.A. 62. Five credits; autumn, winter, spring. Draper, Hamack and assistants.

64. *Principles of Accounting*. Interpretation of accounting standards and measures. Analysis of financial statements from management standpoint. Prerequisite, B.A. 63. Five credits; autumn, winter, spring.

Gregory and assistants.

65. *Accounting Survey*. A service course for students in other colleges who have only one quarter available for accounting. Not open to business administration students and may not be offered as a substitute for any required accounting course. Five credits; autumn, winter, spring.

Van de Walker.

100. *Economic and Industrial Development of the United States*. Five credits; winter.

Coon.

101. *Management of Business Enterprise*. A general non-technical study of the executive control of business which will stress the economic aspects of management. It may be considered as introductory to the applied courses in merchandising, transportation, finance, accounting and business technology. Five credits; autumn, spring.

Mackenzie.

103. *Money and Banking*. Introductory course. Five credits; autumn, winter, spring.

Preston.

104. *Economics of Transportation*. A general survey of the history, development and present economic significance of the various important forms of transportation. Open to sophomores. Prerequisite, B.A. 2. Five credits; autumn, winter, spring.

Farwell.

105. *American Labor Problems*. Not open to students who have credit in B.A. 60. Five credits; autumn, winter, spring.

McMahon.

106. *Economics of Marketing and Advertising*. Five credits; autumn, winter, spring.

Burd.

108. *Economics of Insurance*. Not open to students who have credit in B.A. 141. Five credits; autumn.

109. *Economics of Real Estate*. Economic principles underlying the utilization of land; forces influencing the growth and structure of cities. Not open to students who have credit in B.A. 164. Open to students who received credit in B.A. 109 before October 1, 1932. Five credits; autumn, spring.

Demmery.

*110. *Advanced Accounting*.

111. *Advanced Accounting I*. Prerequisite, B.A. 64. Five credits; autumn, winter, spring.

Draper.

112. *Advanced Accounting II*. Prerequisite, B.A. 111. Five credits; winter, spring.

Cox, Draper.

115. *Business Correspondence*. Analysis of principles; development of judgment on points of business policy. Prerequisites, Comp. 1 and junior standing. Five credits; autumn, winter, spring.

Van de Walker.

117. *Commercial Education*. This course is required of all commercial teaching majors and is not open to other students. Prerequisites, one year each of high school shorthand and typewriting, or equivalent. Five credits to commercial teaching majors only; autumn.

Hamack.

118. *Commercial Education*. Continuation of B.A. 117. Prerequisite, B.A. 117. Five credits to commercial teaching majors only; winter.

Hamack.

119. *Business Ethics*. An examination of the efforts to develop and enforce a code of ethics consistent with the fundamental principle that business is conducted for profits. Two credits; autumn, winter, spring.

Dakan.

*Not offered in 1932-1933.

120. *Business Organisation*. Five credits; autumn. Dakan.
121. *Corporation Finance*. Prerequisites, B.A. 62, 103. Five credits; autumn, winter. Dakan.
122. *Principles of Investment*. Prerequisite, B.A. 121. Five credits; winter, spring. Dakan.
124. *Public Finance*. The growth and fundamentals of public expenditures in modern times. Prerequisite, B.A. 103. Five credits; autumn. Hall.
125. *Advanced Money and Banking*. Presupposes a knowledge of our existing financial organization and devotes attention to questions of banking and monetary policy. Each student makes a special study of a selected subject and prepares a term paper thereon. Not open to students who have credit in B.A. 159. Open to students who received credit in B.A. 125 before October 1, 1932. Prerequisite, B.A. 103. Five credits; spring. Preston.
126. *Commercial Credit*. Prerequisite, B.A. 64, 103. Five credits; autumn. Draper.
127. *Foreign Exchange and International Banking*. Prerequisite, B.A. 103. Five credits; autumn. Skinner.
129. *Taxation*. The economic principles basic to problems in taxation in national, state and local governments. Prerequisite, B.A. 124. Five credits; winter. Hall.
130. *Industrial Management*. The manager's use of technology. The important industrial factors used in controlling physical operating conditions. Prerequisite, B.A. 7. Five credits; autumn, winter. McIntyre.
131. *Economics of Public Utilities*. The fundamental economic theory underlying public utility industries. Five credits; autumn. Hall.
132. *Management of Public Utilities*. Special attention to Pacific Coast conditions. Prerequisite, B.A. 131. Five credits; winter. Hall.
133. *Control of Public Utilities*. Legislative and administrative problems of regulation. Prerequisite, B.A. 132 or 120 credits. Five credits; spring. Hall.
134. *Wholesaling*. Prerequisite, B.A. 106. Five credits; autumn. Miller.
135. *Retailing*. Prerequisite, B.A. 106. Five credits; winter. Miller.
136. *Advertising*. Prerequisite, B.A. 106. Five credits; spring. Miller.
137. *Problems in Wholesaling*. Individual and group study. Required business contacts. Prerequisites, B.A. 134, 135, 136 and consent of instructor. Five or ten credits each quarter with a maximum of 15 credits for the course; autumn, winter, spring. Burd, Miller.
138. *Problems in Retailing*. Individual and group study. Required business contacts. Prerequisites, B.A. 134, 135, 136 and consent of the instructor. Five or ten credits each quarter with a maximum of 15 credits for the course; autumn, winter, spring. Burd, Miller.
139. *Problems in Advertising*. Individual and group study. Required business contacts. Prerequisites, B.A. 134, 135, 136 and consent of the instructor. Five or ten credits each quarter with a maximum of 15 credits for the course; autumn, winter, spring. Burd, Miller.
140. *The Co-operative Movement*. Prerequisite, B.A. 106. Five credits; winter.

143. *Railway Transportation*. An intensive analysis of the economic principles of railway transportation. Not open to students who have credit in B.A. 150; open to students who have credit in B.A. 143 previous to October 1, 1932. Prerequisite, B.A. 104. Five credits; winter. Gould.

144. *Water Transportation*. The economic principles basic to water transportation. Special attention will be directed to Pacific Coast shipping conditions and problems. Not open to students who have credit in B.A. 119; open to students who have credit in B.A. 144 previous to October 1, 1932. Prerequisite, B.A. 104. Five credits; autumn. Gould.

145. *World Trade*. Economic conditions of the countries of the world; their trade with one another and particularly with the United States. Not open to students who received credit in B.A. 143, 144 or 145 before October 1, 1931. Prerequisites, B.A. 7 and 104. Five credits; autumn, winter. Skinner.

146. *Principles of Exporting and Importing*. Not open to students who have credit in B.A. 116 previous to October 1, 1932, or in B.A. 117 or 118 previous to October 1, 1931; open to students who received credit in B.A. 146 before October 1, 1932. Prerequisite, B.A. 145. Five credits; winter, spring. Skinner.

149. *Marine Insurance and Carriers' Risks*. Prerequisite, B.A. 143 or 144. Five credits; autumn. Farwell.

150. *Transportation Rates*. The theory underlying rate construction. Not open to students who have credit in B.A. 151; open to students who have credit in B.A. 150 previous to October 1, 1932. Prerequisite, B.A. 143 or 144. Five credits; winter. Gould.

151. *Industrial Traffic Management*. Not open to students who have credit in B.A. 107; open to students who have credit in B.A. 151 previous to October 1, 1932. Prerequisite, B.A. 150. Five credits; spring. Farwell.

152. *Ports and Terminals*. Special needs of rail, water, motor and air carriers as to port and terminal facilities. Not open to students who have credit in B.A. 113; open to students who have credit in B.A. 152 previous to October 1, 1932. Prerequisite, B.A. 151. Three credits; winter. Farwell.

153. *Business Administration of Transportation*. Open only to majors in transportation who will be placed in part-time contact with transportation agencies under the supervision of the field director in charge. Prerequisite, fulfillment of all major requirements and senior or graduate standing. Five credits; spring. Gould.

154. *Cost Accounting I*. Prerequisite, B.A. 64. Five credits; winter. Gregory.

155. *Cost Accounting II*. Prerequisite, B.A. 154. Five credits; spring. Gregory.

156. *Auditing*. Prerequisite, B.A. 112. Five credits; autumn. Cox.

157ABC. *Problems in Accounting*. The particular problems which will be selected for consideration in any given quarter will depend upon the needs of the students electing the course for that quarter. Prerequisite, B.A. 112. Five credits; autumn or winter or spring. McConahey, Davis.

158. *C.P.A. Problems*. Work taken from American Institute and state C.P.A. examinations. Not open to students with credit in B.A. 185. Open to students with credit in B.A. 158 before October 1, 1932. Prerequisite, B.A. 156. Five credits; spring. McConahey.

160. *Advanced Economics*. Economic thought centering about the neo-classical theories of value and distribution and the validity of this thought under present conditions. Prerequisite, 120 credits. Five credits; autumn, winter, spring. Coon.

161. *Economics of Labor.* The labor factor in the development of economic thought. A critical study of current theories. Prerequisite, B.A. 105. Five credits; autumn. McMahon.

162. *European Labor Problems.* Economic and political backgrounds, in relation to types of labor organizations. Prerequisite, B.A. 105. Five credits; spring. McMahon.

168. *Development of Economic Thought.* The contributions of the classical and neo-classical economists and their contemporary critics. Prerequisite, B.A. 160. Five credits; winter. Coon.

169. *Applied Economics of Real Estate.* Prerequisite, B.A. 109. Five credits; winter. Demmery.

170. *Applied Economics of Insurance.* Application of the general principles to the various forms of insurance. Not open to students who have credit in B.A. 142. Prerequisite, B.A. 108. Five credits; spring. _____.

173. *International Commercial Policies.* Prerequisite, B.A. 146. Five credits; spring. Skinner.

175. *The Business Cycle.* Analysis of present business conditions; investigation of the causes of business fluctuations. Prerequisite, B.A. 103. Five credits; autumn, winter. Demmery.

176. *Investment Analysis.* An analytical study of typical industrial, public utility and railroad securities. Prerequisites, B.A. 64 and 122. Five credits; spring. Dakan.

177. *Business Forecasting.* The use and appraisal of business statistics; investigation of a number of the important forecasting services. Prerequisite, B.A. 175. Five credits; spring. Demmery.

181. *Economics of Consumption.* Historical development of human wants in relation to the economic laws of consumption. Attempts to control consumption. Prerequisite, B.A. 105. Five credits; winter. McMahon.

189. *Bank Credit Administration.* The administration of bank credit based on actual problems selected from portfolios of Pacific Northwest banks. Prerequisite, B.A. 125. Three credits; winter. Truax.

191ABC. *Research in Management.* Prerequisite, consent of instructor. Three credits; autumn, winter, spring. Gregory.

195ABC. *Research in Foreign Trade.* Prerequisite, consent of instructor. Three credits; autumn, winter, spring. Skinner.

196ABC. *Research in Public Utilities.* Prerequisite, consent of instructor. Three credits; autumn, winter, spring. Hall.

COURSES FOR GRADUATES ONLY

204AC. *Graduate Seminar in Economics.* For graduate students whose major interest is in the field of economic theory and its history, economic history, or in the fundamental principles underlying some field in applied economics. Students electing this course will be expected to devote approximately half of their time to it. They will read widely and critically and will undertake research in the field of their major interest. There will be class discussions and reports as well as individual conferences. Prerequisites, B.A. 160, 168 or the equivalent, and consent of the instructor. Seven credits each quarter; autumn, spring. Coon.

206AB. *Graduate Seminar in Finance.* For students interested in monetary and banking theory, international finance, and public finance. Students

electing this course will be expected to devote approximately half of their time to it. Assigned reading, individual research and conferences will be included. Prerequisites, B.A. 103, at least one other advanced course in finance, and consent of the instructor. Seven credits each quarter; autumn, winter, Preston.

208ABC. *Graduate Seminar in Labor*. Theories and problems. Class reports and individual conferences in the field of research. Prerequisites, at least one advanced course in labor, and consent of instructor. Three credits each quarter; autumn, winter, spring. McMahon.

TEACHERS' COURSES IN BUSINESS ADMINISTRATION

Edu. 75E. *Commercial Teachers' Course*. Five credits (two credits only count in education); spring. Draper.

Edu. 75F. *Teachers' Course in Shorthand and Typewriting*. Five credits (two credits only count in education); spring. Hamack.

EDUCATION

Education Hall

Professor Uhl, Executive Officer

Course 60 is prerequisite to all other courses in education. Courses 60 and 70 are prerequisite to 71, which should be planned for the autumn or winter terms in the senior year. Placements for the spring term are limited. Courses 60 or 62, 90, 9, 70, 75, 71, and 120 are regularly required for the five-year normal diploma.

I. ELEMENTARY COURSES (UPPER DIVISION CREDIT)

9. *Psychology of Secondary Education*. The psychological basis of secondary education. Prerequisites, Edu. 60, 90, and Psych. 1. Three credits; autumn, winter, spring. Powers.

60. *Principles of Secondary Education; Problems of the Senior High School Teacher*. Either 60 or 62 may be taken to fulfill requirement for normal diploma. Credit given for only one. Three credits; autumn, winter, spring. Draper.

62. *Principles of Secondary Education; Problems of the Junior High School Teacher*. May be substituted for 60. Three credits; autumn. Draper.

70. *Introduction to High School Procedures*. Methods and observation of high school teaching. Prerequisite, Edu. 60 or 62, 90, and 9. Four credits when Edu. 75 is taken, otherwise five; autumn, winter, spring. Williams, Corbally, Powers.

71. *Cadet Teaching*. Semester basis. Prerequisites, Edu. 60 or 62, 90, 9, 70 and 75 or approved equivalent. Eight credits. (Cadets electing fall semester, register for eight credits autumn quarter. Fall registration may show maximum of 19 credits, while winter quarter maximum will be 14 credits. Cadets electing spring semester, register for eight credits winter quarter. Maximum registration for winter quarter is 21 credits, while spring quarter may show a maximum of 11 credits. Three successive free hours should be provided in the schedule each quarter for cadet teaching.)

Cadets registering for fall semester, report to 114a Education Hall for assignment to Seattle schools Wednesday, September 21, 8 a.m. Spring semester cadets will report Saturday, January 28, 8 a.m., for assignment.)

Corbally, Powers, Cole.

71P. *Cadet Teaching for Women Physical Education Majors.* Eight credits; three quarters required. Registration in the autumn quarter. Teaching arrangements made by the department of women's physical education and the director of cadets.

90. *Measurement in Secondary Education.* The use of tests and scales in secondary education. Prerequisite, Edu. 60. Two credits; autumn, winter, spring. Dvorak.

Course 70 is prerequisite, except as stated above, to courses numbered 75. One of the teachers' courses is required for the normal diploma.

Students of the Library School who have completed a major and minor in teaching subjects can satisfy the practice teaching requirements and their requirements in the teachers' courses numbered 75 by completing the curriculum in library science.

75. *Teachers' Courses in Secondary Subjects.* Courses in the technique of instruction are offered in the following departments:

For the teachers' course in art, see P. S. & D. 100.

75B. *Botany.* Discussion of texts, subject matter and methods of presenting the subject. Prerequisite, two years of botany. Two credits; autumn. Frye.

75C. *Chemistry.* Prerequisite, at least 20 credits of college chemistry of average B grade. Two credits; autumn, winter, spring. Smith.

75D. *Civics.* Attitude of approach, arrangement of material, methods of presentation. Two credits; spring. Cole.

75E. *Commercial Course.* Typical business courses examined and discussed. Prerequisite, 30 credits of the 54 required for a major in commercial teaching, including 15 credits in accounting. Five credits (two credits only count as education; three count as business administration); spring. Draper.

75F. *Commercial Course, Shorthand and Typewriting.* Prerequisites, 30 credits of the 54 required for a major in commercial teaching, and proficiency in shorthand and typewriting. Five credits (two credits only count as education; three count as business administration); spring. Hamack.

75G. *Dramatic Art.* Two credits; spring. F. James.

75H. *English.* (Students failing in an examination on English composition given at the beginning of this course will be required to earn credit for 75I, before entering 75H.) Two credits; autumn, winter, spring. Sperlin.

75I. *English Composition.* Two credits; autumn, winter. Sperlin.

75J. *English Literature.* Two credits; spring. Sperlin.

75K. *French.* Prerequisites, French 41, 101, 102, 103, 158, and 159. Two credits; autumn. Frein.

75L. *German.* Prerequisite, German 110, or consent of instructor. Two credits; spring. Meisnest.

75M. *History.* Special reference to work of the high school. Prerequisite, History 160. Two credits; winter. McMahon.

75NA, 75NB. *Home Economics.* Survey of objectives, organization, and curricula of home economics in elementary, junior and senior high schools. Prerequisite, 25 credits of home economics. Three recitations. Three credits each quarter (only two counted toward normal diploma); autumn, spring. Raitt.

75O. *Human Geography*. Prerequisite, Geog. 1 and five additional credits. Two credits; spring. Renner.

For teachers' course in journalism, see Jour. 125.

75P. *Latin*. Prerequisite, 20 credits of college Latin. Course must be taken in combination with Latin 107 except by special arrangement. Two credits; autumn. Stone.

75Q. *Mathematics*. Prerequisite, Math. 109. Three credits (two credits in education; one credit elective); spring. Jerbert.

For teachers' course in music, see Music 116.

For teachers' course in physical education for men, see Phys. Edu. 141, 142, 143.

75V. *Physical Education for Women*. Prerequisites, Phys. Edu. 162, 163, 164, at least five credits of which must be in residence. Two credits; autumn. Gross.

For teachers' course in piano playing, see Music 167.

75X. *Public Speaking*. Two credits; spring. Orr.

For teachers' course in sociology, see Soc. 164.

75Y. *Spanish*. Prerequisites, Span. 101, 102, 103, 159. Two credits; autumn. Umphrey.

75Z. *Zoology*. Prerequisite, 20 credits in zoology. Two credits; winter. Guberlet.

II. ADVANCED COURSES

101. *Educational Psychology*. A systematic treatment of the theoretical principles and experimental background in the field. Three credits; autumn. Powers.

*102. *Child Study*.

104. *Psychology and Training of Exceptional Children*. Subnormal, superior, backward, eccentric, and delinquent children studied from the point of view of the teacher. Five credits; spring. Dvorak.

105. *Modern Problems of Adolescence*. Three credits; winter. Bolton.

*107. *Modern Psychology and Education*.

*109. *Psychology of High School Subjects*.

120. *Educational Sociology*. A consideration of the problems of education as related to the process of social evolution. Prerequisite, 12 credits in education. Three credits; autumn, winter. Bishop.

130. *Public School Administration*. This course is designed for superintendents and principals, or those seeking such positions. Four credits; autumn. Jessup.

131. *School Administration, State and County*. An analysis of modern practice and historical background of the organization, supervision and financial support of public education. Four credits; winter. Jessup.

* Not offered in 1932-1933.

- *132. *School Administration, City.*
133. *Elementary School Organization and Administration.* Four credits; winter. Jessup.
134. *High School Organization and Administration.* A study of the high school principal as supervisor, administrator, and director of extra-class and intramural activities. Three credits; spring. Corbally.
135. *Organization and Administration of Junior High School.* Problems relating to organization and supervision of the junior high school. Three credits; autumn. Corbally.
140. *School Supervision.* Analysis of the problems and technique of the improvement of school work through the in-service education of teachers. Four credits; autumn. Jessup.
- 145F. *The Health Education Movement.* (Does not count toward master's degree.) Three credits; spring. Rowntree, Soule.
- 145G. *School Hygiene.* Particular attention is given such problems as schoolroom construction, lighting, heating, ventilation, sanitation of spaces, selection and location of equipment, medical inspection and supervision, communicable disease, the school lunch, fatigue, rest and play. (Does not count toward master's degree.) Three credits; spring. Belshaw.
146. *Extra-Class and Intramural Activities.* Weekly conferences with the instructor. Class is limited to 20 students. Prerequisite, Edu. 60 or 62. Three credits; spring. Draper.
147. *Educational and Vocational Guidance.* Three credits; winter. Corbally.
150. *Principles of Elementary Education.* An examination of the bases upon which rests a system of elementary education in a nation. Four credits; autumn. Jessup.
153. *Elementary School Curriculum.* Four credits; spring. Jessup.
163. *Secondary School Curricula.* Prerequisites, Edu. 60 or 62 and 70. Three credits; autumn. Uhl.
- 164-165. *Technique of Curriculum Making.* The student will be expected to give one hour a week to laboratory and field work in the public schools. Prerequisite, Edu. 60 or 62 and 70 or equivalent. Three credits each quarter; autumn, winter. Draper.
- 180, 181, 182. *History of Education.* A social interpretation of the historic beginnings of education; (a) the contributions of the Greeks and Romans, and the beginnings of Christianity; (b) the medieval period and the Renaissance; and (c) the development of educational theories and practices since the Renaissance. Three credits a quarter; autumn, winter, spring. Bishop.
183. *Historical Backgrounds of Educational Method.* Three credits; autumn. Williams.
184. *Comparative Education.* Modern education in foreign countries. Four credits; spring. Jessup.
188. *Philosophy of Education.* Five credits; spring. Bishop.
191. *Advanced Educational Measurements.* Prerequisite, Edu. 90 or its equivalent. Three credits; winter. Dvorak.

* Not offered in 1932-1933.

193. *Experimental Studies in Character Training*. Experimental background of the modern effort toward character development. Three credits; winter. Powers.

COURSES FOR GRADUATES ONLY

201. *Advanced Educational Psychology*. Students must have as prerequisites courses in general and educational psychology. Three credits; spring. Powers.

- 209-210. *Seminar in Psychology of High School Subjects*. Three credits each; winter and spring. Williams.

- 220-221. *Seminar in Educational Sociology*. Summary of recent contributions of educational sociology, followed by practical work upon selected problems. Five credits a quarter; autumn, winter. Bishop.

222. *Seminar in Social Survey of School Materials*. Open only to advanced students and with instructor's permission. Five credits; spring. Bishop.

230. *Seminar in Administration*. (Legislation.) Four credits; winter. Jessup.

231. *Seminar in Business Administration*. Methods of raising and distributing school revenues. Five credits; winter. Cole.

233. *Seminar in Administration*. (School Buildings.) Four credits; spring. Jessup.

240. *Technique of Objective Supervision*. Three credits; spring. Williams.

- 243-244. *Supervision of Secondary School Subjects*. Three credits each quarter; winter, spring. Uhl.

- 245, 246, 247. *The Organization of Supervisory and Administrative Programs*. Five credits each quarter; autumn, winter, spring. Cole.

- 260-261. *Seminar in Secondary Education*. Two credits each quarter; winter, spring. Draper.

263. *Junior College*. Three credits; spring. Dvorak.

- 270-271. *Problems in Modern Methods*. Three credits each quarter; autumn, winter. Williams.

- 287-288-289. *Seminar in Philosophy of Education*. Three credits each quarter; autumn, winter, spring. Uhl.

290. *Educational Statistics*. Required of candidates for master's and doctor's degrees in education. Five credits; autumn. Dvorak.

291. *Methods of Educational Research*. Required of candidates for the master's and doctor's degrees in education. Three credits; autumn, winter. Dvorak.

- 298, 299, 300. *Individual Research or Thesis Work*. Credits to be arranged; autumn, winter, spring. Staff.

ELECTRICAL ENGINEERING

Engineering Hall

Professor Magnusson, Executive Officer

101. *Direct Currents*. Short course in continuous current machinery, for non-electrical students, to be taken in connection with E.E. 102. Prerequisites, Physics 98, Math. 62. Four credits; autumn, winter, spring.

Hoard, Lindblom.

102. *Direct Currents Laboratory*. Continuous current machinery, for non-electrical students. To be taken with E.E. 101. Prerequisite, Physics 98. Two credits; autumn, winter, spring.

Eastman, Smith.

103. *Direct Currents*. A short course in direct current machinery, for civil engineering students. Prerequisites, Physics 98, Math. 62. Three credits; autumn.

Lindblom.

104. *Direct Currents Laboratory*. Direct current machinery, for civil engineering students. Prerequisite, Physics 98. One credit; autumn.

Lindblom.

105. *Electric Wiring*. A short course for architects. Two credits; autumn.

Shuck.

109. *Direct Currents*. Theory of electric and magnetic circuits; construction, operation and characteristics of direct current machines. To be taken with E.E. 110. Prerequisites, Physics 98, Math. 63. Four credits; autumn, winter.

Hoard, Eastman.

110. *Direct Currents Laboratory*. Direct current machinery. Prerequisite, Physics 98. To be taken with E.E. 109. Two credits; autumn, winter.

Hoard, Lindblom.

111. *Direct Currents*. Continuation of E.E. 109 in direct current machinery. Storage batteries. Direct current systems. To be taken with E.E. 112. Prerequisite, E.E. 109. Four credits; winter, spring.

Smith, Lindblom.

112. *Direct Currents Laboratory*. Experimental work on direct current dynamo machinery and on storage batteries. To be taken with E.E. 111. Prerequisite, E.E. 110. Four credits; winter, spring.

Shuck, Hoard.

****15. Elementary Direct Currents.** (Extension night class.) Laws of the electric and magnetic circuits with application to direct current machinery. Practical course for electricians.

Shuck.

****20. Elementary Alternating Currents.** (Extension night class.) Alternating current theory with experimental work on alternating current machinery. Prerequisite, E.E. 15.

Shuck.

121. *Alternating Currents*. Alternating currents, for non-electrical students. To be taken with E.E. 122. Prerequisite, E.E. 101. Four credits; autumn, winter, spring.

Shuck, Hoard.

122. *Alternating Currents Laboratory*. Experimental work on alternating current machinery. To be taken with E.E. 121. Prerequisite, E.E. 102. Two credits; autumn, winter, spring.

Eastman, Lindblom.

123. *Alternating Currents*. A short course in alternating current machinery for civil engineering students. Prerequisites, E.E. 103, 104. Three credits; winter.

Shuck.

****Will be offered if a sufficient number of students elect the course.**

124. *Alternating Currents Laboratory*. Alternating current machinery for civil engineering students. Prerequisites, E.E. 103, 104. One credit; winter. Shuck.

131. *Electric Communications*. Theory, construction and operation of electric communication systems. A short course for non-electrical students. Prerequisite, Physics 98. Two credits; autumn. Eastman.

141. *Illumination*. Electric lamps; commercial photometry; adaptation of electric lighting to commercial requirements. Junior or senior elective. Prerequisites, E.E. 109, 110. Four credits; winter. Shuck.

152. *Electrical Machine Design*. Complete design of one direct current generator or motor. Prerequisites, E.E. 111, 112. Three credits; winter, spring. Lindblom.

**154. *Design of Electrical Apparatus*. Switchboards, transformers, alternators, alternating current motors, etc. Prerequisite, E.E. 152. Four credits. Loew.

161. *Alternating Currents*. Theory of singlephase and polyphase systems; power factor and power measurements; theory of transformers and induction motors. To be taken with E.E. 162. Prerequisite, E.E. 111. Six credits; autumn, spring. Loew, Hoard.

162. *Alternating Currents Laboratory*. Experimental work with alternating current machinery. To be taken with E.E. 161. Prerequisite, E.E. 112. Four credits; autumn, spring. Smith, Shuck.

163. *Alternating Currents*. Theory of alternators, rotary converters, rectifiers, synchronous and commutator motors and transmission lines. To be taken with E.E. 164. Prerequisite, E.E. 161. Six credits; autumn, winter. Loew, Smith.

164. *Alternating Currents Laboratory*. To be taken with E.E. 163. Prerequisite, E.E. 162. Four credits; autumn, winter. Hoard, Shuck.

171. *Electric Railways*. Electrification of steam railroads. Fundamentals of direct current and alternating current systems of electrification. Prerequisites, E.E. 161, 162. Four credits; autumn. Hoard.

**173. *Central Stations*.

175. *Power Transmission*. Theory, design and operation of electric power transmission lines. Prerequisites, E.E. 163, 164. Five credits; autumn, spring. Loew.

180, 182, 184. *Research*. Two to five credits a quarter; autumn, winter, spring. Magnusson.

181. *Vacuum Tubes—Theory and Application*. Theory of vacuum tube amplifiers, oscillators, detectors, and rectifiers; applications in the power, radio and telephone fields. Prerequisite, E.E. 161. Five credits; winter, spring. Eastman.

183. *Radio*. Laws of oscillatory circuits; continuous wave telegraphy; radio telephony; television; theory of antennas and radiation; transmission phenomena. Prerequisite, E.E. 181. Five credits; spring. Eastman.

185. *Telephone Transmission*. Theory of telephone transmission; reflection phenomena; standing and travelling waves; loading; measurement of line constants. Prerequisite, E.E. 161. Four credits; winter. Eastman.

**Will be offered if a sufficient number of students elect the course.

186, 188. *Thesis*. After consultation with the head of the department, the student selects a suitable topic for investigation. Reports of progress are made weekly to the instructor in charge of the work selected. Two to five credits a quarter; autumn, winter, spring. Loew, Hoard, Magnusson.

191. *Engineering Equations*. Mathematical investigation of electrical phenomena with quantitative solutions of typical engineering problems. Prerequisite, E.E. 161, 162. Three credits; winter, spring. Loew.

190, 192, 194. *Seminar*. Prerequisites, E.E. 161, 162. Four or five credits; autumn, winter, spring. Magnusson, Loew.

195. *Electric Transients*. Single and double energy transients; standing and travelling waves; short circuit transients; surges; corona; lightning. Prerequisites, E.E. 163, 164. Three credits; autumn, winter, spring. Magnusson.

196. *Electric Transients Laboratory*. To be taken with E.E. 195. Prerequisite, E.E. 164. Three credits; autumn, winter, spring. Smith.

198. *Electric Transients Laboratory*. Continuation of E.E. 196. Special problems. Two to five credits; autumn, winter, spring. Smith.

COURSES FOR GRADUATES ONLY

210, 212, 214. *Research*. Two to five credits a quarter; autumn, winter, spring. Magnusson.

ENGINEERING ENGLISH

For courses in Engineering English, see department of English, Comp. B, 100, 102 and Speech 103.

ENGINEERING SHOPS

Shop

Associate Professor Schaller, Executive Officer

53. *Foundry*. Principles of the founding of ferrous metals. One credit; autumn, winter, spring. Schaller, Sullivan.

54. *Forge*. Mechanical and heat treatment of steel; gas and electric welding. One credit; autumn, winter, spring. Schaller.

55. *Machine*. Fundamental theory and practice of machining operations on iron and steel. One credit; autumn, winter, spring. Sullivan, Schaller.

104. *Non-Ferrous Metals and Alloys*. Founding, welding and machining of non-ferrous metals. One credit; winter. Schaller.

105. *Advanced Machining Problems*. Individual problems of machining operations on mechanical equipment. Prerequisite, Shop 55. One credit; autumn. Sullivan.

106. *Advanced Machine*. Study of machining problems from the standpoint of production. Prerequisite, Shop 105. One credit; winter. Sullivan.

107. *Shop Planning*. Design and equipment of a representative manufacturing plant. Prerequisite, Shop 106. One credit; spring. Schaller.

115. *Shop Management*. A study of the location, operation and organization of manufacturing plants. Three credits; winter. Schaller.

120. *Factory Cost Analysis*. Analyzing shop operations from the standpoint of manufacturing costs. Three credits; autumn, spring. Schaller.

ENGINEERING ENGLISH

For courses in Engineering English, see department of English, Comp. B, 100, 102 and Speech 103.

ENGLISH

Parrington Hall

Professor Griffith, Executive Officer

SUGGESTIONS TO MAJOR STUDENTS

The department of English includes four divisions: composition, literature, speech, and drama. Majors are granted in literature, speech and drama, normally requiring from 45 to 60 credits, of which at least 50 per cent must be upper division. Composition 1 and 2 or their equivalent of composition are required but cannot be counted toward a major or minor. For all divisions the equivalent of Comp. 2 is Comp. 16 and 17, provided that these last two courses are taken concurrently with Lit. 66 and 75.

At the conclusion of the senior year, all major students are required to pass the senior examination given by the division of English in which their major falls. The examination will require a general knowledge of English and specialization in the chosen branch of English study.

The schedules for majors and minors in the various divisions need not be repeated here, as they are found in the School of Education section, listed with the requirements for a teaching diploma. Majors and minors in literature who are not seeking a normal diploma, however, may substitute English electives for Speech 79 and may omit Lit. 117. The "major courses" are taught in small classes to facilitate discussion and to increase contact between teacher and student. They are grouped as follows:

- Group I. Old and Middle English (150, 151)
Old English Literature (180, 181)
English Literature 1476-1642 (153, 154)
- Group II. Shakespeare (170, 171)
Seventeenth Century Literature (167, 168)
Eighteenth Century Literature (144, 145)
- Group III. Early Nineteenth Century Literature (177, 178)
Late Nineteenth Century Literature (174, 175)
American Literature (161, 162)

For the major in literature at least ten credits in one major course are required and five credits in each of the major groups other than the one in which the ten-credit major course is taken. For majors in speech, drama, and minors in literature, at least ten credits from these major courses are required.

Candidates for a graduate degree in English are required to offer the equivalent of an undergraduate major in English at the University of Washington. In addition majors present a master's thesis and 24 or 25 credits which include Lit. 201, 203 and ten credits in one graduate year-course. Minors present 12 graduate credits which shall complete the undergraduate major in English and contain at least three credits in English courses for graduates only.

COMPOSITION

A. *Elementary Composition*. A non-credit composition course required of students who fail in examinations for entrance into Comp. 1, 4. No credit; autumn, winter, spring. Miss Lawson in charge.

B. *Elementary Composition*. A non-credit course in the fundamentals of writing. For those who fail in the test for admission to Comp. 100. A passing grade in the course is equivalent to passing in this test. Autumn, winter, spring. Miss Hall in charge.

1, 2. *Composition*. Principles and practice of composition with conferences for personal criticism. Entrance into this course is gained by a satisfactory grade in the freshman preliminary English test. As this test is graded both for entrance and for efficiency, there are several possible assignments for students after its completion. The usual assignments are (1) exemption from Comp. 1 and 2; (2) transfer to Comp. 15, 16, where four credits of composition are required instead of 10; (3) assignment to Comp. 1, where if a student's work is of sufficiently high quality, he may be exempted from Comp. 2 or transferred to Comp. 16 on the recommendation of his instructor and the instructor in charge of this course; (4) assignment to Comp. 1 and 2; (5) transfer to Comp. A, a non-credit course required before entrance into Comp. 1. In forestry, the grade in Comp. 1 is a tentative grade contingent upon good work in English in subsequent forestry courses. Five credits each; autumn, winter, spring. Miss Lawson in charge.

4-5, 6. *Composition*. For students in fine arts, except music. Three credits; autumn, winter, spring. Miss Lawson in charge.

9, 10. *Composition*. For students in pharmacy. Three credits, winter; two credits, spring. Miss Lawson in charge.

15, 16. *Composition*. For students ranking very high in the freshman preliminary test as a substitute for Comp. 1 and 2. Two credits; autumn, winter. Miss Lawson in charge.

16, 17. *Major Composition*. For majors and minors in English and to be studied concurrently with Lit. 66 and 75. When so studied this course substitutes for Comp. 2. Two credits; winter, spring.

Childs, Walters, Kahin, Zillman.
51, 52, 53. *Advanced Composition*. Based upon models from current magazines. Upper division credit for upper division students. Prerequisites, Comp. 1 and 2 or Speech 37 or 40. Two credits; autumn, winter, spring. Milliman.

54, 55, 56. *Advanced Composition*. Description, narration, and the writing of criticism. Upper division credit for upper division students. Prerequisites, Comp. 1 and 2 or Speech 37 or 40. Two credits; autumn, winter, spring.

61, 62. *Verse Writing*. Prerequisite, Comp. 1-2. Two credits; autumn, winter. Hughes.

67, 68, 69. *English Prose Style*. A study of composition to develop effective presentation of material. Upper division credit for upper division students. Prerequisites, Comp. 1 and 2 or equivalent. Two credits; autumn, winter, spring. Milliman.

100. *Technical Composition*. The logical organization of material, and its effective presentation in the form of articles, business letters, and reports. Prerequisite, the passing of a test in the mechanics of English; such a test is given to sophomore engineers on the third Tuesday of the autumn quarter. Three credits; autumn, winter, spring. Miss Hall in charge.

102. *English for Engineers.* In this course, the technical student who wishes to come in contact with authors representative of the thought or the culture of either the past or the present and to improve his own style of writing, is given opportunity to progress in accordance with his ability. Individual conferences, weekly. This course may be repeated for credit. Prerequisite, Comp. 100. Three credits; autumn, winter, spring. Hall.

110, 111. *Advanced Verse Writing.* Given in conjunction with English 61, 62, 63. All the elementary credits must be earned before advanced credit will be given. Two credits; autumn, winter. Hughes.

156, 157. *Advanced Composition: Narration.* Five credits; autumn, winter, spring.

For other courses in composition, see Speech 138; Drama 111, 112, 113; Jour. 173, 174-175.

SPEECH

37. *Argumentation.* Primarily for students in the College of Business Administration. Analysis, the use of evidence, and the discovery of fallacies. Five credits; autumn, winter, spring.

38. *Argumentation and Debating.* A study of the principles of argumentation and their application in practical debate. Upper division credit for upper division students. Five credits; autumn, winter, spring. Windesheim.

*39. *Advanced Argumentation and Debating.*

40. *Essentials of Speaking.* Five credits; autumn, winter, spring.

41. *Advanced Speaking.* Upper division credit for upper division students. Prerequisite, Speech 40. Three credits; autumn, winter, spring. Orr in charge.

43. *The Speaking Voice.* A study of the vocal mechanism and the establishment of fundamental co-ordinations of mind, voice and body. Upper division credit for upper division students. Three credits; autumn, winter, spring. Rahskopf, Bird. Orr, Rahskopf.

47, 48. *Theatre Speech.* To prepare the speech of students for desirable usage in the theatre. Prerequisite, Speech 43. Two credits; autumn, winter, spring.

79. *Oral Reading of Literature.* Required for a normal diploma in English. Upper division credit for upper division students. Three credits; autumn, winter, spring. Windesheim, Pellegrini.

101. *Public Debate.* Only students chosen for the debate squad may register for this course. Credits will be allowed upon the recommendation of the instructor in charge, provided that no more than two credits are earned in one year and that the total does not exceed six credits. Prerequisite, membership in the debate squad. Two credits; winter, spring. Orr in charge.

103. *Extemporaneous Speaking.* Recommended to students in engineering, business administration, and law. Not open to liberal arts students nor to students who have credit for Speech 40. Three credits; spring. Windesheim.

*138. *Rhetoric of Public Speaking.*

139. *Forms of Public Address.* The principles of organization and persuasive appeal in the various forms of public address. Platform practice. Prerequisite, Speech 40. Three credits; spring. Rahskopf.

*Not offered in 1932-1933.

186. *Mind and Speech*. Speech; its development; its relation to personality; its instinctive, intellectual and emotional aspects, and its social significance. Three credits; spring. Rahskopf.

187. *Advanced Voice Problems*. A study of minor voice and speech defects with special attention given to diagnosis and remedy. Prerequisite, Speech 43. Three credits; winter. Orr.

188. *Advanced Problems in Speaking*. Laboratory and research. Prerequisite, Speech 40. Three credits; spring. Orr.

191. *Speech Correction*. The methods of correcting minor speech defects together with the practical application of these methods to specific cases. Three credits; autumn, spring. Rahskopf.

Teachers' Course. See Education 75X.

COURSES FOR GRADUATES ONLY

214, 215, 216. *Public Speaking*. Three credits; autumn, winter, spring. Orr.

For other courses in Speech, see Drama 51, 52, 53, 121, 122, 123; Psych. 106, 107.

DRAMA

51, 52, 53. *Elementary Acting*. Theory and practice of the art of acting. Members of class form nucleus for workshop play productions. Prerequisites, Speech 43, 47, 48. Two credits; autumn, winter, spring. _____.

104, 105, 106. *Elementary Theatre Workshop*. Construction of actual stage settings, properties, costumes, models. Design, make-up, stage lighting. One hour lecture, four hours laboratory. Three credits; autumn, winter, spring. Conway.

111, 112, 113. *Playwriting*. Principles of dramatic composition with experimental creative work. The course may be substituted for other courses in the department with the consent of the department. Five credits; autumn, winter, spring. Hughes.

114, 115, 116. *Advanced Theatre Workshop*. Four hours laboratory. Prerequisites, Drama 104, 105, 106. Two credits; autumn, winter, spring. B. W. James.

121, 122, 123. *Advanced Acting and Directing*. Members of the class given first consideration for parts in the major production each quarter and to direct laboratory plays under supervision. Prerequisites, Drama 51, 52, 53. Three credits; autumn, winter, spring. F. B. James.

127, 128, 129. *History of the Theatre*. The origins. Evolution of the physical playhouse, stage machinery and scenery, acting and costuming, masks and marionettes. Lectures and required reading. Two credits; autumn, winter, spring. Conway.

151, 152, 153. *Representative Plays*. Origin and development of the drama. Representative plays of all important periods. Three credits; autumn, winter, spring. Hughes.

191, 192, 193. *Major Conference*. Individual conferences; required of drama majors in their senior year. One credit each for the three fields of

study: (1) acting and directing, (2) technical, (3) historical and literary; autumn, winter, spring. Hughes in charge.

Teachers' Course. See Education 75G.

COURSES FOR GRADUATES ONLY

210, 211, 212. *Research in Drama.* Individual conference. Permission of instructor necessary for enrollment. Time to be arranged. Three credits; autumn, winter, spring. Hughes in charge.

For other courses in Drama, see Speech 43, 47, 48; Lit. 60, 154, 170, 171, 172, 208, 209, 210, 217, 218, 219.

LITERATURE

60. *Introduction to Shakespeare.* Detailed study of some of Shakespeare's principal plays. Not open to students who have had six hours of English 70, 71 or 72. Five credits; autumn, winter, spring. Zillman.

64, 65. *Literary Backgrounds.* English classics, especially Beowulf, Chaucer, Spenser, Shakespeare, Milton, Dryden, Pope, Johnson, Burns, emphasizing literary forms, their appreciation, and social relations. Grade of "A" or "B" grants upper division credit to an upper division student for the quarter in which the grade is earned. Five credits; autumn, winter, spring.

66. *Literary Backgrounds.* Introduction to poetry with illustrations from the nineteenth century. Not open to students who have credit for Literature 57, 21, 83, or 84. Three credits; autumn, winter, spring.

73. *Introduction to Modern Literature.* Essays on European and American thought. Readings in poetry, novel, and drama. Five credits; autumn, winter, spring. Milliman, Harrison, Cornu, Childs, Walters.

75. *Technique of Fiction.* A critical analysis of short stories, novels, and plays. For majors in literature and drama and for others who desire to study the organization of narrative literature. Upper division credit for upper division students. Three credits; autumn, winter, spring.

97, 98, 99. *The Bible as Literature.* The literature of the Old Testament. Open to all. Upper division credit for upper division students. Two credits; autumn, winter, spring.

104, 105, 106. *Contemporary Literature.* Special studies in English and continental contemporary literature for advanced students. Three credits; autumn, winter, spring. Cox, Harrison, Winther.

117. *History of the English Language.* English language from Early Germanic to the present day presented in three aspects; pronunciation, vocabulary, and syntax. Open to sophomores who intend to major in English. Literature 180 may be substituted for this course. Five credits; autumn, winter, spring. Butterworth.

141, 142, 143. *Social Ideals in Literature.* Model commonwealths and such other literatures as illustrate the development of social and economic thought. Three credits; autumn, winter, spring. Winther.

144, 145. *Eighteenth Century Literature.* The classic period, Johnson and his Age, and eighteenth century romanticism in successive quarters. Five credits; autumn, winter, spring. Cox, Cornu.

*147, 148, 149. *The English Novel.*

*Not offered in 1932-1933.

150, 151. *Old and Middle English Literature*. Five credits; autumn, winter, spring. Butterworth.

153, 154. *English Literature: 1476-1642*. The Renaissance, Spenser and his contemporaries, and non-Shakespearean Elizabethan drama. Five credits; autumn, winter. Benham.

161, 162. *American Literature*. From the beginnings to 1870. Five credits; autumn, winter, spring. Blankenship.

164, 165, 166. *American Literature since 1870*. The beginning of realism; tendencies from 1900 to 1915; contemporary fiction and poetry. Three credits; autumn, winter, spring. Harrison.

167, 168. *Seventeenth Century Literature*. A study of Milton and his contemporaries. Five credits; autumn, winter, spring. Benham.

170, 171. *Shakespeare*. Prerequisites, Literature 60, 70, 71, or 72. Five credit; autumn, winter, spring. Taylor.

174, 175. *Late Nineteenth Century Literature*. Poetry, novels, essays, and drama. Five credits; autumn, winter, spring. Winther.

177, 178. *Early Nineteenth Century Literature*. Poetry, novels, essays, and drama. Five credits; autumn, winter, spring. Eby, Cornu.

180, 181. *Old English Language*. The reading of Anglo-Saxon classics in the original and the study of grammatical forms. Five credits; autumn, winter. Butterworth.

*183, 184, 185. *General Literature*.

191. *Major Conference*. Individual conferences for guidance in individual reading and study. Each student meets his instructor once a week in conference. Three credits; autumn, winter, spring. Staff.

*194. *Major Thesis*.

*197. *Major English*.

Teachers' Courses. See Education 75H, 75I.

COURSES FOR GRADUATES ONLY

For courses in foreign literature taught in English, see department of General Literature, page 223.

201. *Introduction to Graduate Study*. Methodology and bibliography of the English language and literature. Normally the first graduate course in English. Two credits; autumn. Benham.

203. *Literary Criticism*. A brief history of English Criticism. Three credits; autumn. Benham.

205, 206. *Chaucer*. The problems of Chaucerian scholarship. Five credits; winter, spring. Griffith.

*207. *English Literature from Chaucer to Spenser*.

*Not offered in 1932-1933.

208, 209, 210. *English Drama to 1642*. Problems in the development of English drama. Five credits; autumn, winter, spring. Taylor.

211, 212, 213. *Seminar in Sixteenth Century Literature: Spenser*. Five credits; autumn, winter, spring. Padelford.

217, 218, 219. *Seminar in Shakespeare*. Five credits; autumn, winter, spring. Taylor.

221, 222, *223. *Seminar in Seventeenth Century Literature*. The Renaissance and the Reformation, the literature of the Puritan and the Cavalier, the Jacobean and Restoration drama, and the beginnings of English science. Five credits; autumn, winter. Benham.

224, 225, 226. *American Literature*. Five credits; autumn, winter, spring. Eby.

227, 228, 229. *Seminar in American Literature*. For advanced graduate students in American Literature. Five credits; autumn, winter. Harrison, Eby.

230, 231. *Old English*. Anglo-Saxon grammar; readings in Old English prose and poetry; Beowulf. Five credits; autumn, winter. Butterworth.

233, *234. *Advanced Old English*. Prerequisites, Literature 230, 231, or equivalent. Five credits; spring. Butterworth.

237. *Gothic*. Prerequisites, 230, 231, 232 or equivalent. Five credits; spring. Butterworth.

238, 239, 240. *Seminar in Early Nineteenth Century Literature*. Five credits; autumn, winter, spring. Cox.

*241, 242, 243. *Victorian Literature*.

244, 245, *246. *Eighteenth Century Literature*. Five credits; winter, spring. Cox.

250, 251, 252. *Thesis Research*. A student should not enroll for this course until after he has chosen a thesis subject. Time and credit to be arranged. Autumn, winter, spring. Staff.

For other graduate courses that may be counted toward an English major for an advanced degree, see French 210, 211, 212, French Criticism, and Liberal Arts 214, 215, 216, Recent Aesthetic Theory and Literary Criticism.

COMPARATIVE PHILOLOGY

The following courses in comparative philology are available in the department of Scandinavian Languages and Literature.

190, 191. *Introduction to the Science of Language*. Two credits; autumn, winter. Vickner.

192. *Life of Words*. Two credits; spring. Vickner.

*Not offered in 1932-1933.

FISHERIES

Fisheries Hall

Professor W. F. Thompson, Executive Officer

The prerequisites as given apply only to those students matriculating subsequent to September, 1931. The department should be consulted by those who have matriculated previously.

101, 102, 103. *Systematic Ichthyology*. Classification and anatomy of fishes. Prerequisites, Zool. 1 and 2. Two laboratory periods and three lectures a week. Five credits; autumn, winter, spring. Schultz.

105, 106, 107. *Commercial Aquatic Invertebrates*. Classification and life history of commercially important invertebrates, especially molluscs and crustacea. Prerequisites, Zool. 1 and 2. Five credits; autumn, winter spring. Lynch.

*125, 126, 127. *Early Life History of Fishes*.

154. *Diseases of Fish*. Nature and causes of disease in fish. Prerequisites, Zool. 1-2, Fish. 101, 102. Three lectures and two laboratory periods. Five credits; autumn. Guberlet.

157, 158. *Later Life History of Fishes*. Growth, maturity, and migrations. Prerequisites, Fish. 101, 102, 103. Five credits; autumn, winter. Schultz.

**159. *Conservation*. Theory of overfishing and statistical methods of observation. Prerequisite, Fish. 106 or 126. Five credits; spring. Thompson.

165, 166, 167. *Elementary Problems*. Students will be assigned problems to be worked out under the direction of an instructor. Prerequisite, 15 credits in fisheries. Two to five credits; any quarter. Staff.

195, 196, 197. *Seminar*. Reports and discussions of current fisheries literature. Prerequisite, 15 credits in fisheries. Two credits; any quarter. Thompson.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Research*. Prerequisite, 25 credits in fisheries or its equivalent in zoology. Credits to be arranged; any quarter. Thompson and staff.

205, 206, 207. *Graduate Seminar*. Required of all graduate students. Open to graduates in zoology. Two credits; any quarter. Thompson.

FORESTRY AND LUMBERING

Anderson Hall

Professor Winkenwerder, Executive Officer

1a. *Dendrology*. Identification, classification and distribution of the trees of North America. Two recitations and one three-hour laboratory period. Prerequisite, Bot. 1. Three credits; spring. Winkenwerder.

1b. *Dendrology*. Continuation of For. 1a. Prerequisite, For. 1a. Three credits; autumn. Alexander.

2. *Introduction to Forestry*. To familiarize the student with the field of work he is about to enter. Required of all freshmen. Three credits; autumn. Winkenwerder.

*Not offered in 1932-1933.

**Will be offered if a sufficient number of students elect the course.

3. *Introduction to Forestry*. Continuation of For. 2, but need not be preceded by it. Two credits; winter. Winkenwerder.

4. *Forest Protection*. Classification of injuries, factors influencing the spread and severity of forest fires, methods of detection and suppression. Required of freshmen. Three credits; spring. Winkenwerder.

6. *General Forestry*. Survey of forestry as a whole for non-majors. No prerequisite. Three credits; winter. Winkenwerder.

10. *Wood Technology*. Identification, taxonomy, physical and chemical properties of woods in relation to their uses. Prerequisites, Physics 3, For. 1a, 10 credits of chemistry. Two lectures and one three-hour laboratory period. Three credits; autumn. Grondal.

11. *Wood Structure*. Microstructure of wood; identification, xylotomy and elementary microtechnique. Prerequisite, For. 10. One lecture and two laboratory periods. Three credits; winter. Grondal.

15. *General Lumbering*. Comparative methods of lumbering on the Pacific Coast and in other lumbering regions of the United States. Prerequisite to all courses in logging and milling. Prerequisite, For. 3. Five credits; autumn. Mills.

40. *Silviculture*. Field studies of forest types and silvicultural problems. Three credits; spring. Alexander.

60. *Forest Mensuration*. The theory of scaling, volume and taper tables, sample plot methods, determination of contents of stands; growth and yield. Prerequisites, For. 3, Math. 13. Four credits; winter. Alexander.

62. *Forest Mensuration*. Problems in scaling, volume table construction, cruising, mapping, growth and yield studies. Given at Pack Forest. Prerequisites, C.E. 55, For. 60. Six credits; spring. Alexander.

104. *Timber Physics*. General mechanics, stresses, tests, theory of flexure, moisture and strength; mechanical properties of wood. Required of juniors. Prerequisites, Math. 13, For. 11, Physics 2. Five credits; winter. Mills.

105. *Wood Preservation*. Factors influencing the development of fungi; classification and control of wood destroying agencies; mechanical properties of treated wood. Prerequisite, For. 11. Three credits; spring. Grondal.

106. *Wood Preservation Laboratory*. Evaluation of preservatives; methods of testing and inspection of treated material. Must be preceded or accompanied by For. 105. Two laboratory periods. Two credits; spring. Grondal.

110. *Characteristics of Trees*. Identification, distribution, life habits, and uses of trees of the Pacific Northwest. Offered only to students not enrolled in forestry. Two lectures weekly and occasional field trips. Two credits; spring. Winkenwerder.

115. *Forest Protection*. Fire plans, relation of forestry practice in the control of insect and fungus attacks. Prerequisite, For. 4. Three credits; autumn. Winkenwerder.

119. *Forest Administration*. Objects, principles, and methods of administering private and public forest industries. Prerequisites, B.A. 1 or 3. Three credits; autumn. Jeffers.

121. *Silvics*. Relations of trees and forests to soil, moisture, light and temperature as a foundation for forestry practice; forest ecology. Prerequisites, Bot. 11, For. 1b, 3. Three credits; winter. Alexander.

122. *Silvicultural Methods.* Type and site classification; intermediate cuttings; final cuttings; natural and artificial regeneration. Prerequisites, For. 40, 121. Five credits; autumn. Alexander.

126. *Forest Economics.* Position of forests in the economic structure of the United States and other countries. Prerequisite, For. 119. Four credits; winter. Jeffers.

140. *Construction.* Machinery and methods of construction; plans, specifications and cost estimates for roads, trails and wooden bridges, land clearing, Forest Service Improvement work and logging construction. Two lectures, one three-hour laboratory period. Three credits; autumn. Mills.

151. *Forest Finance.* Mathematics of forest finance and operations; cost of growing timber; valuation of land for forest production. Required of students in senior or graduate year. Prerequisite, For. 62. Four credits; autumn. Jeffers.

152. *Forest Organization.* Principles of forest organization and regulation of the cut; sustained yield management of forests; forest working plans. Required of students in senior or graduate year. Prerequisite, For. 151. Four credits; winter. Jeffers.

153. *Forest Management.* Lectures, assigned readings and extensive field work on large size tracts of timber. Required of forest management majors. Prerequisites, For. 119, 152, 194. Sixteen credits; spring. Jeffers.

158. *Forest Utilization.* Classification and utilization of secondary and derived forest products from the viewpoint of forest economics. Prerequisite, For. 11. Five credits; winter. Grondal.

160, 161, 162. *Undergraduate Studies.* The object of this course is to enable students to prepare themselves for work in fields for which there is not sufficient demand to warrant the organization of regular classes. Opportunities are offered in grazing, city forestry, tree surgery, forest recreation, wood fibers, microtechnique in the study of wood, research methods and advanced work in any of the regular forestry subjects. Credit to be arranged any quarter. Instructor assigned according to nature of work. Registration subject to approval of the dean. Staff.

171. *Forest Geography.* Silvicultural regions, relation to regional industrial development and problems of lumbering and management. Prerequisite, senior standing. Four credits; winter. Winkenwerder.

183. *Milling.* Organization, planning, operation and administration of timber conversion plants. Prerequisites, M.E. 82, For. 15, 104, 158. Four lectures and one laboratory period. Five credits; autumn. Grondal.

184. *Manufacturing Problems.* Lumber producing regions; economics and geography of utilization; selling and distribution of lumber; financing methods. Prerequisites, B.A. 57 and 65, For. 183. Five credits; spring. Grondal.

185. *Forest Engineering.* Logging plans; correlation of logging methods and conditions of stand, topography, etc. Engineering methods in logging and forest management; logging costs. Field trips to nearby logging operations. Four lectures and one three-hour laboratory period. Prerequisite, senior standing. Five credits; autumn. Mills.

186. *Logging Engineering.* Logging machinery and equipment. Machine costs, output and depreciation. Solution of machine and equipment problems. Prerequisites, For. 185, C.E. 57, M.E. 82. Four lectures and one three-hour laboratory period. Five credits; winter. Mills.

187. *Forest Engineering Field Trip.* Field methods, stand inventory, topographic data in some logging operation. Plan of log transportation methods. Study of various logging operations. Cost estimates, appraisals and comparison of logging methods. Five to six weeks in field, one week study of various logging operations, four weeks compilation of field data. Prerequisite, For. 186. Sixteen credits; spring. Mills.

188. *Theory and Practice of Kiln Drying.* Wood liquid relationships and hygrometry; application of gas laws. Problems in the design of dry kilns. Prerequisites, For. 11 and 158. Two lectures and one laboratory period. Three credits; winter. Grondal.

189. *Wood Pulp.* Design of waste conversion plants; wood pulp manufacture. Prerequisites, For. 11, 158. Five credits; spring. Grondal.

193, 194. *Seminar.* Review and advanced work in dendrology, mensuration, silviculture and lumbering. Prerequisite, senior standing. Three credits; autumn, winter. Jeffers, Alexander.

COURSES FOR GRADUATES ONLY

202. *Thesis.* Total requirement nine credits; instructors assigned according to nature of work. Three to six credits a quarter; autumn, winter, spring. Staff.

203. *Advanced Wood Preservation.* Theory of penetrance; design of wood preservation plants. Fire proofing and fire proofing compounds. Prerequisite, For. 105, 106. One lecture and two laboratory periods. Three credits; autumn. Grondal.

204. *Forest Management Plans.* Development of data covering a working circle; valuation of forest area; organizing the forest property to conserve earning and productive power. Prerequisite, For. 153. Two lectures, two laboratories. Four credits; autumn. Jeffers.

208. *Graduate Seminar.* Reviews, assigned readings, reports and discussions on current periodical literature, Forest Service and state publications. Three credits; winter. Staff.

210, 211, 212. *Graduate Studies.* For students who wish to prepare themselves in fields which the faculty of the college is prepared to give but for which there is not sufficient demand to organize regular courses. Prerequisite, graduate standing. Three to five credits; any quarter. Staff.

213, 214, 215. *Research.* Ample opportunity is offered for research in special phases of forestry. Three to five credits; any quarter. Staff.

220. *Advanced Forest Engineering.* Logging management; analysis of costs. Economic selective logging and valuation. Stumpage and logging appraisal; financial reports. Prerequisite, graduate standing. Five credits; autumn. Mills.

221. *Forest History and Policy.* Forest policy of the United States; forestry in the states and island possessions; the rise of forestry abroad. Three credits; winter. Jeffers.

GENERAL ENGINEERING

Education Hall

Associate Professor Wilcox, Executive Officer

1. *Engineering Drawing.* Lettering; engineering sketching, fundamental principles of working drawings. Must be preceded or accompanied by solid geometry. Three credits; autumn, winter, spring. Warner.

2. *Engineering Drawing*. Use of instruments; reading of drawings; detail and assembly drawings; tracing, standards and conventions. Prerequisite, G.E. 1. Three credits; autumn, winter, spring. Warner, Rowlands.

3. *Drafting Problems*. Detailed analysis and solution of engineering problems by the use of drafting room methods. Descriptive geometry. Prerequisites, G.E. 1 and G.E. 2. Three credits; autumn, winter, spring. Warner, Tymstra.

7. *Engineering Drawing*. A special short course for forestry. Three credits; winter. Warner.

11. *Engineering Problems*. Training in methods of attacking, analyzing and solving engineering problems. Coaching in proper methods of work and study, including training in systematic arrangement and clear workmanship. Deals principally with dynamic problems. Student is assisted in orienting himself in his engineering work. Prerequisites, high school physics and advanced algebra. Three credits; autumn, winter, spring. Wilcox, Brown.

12. *Engineering Problems*. Elementary mechanics, statics and graphics. Continuation of the work in G.E. 11. Prerequisites, G.E. 1, 11 and Math. 51. Three credits; autumn, winter, spring. Wilcox, Smith.

21. *Plane Surveying*. Surveying methods, instruments, computations, mapping, U.S. public land surveys. Prerequisites, G.E. 1, 2 and Math. 51. Three credits; autumn, winter, spring. Van Horn.

ENGINEERING ENGLISH

For courses in Engineering English, see department of English, Comp. B, 100, 102 and Speech 103.

GENERAL LITERATURE

Denny Hall

Professor deVries, Adviser

A major in General Literature requires a reading knowledge of two foreign languages, Gen. Lit. 101, 191, 192, 193, and sufficient other courses to make a total of from 36-60 credits.

In preparation for this major and for Gen. Lit. 101, the student should earn 18 lower division credits from the following groups with not more than ten credits in any one group.

I. Greek 15-16.

II. Oriental Studies 50, 51, 52, 70, 71, 80.

III. Literature 64, 65, 66, 97.

IV. German 70, 106, 107, 108; Scandinavian Languages 109, 110, 111, 180, 181, 182.

V. French 118, 119, 120; Spanish 118, 119, 120; Italian 118, 119, 120.

VI. Liberal Arts 11; Philosophy 123.

The upper division courses listed above may be entered by qualified sophomores who have obtained the permission of the instructors.

The remaining courses offered for this major should be arranged in consultation with a major adviser. The plan of the work should include a survey of at least one national literature, some studies in each of the following groups, and a special knowledge of one of these groups.

- I. Oriental Literature.
- II. Greek and Latin Literature.
- III. Medieval and Renaissance Literature.
- IV. Classic and romantic movements in modern literature.

101. *Introduction to Theory of Literature.* The relation of literature to life in the light of recent psychological, philosophic, and social scholarship. (May receive credit in English.) Five credits; autumn and spring. deVries.

191, 192, 193. *Major Conference.* Individual conference once a week to correlate studies and for guidance in individual reading. Three credits; autumn, winter, spring. deVries.

GEOLOGY AND GEOGRAPHY

Johnson Hall

Professor Landes, Executive Officer

I. GEOLOGY

Courses described below are grouped to lead into different fields of work in geology, as follows:

(a) Mineralogy, Petrography, and Economic Geology: Courses 1, 5 or 105, 121, 123, 124, 125, 126, 127, 128, 220, 227.

(b) Physiography: Courses 1, 5 or 105, 6 or 106, 7 or 107, 112, 113, 212 and Geography 11 and 114.

(c) Paleontology: Courses 1, 5 or 105, 6 or 106, 7 or 107, 123-126, 130, 131, 132, 133, 134, 135, 230.

The year in geology for Liberal Arts students may be satisfied by Geology 1, together with one course chosen from the following: Geology 5, 6, 7, or Geography 1, 11, 114.

1. *Introduction to Earth Science.* The important facts and elementary principles concerned in a study of the earth sciences. Lectures, laboratory and field trips. Five credits; autumn and winter. Landes.

5. *Rocks and Minerals.* Sight recognition of the more common minerals, and a full discussion of many rock types. Lectures and laboratory, with field trips. Prerequisite, at least a high school course in chemistry. Five credits; autumn. Goodspeed.

6. *Elements of Physiography.* Processes and agencies affecting the earth's surface; relation of topography to structure, etc. Lectures and laboratory. Five credits; winter. Renner.

7. *Historical Geology.* Origin and evolution of the earth with emphasis on the general history of North America. Lectures and laboratory work with some field excursions. Prerequisite, five credits of geology or Zool. 1 and 2. Not open to students who have had Geol. 2. Five credits; spring. Weaver.

105. *Petrology as Applied to Engineering.* Same as Geol. 5 but with additional work and readings. Specially designed for students in civil, electrical or mechanical engineering. Prerequisite, junior standing. Five credits; autumn. Goodspeed.

106. *Principles of Physiography.* Same as Geol. 6, but with additional work and readings. Not open to students who have had Geol. 6. Prerequisite, junior standing. Five credits; winter. Renner.

107. *Principles of Historical Geology*. Same as Geol. 7, but with additional work and readings. Prerequisite, junior standing. Five credits; spring.

Weaver.

112. *Physiography of the Eastern United States*. Geologic regions of the eastern half of the United States: structure and geomorphology of each region. Prerequisite, five credits of geology. Five credits; spring. Renner.

121. *Mineralogy*. The elements of crystallography and blowpipe analysis, followed by descriptive and determinative mineralogy. Prerequisites, Geol. 5 and at least a high school course in chemistry. Five credits; spring. Goodspeed.

*122. *Field Methods*.

123. *Optical Mineralogy*. Principles and methods involved in the use of the petrographic microscope; recognition of the optical properties of the common minerals. Prerequisites, Geol. 5 and 121 (except for U.D. chemistry students). Three or five credits; autumn. Goodspeed.

124. *Petrography*. Systematic study both microscopically and in thin sections with the petrographic microscope, of igneous, sedimentary and metamorphic rocks. Prerequisites, Geol. 5, or 105, 121, 123. Three or five credits; winter. Goodspeed.

125. *Principles of Petrology*. Study of the mode of occurrence and origin of rocks and their relation to geological processes and history. Prerequisite, Geol. 124. Three or five credits; spring. Goodspeed.

126. *Sedimentary Petrography*. Principles of correlation of sedimentary rocks by their mineral constituents; methods of preparation involving the use of heavy solutions and the recognition of mineral grains under the petrographic microscope. Prerequisite, Geol. 125. Two to five credits; winter. Goodspeed.

127. *Economic Geology of Metals*. A study of the economic deposits of the chief metallic minerals, their areal distribution, production and uses. Prerequisites, Geol. 5, 6, 121, 124, 125. Five credits; winter. Goodspeed.

128. *Economic Geology of Non-metals*. A study of the principal non-metallic minerals, including petroleum, coal, structural materials, etc., their areal distribution, production and uses. Lectures and discussions of papers. Prerequisite, five credits in geology. Five credits; spring. Landes.

130. *General Paleontology*. Principles of paleontology and a general systematic study of fossils. Prerequisites, Geol. 7 or Zool. 1 and 2. Five credits; winter. Weaver.

*131. *Stratigraphy*.

132. *Invertebrate Paleontology*. A study of the more important type fossils of each geologic period. Prerequisite, Geol. 130. Five credits; spring. Weaver.

133. *Mesozoic Geology*. Geologic history of the Mesozoic era and its fauna from a world wide standpoint with special emphasis upon Europe. Prerequisites, Geol. 130 and 132. Five credits; winter. Weaver.

134. *Tertiary Geology*. A study of the Tertiary formations and their faunas with special emphasis upon Europe and correlation with North and South America. Prerequisites, Geol. 130 and 132. Five credits; spring. Weaver.

*135. *Study of Ammonites*.

190. *Undergraduate Thesis*. Preparation of a thesis in geology or any of its several branches. Completed thesis must be submitted at least one month

*Not offered in 1932-1933.

before graduation. Prerequisite, senior standing. Total of five credits allowed for thesis. Hours and credits to be arranged. Each quarter. Staff.

COURSES FOR GRADUATES ONLY

Two modern languages, a Teutonic and a Romanic, are practically necessary for graduate work in geology.

200. Field studies or advanced work in general geology. Credits and hours to be arranged. Each quarter. Staff.

212. Advanced studies or field work in physiography. Credits and hours to be arranged. Each quarter. Renner.

220. Advanced or research work in mineralogy, petrography and petrology. Credits and hours to be arranged. Each quarter. Goodspeed.

227. Advanced or research work in economic geology. Credits and hours to be arranged. Each quarter. Landes, Goodspeed.

230. Advanced or research work in paleontology and stratigraphy. Credits and hours to be arranged. Each quarter. Weaver.

II. GEOGRAPHY

The year in geography for liberal arts students may be satisfied by the following:

Geography 1 together with one course chosen from the following: Geog. 11 (or 111), 103, 104, 114.

1. *Elements of Geography*. The natural environment and man's adjustment to it; the essentials of human ecology. Five credits; autumn, winter, spring. Seeman, Earle.

Physiography. (See Geol. 6.)

Economic Geography. (See Bus. Admin. 7.) Renner, Martin.

11. *Weather and Climate*. Weather elements and controls, causes and effects of atmospheric conditions; principles and methods of weather forecasting and use of instruments. Five credits; autumn, winter. Renner.

70. *Conservation of Natural Resources*. A survey of the resources of the United States; origin of the conservation movement; methods and legislation for conservation. (By special work under the direction of the instructor, upper division students may receive upper division credit.) Five credits; autumn. Martin.

101. *Principles of Geography*. Same as Geog. 1 but with additional work and readings. Not open to those who have had Geog. 1. Prerequisite, junior standing. Five credits; autumn, winter, spring. Seeman, Earle.

102. *Economic Geography of North America*. Regional specialization in industry and geographic division of labor; sectionalism, growth of cities, internal problems, foreign policies. Prerequisites, Geog. 1 or Bus. Adm. 7 or History 8 and 9. Five credits; autumn. Martin.

103. *Economic Geography of Asia*. Countries and geographic regions; a review of the factors occasioning the present political and economic status of Asia. Prerequisite, Geog. 1 or 11, or Bus. Adm. 7 or one course in Oriental Studies. Five credits; winter. Martin.

109, 111. *Advanced Composition*. Grammar and syntax, translation and original composition, oral work, letter writing, themes. Prerequisite, three years high school or eight credits second year German. Three credits a quarter; winter, spring. Meisnest.

115, 116. *Upper Division Scientific German*. Scientific monographs, technical periodicals. Each student reports reading in his own field in weekly conferences. Prerequisite, German 60 or 61, or equivalent, or three years in high school. Two or three credits a quarter; winter, spring. Schertel.

117. *Scientific Vocabulary Study*. Class instruction with the aim of learning rapidly the basic vocabulary of literary and scientific German. Objective: *reading ability*. Study of Purin and Morgan Word Lists. Open without prerequisites to all graduate students. For undergraduates, prerequisite, Ger. 3. Three credits a quarter; autumn. Schertel.

119. *German Prose Reading*. From the best prose and dramatic works. Carl Schurz' *Lebenserinnerungen*. Thomas Mann's *Tonio Kroeger*. Oral and written reports. For majors, minors and advanced students. Prerequisite, Ger. 100 or equivalent. Three credits; autumn. Eckelman.

121. *Phonetics*. Systematic study of the nature, production and classification of the German speech sounds; stage pronunciation; phonetic transcription; oral practice. Prerequisite, Ger. 3. Two credits; autumn, spring. Meisnest.

*130-131-132. *German Institutions*.

135. *Modern Novels*. From the best prose literature after 1880. *Heimatkunst*. Literary topics, oral and written. Prerequisite, as for Ger. 119. Three credits; spring. Eckelman.

138. *Modern Drama*. Twentieth century comedy and the more serious drama. E. Goett's *Der Schwarzkunstler*; Grillparzer's *Des Meeres und der Liebe Wellen*. Literary topics, oral and written. Prerequisite, as for Ger. 119. Three credits; winter. Eckelman.

*139, 140. *Studies in German Literature*.

*141. *History of German Literature*.

*142. *Lyrics and Ballads*.

*153. *Goethe's Dramatic Works*.

180, 181, 182. *Nineteenth Century Literature*. Seminar. Kleist, Grillparzer, Hebbel, Ludwig, Raabe, Keller, Storm, C. F. Meyer. The naturalistic movement, *Heimatkunst*, the post-war expressionism. Lectures, special problems, term papers. Primarily for graduates. Three credits a quarter or six credits with consent of instructor; autumn, winter, spring. Eckelman.

COURSES FOR GRADUATES ONLY

*200-201-202. *Goethe's Lyrics and Letters*.

*203-204-205. *Storm and Stress Period*.

*206-207-208. *Romantic School*.

*220-221-222. *Inter-relations of German and English Literature*.

*250-251-252. *History of German Language*.

*256, 257, 258. *Gothic*.

259, 260, 261. *Old Saxon*. Study of the dialect and the Old Saxon *Heliand*. Three credits a quarter; autumn, winter, spring. Groth.

Teachers' Course in German. See Education 75L.

*Not offered in 1932-1933.

COMPARATIVE PHILOLOGY

The following courses in Comparative Philology are available in the department of Scandinavian Languages and Literature.

190-191. *Introduction to the Science of Languages*. Two credits; autumn, winter. Vickner.

192. *Life of Words*. Two credits; spring. Vickner.

HISTORY

Denny Hall

Professor Meany, Executive Officer

Requirements of the Department

The University requirements in history may be satisfied by one of the following courses:

Medieval and Modern European History (1-2). It is desirable that this course be selected in fulfillment of the history requirements and that it be taken in the freshman year. It is repeated each quarter.

History of the United States (57-58-59). Primarily for sophomores.

English Political and Social History (5-6). Open without prerequisites to freshmen, sophomores and upperclassmen.

Ancient History (71-72-73). Open without prerequisites to sophomores and upperclassmen.

For a major at least 50 per cent of the credits in the department must be obtained in courses carrying upper division credit. Course 1-2 is required of all history majors.

It is recommended that all history majors shall take in excess of departmental requirements additional work in history and in certain related fields.

Selection should be made under advice.

Requirements of the department and of the School of
Education for Teaching Certificates

Prospective teachers of history as a major or minor subject in high schools must secure the recommendation of the department of history and also fulfill the requirements of the School of Education for the attainment of teaching certificates. For the former they must become acquainted with the elementary facts requisite for the teaching of courses in history, civic government, economics and sociology taught in the high schools of the state and have specialized knowledge in their chosen fields. Courses in history, government, economics, anthropology and sociology should be selected with this aim in view.

Joint requirements of the history department and of the School of Education with respect to departmental recommendation for teaching positions and to teaching certificates are to be satisfied as follows:

A. Attainment of standards of scholarship formulated in the requirements of the School of Education.

B. Satisfaction of requirements for an academic major or minor.

The former must have a minimum of 48 credits, and the latter must have a minimum of 20 credits. (See announcements of the School of Education concerning history majors and minors.)

I. FOR ACADEMIC MAJOR

1. *Required*: 1-2, Medieval and Modern, ten credits; 57-58-59, United States, 139, 140, 141, United States, or 143, 144, 145, United States, nine credits, or 147, 148, 149, United States, 11 credits; 5-6, English History, ten credits; 71-72-73, Ancient History, nine credits; electives from preferential group below, ten credits. Minimum total, required, 48 credits.

2. *Preferential Group* of courses from which ten additional credits must be taken, of which five are to be selected from upper division courses in European, English, or ancient history courses; and the remainder from upper division courses in American history.

II. ACADEMIC MINOR

1. *Required*: 1-2. Medieval and Modern European History (or its equivalent), ten credits.

2. Choice between 139-140-141, 143-144-145, or 147-148-149, Advanced American History, nine to 11 credits; or 71-72-73, Ancient History, nine credits; or upper division European History, including English, ten credits; also additional electives, one to five credits. Minimum total, 20 credits.

COURSES OFFERED

1-2. *Medieval and Modern European History*. General survey from the Roman world empire of Augustus to our own times. Five credits a quarter; autumn, winter, spring. Lucas, Dobie.

The above course is repeated beginning with the winter quarter.

5-6. *English Political and Social History*. Political, social, economic and intellectual development of the English people from the Saxon conquest to the present time. By special work under direction of the instructor, upper division students may receive upper division credit. Five credits a quarter; autumn, winter. Barnes.

8. *Westward Movement in the U.S. to 1812*. The advance of the frontier and its effect on American ideals from the colonial period to the war of 1812. Two credits; autumn. Dahlin.

9. *Westward Movement in the U.S., 1812-1860*. The frontier from the war of 1812 to the civil war. Two credits; winter. Dahlin.

10. *The Agrarian Crusade in the U.S., 1860-1924*. The agrarian movements for control, their causes and results. Two credits; spring. Dahlin.

57-58-59. *History of the United States*. A general survey with emphasis on political and economic history. Not open to freshmen. Three credits a quarter; autumn, winter, spring. McMahon.

60. *Makers of the Nation*. Period of Revolution and the Constitution. Two credits; autumn. Meany.

61. *Makers of the Nation*. Period of the Monroe Doctrine and bound-ary settlements. Two credits; winter. Meany.

62. *Makers of the Nation*. Period of national development. Two credits; spring. Meany.

71-72-73. *Ancient History*. History of the ancient Mediterranean world, Greece and Rome. By special work under direction of the instructor, upper

division students may receive upper division credit. Not open to freshmen. Three credits a quarter; autumn, winter, spring. Creer.

101. *Alexander the Great: His Empire and His Successors*. Three credits; winter. Creer.

103. *The Roman Republic*. Three credits; winter. Creer.

104. *The Roman Empire from Augustus to Justinian*. Three credits; spring. Creer.

107. *English Constitutional History*. Development of legal and governmental institutions of the English people to the present time. Valuable for students of political science and law as well as history. Prerequisite, Hist. 5-6, except for upper division students who are majoring in economics, sociology and political science, or who are taking 5-6. Open to pre-law sophomores who have taken 5-6 in freshman year. Five credits; spring. Beardsley.

111. *Greek Political Institutions*. Three credits; spring. Creer.

113. *Medieval Civilization*. Five credits; spring. Lucas.

114. *The Culture of the Renaissance*. Five credits; autumn. Lucas.

115. *The Reformation*. Five credits; winter. Lucas.

*117. *France from the Reformation to the French Revolution*.

125. *Great European Treaties, 1453-1878*. Prerequisite, Hist. 1-2. Five credits; spring. Quainton.

129. *The French Revolution and Napoleonic Era*. Prerequisite, Hist. 1-2. Five credits; winter. Quainton.

130. *Europe 1814-1870*. Prerequisite, Hist. 1-2. Five credits; spring. Quainton.

131. *Europe Since 1870: The War and its Background*. Historical background, fundamental causes and progressive development of events and issues in the world war. Five credits; winter. Barnes.

139. *The Southern Colonies*. Open only to juniors, seniors, and graduates. Three credits; autumn. Dahlin.

140. *The New England Colonies*. Open only to juniors, seniors and graduates. Three credits; winter. Dahlin.

141. *American Revolution*. Open only to juniors, seniors and graduates. Three credits; spring. Dahlin.

143. *History of the United States, 1789-1815*. Open only to juniors, seniors and graduates. Three credits; autumn. Dahlin.

144. *History of the United States, 1815-1846*. Open only to juniors, seniors, and graduates. Three credits; winter. Dahlin.

145. *History of the United States, 1846-1860*. Open only to juniors, seniors, and graduates. Three credits; spring. Dahlin.

147. *History of the Civil War Period*. Open only to juniors, seniors, and graduates. Three credits; autumn. McMahon.

148. *History of the Reconstruction Period*. Open only to juniors, seniors and graduates. Three credits; winter. McMahon.

*Not offered in 1932-1933.

149. *History of National Development.* Development of the American nation from the close of the reconstruction period to the present time. Open to juniors, seniors, graduates. Five credits; spring. McMahon

153. *The Pacific Rim.* History of the countries bordering upon the Pacific Ocean with especial reference to recent changes. Open to juniors, seniors and graduates. Three credits; autumn. Meany.

154. *Spain in America.* Rise and fall of Spanish power in America, and an outline of the history of the Spanish-American republics. Open to juniors, seniors and graduates. Three credits; winter. Meany.

155. *History of Canada.* Canadian development to the present time. Open to juniors, seniors and graduates. Three credits; spring. Meany.

157-158-159. *History of American Diplomacy.* American relations with foreign powers from colonial times to the present. Open to juniors, seniors and graduates. Two credits a quarter; autumn, winter, spring. Meany.

160. *History in the High School.* The meaning, value, aims and place of history in the high school curriculum; historical problems. Prerequisite for Edu. 75M. Two credits; autumn. McMahon.

163-164-165. *Northwestern History.* From the earliest voyage to the Pacific Northwest to the organization of the present form of government. Open to juniors, seniors and graduates. Two credits a quarter; autumn, winter, spring. Meany.

181. *History of the British Empire Since 1783.* (Not open to students who have had Hist. 81.) Five credits; winter. Dobie.

182. *England in the 19th Century.* Important social, religious, intellectual, economic developments. Growth of democracy, changes in political life. Five credits; spring. Dobie.

185. *Eighteenth Century England, 1714-1793.* Open to juniors, seniors and graduates. Five credits; autumn. Barnes.

Teachers' Course in History. See Education 75M.

COURSES FOR GRADUATES ONLY

201. *Historiography.* Normally the first graduate course in history. Required of all graduates majoring in history. Three credits; autumn. Creer.

207-208-209. *Seminar in Greek and Roman History.* Three credits a quarter; autumn, winter, spring. Creer.

211-212-213. *Seminar in European History (1300-1600).* Three credits a quarter; autumn, winter, spring. Lucas.

215-216. *Seminar in English History.* Prerequisite, Hist. 185. Five credits each; winter, spring. Barnes.

221-222-223. *Seminar in American History.* Three credits a quarter; autumn, winter, spring. McMahon.

227-228-229. *Seminar in State History.* Three credits a quarter; autumn, winter, spring. Meany.

*231. *Seminar in European History (1600-1815).*

232-233. *Seminar in European History (1600-1815).* Three credits a quarter; winter, spring. Quainton.

HOME ECONOMICS

Home Economics Hall

Professor Raitt, Executive Officer

(For curricula in Home Economics see College of Science section.)

Food Selection and Preparation. Courses 9, 115, 116, 117, 120, *121, 200.*Nutrition.* Courses *103, 104, 105, 107-108, 190, 191, 204, 205, 206, 214, 215.*Household Sanitation, Furnishings, Administration.* Courses 45, 46, 47, 109, 144-145, 148, 245.*Textiles and Clothing.* Courses 25-26, 101, 102, 112, 113, 114, 119, 133, 160, 161, 188, 198, 207, 208, 209, 210, 211, 212.*Institutional Management.* Courses 122, 123, 124, 125, 220, 221, 222.*Home Economics Education.* Courses 202, Edu. 75NA, 75NB.

9. *Nutrition for Hospital Students.* Composition and nutritive value of foods; food preparation; physiological needs in relation to food. Open to student nurses only. Six credits; autumn, winter, spring. Bliss, O'Keefe.

25-26. *Textiles.* Economic and esthetic values in all types of standard and new fabrics; relation of raw material, construction, and finish to quality and cost of fabrics. Three credits a quarter; autumn, winter, spring. Denny.

45, 46. *Household Management.* Housing standards and laws; principles of scientific management; personal and household accounts; materials for home interiors, consideration of the relative efficiency of labor saving devices and of the chemistry and adequacy of cleaning reagents. Prerequisites, or parallels, Physics 89-90, Chem. 1-2. Three credits a quarter; autumn, winter, spring. O'Keefe.

47. *Home Furnishing.* Structural art principles applied to treatment of interiors. Cost estimates adapted to various income levels. Prerequisite, P.S.D. 9. Saturday excursions. Three credits; winter, spring. Denny.

Health Education. (See P.E. 8-9 and 10.) Food selection in relation to nutritive requirements of various age groups. Two lectures a week for one quarter. Two credits for 8-9; five credits for 10; autumn, winter, spring. O'Keefe, Bliss.

101, 102. *Needlecraft.* Interpretation of the needle arts of various nationalities. Application of authentic and original designs. Prerequisites, H.E. 112, and P.S.D. 9. Two credits a quarter; autumn, winter. Payne.

*103. *Nutrition for Graduate Nurses.*

104. *Nutrition.* .Open to men only. Of special interest to majors in physical education, military training, mining, and forestry. Two credits; spring. Rowntree.

105. *Nutrition.* (For student nurses.) principles of human nutrition. Prerequisites, H.E. 9, Chem. 1-2, Physiol. 7. Five credits; spring. Bliss.

107-108. *Nutrition.* Fundamental principles of human nutrition. Prerequisites, H.E. 115, Chem. 135-136. Pre-medical students and chemistry majors may enroll with instructor's consent. Prerequisite to all advanced courses in nutrition. Five credits a quarter; autumn, winter. Rowntree.

*Not offered in 1932-1933.

109. *Household Budgets*. Survey of cost of living studies. Factors that control expenditures and distribution at different income levels. Five credits; winter. Raitt.

112, 113, 114. *Costume Design and Construction*. Art applied to costume design. Economic problems in textile and clothing industries. Prerequisite, P.S.D. 9. Three or five credits, depending upon diagnostic tests; Three credits a quarter; autumn winter, spring. Payne.

115, 116, 117. *Food Preparation*. Relation of the fundamental sciences to the processes and techniques of food preparation. Place and significance of the economic and esthetic aspects of food. An introduction to research methods. Prerequisites, Chem. 1-2, Physiol. 7. Three or five credits, depending upon diagnostic tests, for 115. Three credits for 116. Five credits for 117; autumn, winter, spring. Dresslar.

120. *Food: Advanced Food Preparation*. Contribution of various countries to the art of food preparation. Food customs and their significance. A survey of the literature of the subject. Prerequisite, H.E. 116. Three credits; winter. Dresslar.

*121. *Institution Food Preparation*.

122. *Institution Marketing*. Factors influencing quality, grade and cost of food with a view to developing accurate judgments in food purchase. Prerequisites, H.E. 116, 108, 124. Three credits; autumn. Terrell.

123. *Institution Management I*. Organization, housing and furnishing standards for institutions. Budgets. Prerequisites, H.E. 117, 107-108. Three credits; spring. Raitt.

124. *Institution Management II*. Efficiency analysis. Scientific principles applied to actual practice. One hour conference and eight hours laboratory a week. Prerequisites, H.E. 116, 108, Econ. 1. Three credits; autumn. Terrell.

125. *Institution Equipment*. Construction, operation and care of equipment; routing of work. One hour conference and eight hours laboratory work a week. Prerequisites, H.E. 116, 106 or 108, 124. Three credits; spring. Terrell.

133. *History of Costume*. Fashion as an expression of the esthetic, social and economic life. Creative designing. Of special interest to students in dramatics and commercial costume design. Prerequisites, H.E. 112, 113, 114, P.S.D. 169. Five credits; spring. Payne.

144-145. *Household Economics*. Economics of the household, personal and household budgets. Organization of the household. Prerequisites, Econ. 1, Soc. 1, junior standing. Two credits a quarter; winter, spring. Raitt.

148. *Home Management House*. Organization, financial management, records, housekeeping, food preparation and service, and hospitality. Two credits; winter, spring. O'Keefe.

160, 161. *Advanced Costume Design and Construction*. Creative designing of costumes and accessories. The social significance of style control. Prerequisites, H.E. 114, P.S.D. 9 and 169. Three credits a quarter; winter, spring. Payne.

188. *Advanced Textiles*. Analysis of fabrics. Methods, technique and evaluation of testing. Textile legislation and standardization. Prerequisites, H.E. 25-26, Econ. 1. Two credits; autumn. Denny.

*Not offered in 1932-1933.

190. *Child Nutrition and Care*. Problems of maternity and infancy; evaluation of methods of improving health of children. Work centers around University child nutrition service. Open to advanced undergraduates and graduates. Five credits; winter, spring. Rowntree.

191. *Diet Therapy*. For students who expect to qualify as professional dietitians. Open to advanced undergraduates and graduates. Prerequisite, H.E. 108. Four credits; spring. Rowntree.

198. *Historic Textiles*. A collection of rare materials is available for study. Prerequisite, H.E. 25, 143, 188, P.S.D. 9, 10, 11 or equivalent. Three credits; spring. Denny.

Teachers' Course in Home Economics. See Education 75NA, 75NB.

COURSES FOR GRADUATES ONLY

200. *Food and Nutrition*. Investigation of problems in food supply and preparation based upon related sciences. Prerequisite, H.E. 117. Three credits; winter. Dresslar.

202. *Home Economics Education*. Status of home economics education; critical study of achievements, trends, functions and relationships. Credits to be arranged; winter. Raitt.

204, 205, 206. *Research in Nutrition*. Individual research in mineral or energy metabolism, animal feeding, or dietary studies. Credits to be arranged; autumn, winter, spring. Rowntree.

207, 208, 209. *Research in Textiles*. Prerequisites, H.E. 26, Econ. 1. Credits to be arranged; autumn, winter, spring. Denny.

211, 212. *Research in Costume Design*. Prerequisites, H.E. 114, 133. Credits to be arranged; autumn, winter, spring. Payne.

214, 215. *Readings in Nutrition*. Library research. Prerequisite to other graduate courses in nutrition. Five credits; autumn. Two credits; winter. Rowntree.

220, 221, 222. *Research in Institution Management*. Problems dealing with food service and housing units in various types of institutions. Prerequisites, H.E. 121, 122, 123, 124, 125, or equivalent. Credits to be arranged. Hours to be arranged; autumn, winter, spring. Terrell.

245. *Research in Household Economics*. Prerequisites, H.E. 144-145, Econ. 1. Credit to be arranged; autumn. Raitt.

JOURNALISM

Commerce Hall

Professor McKensie, Executive Officer

1. *Journalism as a Profession*. Required in the freshman year of pre-journalism majors. One credit; autumn. McKenzie.

2. *The Newspaper and Society*. Required in the freshman year of pre-journalism majors. Prerequisite, Jour. 1, except for non-journalism majors. One credit; winter. McKenzie.

3. *Elements of Publishing*. Head styles; proof-reading; binding; engraving; press work; problems of production. Required in the freshman year of pre-journalism majors. Three credits; spring. Kennedy.

51. *News Writing*. Not open to freshmen. Required in the sophomore year of pre-journalism majors. Five credits; autumn, winter, spring. Benson.

61. *The Smaller Newspaper*. Problems peculiar to the community weekly. Not open to freshmen. Three credits; spring. Jones.

90,91,92. *Current Events*. Current state, national and world movements. Not open to freshmen. One credit a quarter; autumn, winter, spring.

101. *Reporting*. Required of majors in journalism. Prerequisite, Jour. 51. Five credits; autumn, winter, spring. Christian, Benson.

120. *Copy Reading*. Required of majors in journalism. Prerequisite, Jour. 101. Three credits; autumn, winter, spring. Benson.

*125. *Principles of High School Journalism*.

130. *Fundamentals of Advertising*. The theory of advertising display, attention devices, media. Five credits; autumn. Jones.

131. *Display Advertising*. Layouts and copy for publications advertising. Prerequisite, Jour. 130. Five credits; winter, spring. Jones.

133. *Advertising Typography*. Type families; application of type; type problems. Prerequisite, Jour. 3. Five credits; autumn. Kennedy.

135. *Publicity*. General publicity methods. Prerequisite, Jour. 51. Two credits; winter. Benson.

136. *Comparative Journalism*. Prerequisite, Jour. 51. Three credits; winter.

138. *History of American Journalism*. Prerequisite, Jour. 51, except for non-journalism majors. Three credits; autumn. Jones.

140. *Problems of Publishing*. Business office management. Required of majors in journalism. Prerequisite, Jour. 3. Five credits; winter. Kennedy.

145. *Law of the Press*. Prerequisite, Jour. 51, except for non-journalism majors. Three credits; winter. Jones.

150. *Editorial Writing*. Prerequisite, Jour. 101. Three credits; spring. Jones.

152. *Specialized Reporting and Advanced News Writing*. Required of seniors in journalism. Prerequisite, Jour. 101. Five credits; spring. Christian.

171-172. *Magazine and Feature Writing and Trade Journalism*. Articles graded according to probable marketability. Three credits a quarter; autumn, winter. Jones.

173, 174-175. *Short Story Writing*. Critical appreciation and practical work in the writing of short stories. Not open to lower division students. Signature of instructor necessary before registration. Five credits a quarter; autumn, winter, spring. McKenzie.

195,196,197. *Daily Newspaper Practice*. A laboratory course. Registration restricted to 15 students who must have upper division standing. Registration by special permission of dean of journalism only. A limited number of additional students may register, without credit, by special permission of the instructor. One to three credits; autumn, winter, spring. Limit of nine credits to one student. Christian.

* Not offered in 1932-1933.

199. *Problems of Journalism*. Actual research work in the field. Open to seniors and graduate students only. Two to four credits; autumn, winter, spring. McKenzie.

201. *Propaganda*. Crystallization of public opinion. Two credits; spring. McKenzie.

225,226,227. *Advanced Short Story*. Prerequisites, Jour. 173, 174-175. Class restricted to a maximum of eight students. Fourth year students or special students who have had short stories published in standard magazines, or who may have equivalent professional qualifications, may be admitted by permission of the instructor. Two to four credits a quarter; autumn, winter, spring. McKenzie.

250. *Research in Journalism*. Admission only by consent of instructor. Three to five credits; autumn, winter, spring. Staff.

LAW

Commerce Hall

Professor Shepherd, Executive Officer

FIRST YEAR

All first year subjects are required.

†100. *Introduction of Law*. Shepherd's Syllabus and Selected Materials and Cook and Hinton's Cases on Common Law Pleading. Place of law in society; content, classification, and determination of rules and principles of law; historical development of English courts and procedure; the common law system of actions and pleading; American judicial system, federal and state. Five credits; autumn. Ritchie.

†101. *Contracts and Rules of Damages Applicable to Contract Actions*. Williston's Cases. Four credits; autumn, winter, spring. Shepherd.

†102. *Torts*. Bohlen's Cases, 3rd ed. Three credits a quarter; autumn, winter, spring. Richards.

103. *Personal Property*. Bigelow's Cases on Personal Property. Three credits; autumn. Cheadle.

†104. *Real Property*. Case book to be announced. Three credits a quarter; winter, spring. Mechem.

†105. *Criminal Law and Procedure*. Case book to be announced. Three credits; winter and spring. O'Bryan.

SECOND AND THIRD YEARS

†110. *Sales*. Woodward's Cases on Sales, 2nd ed. Three credits a quarter; winter, spring. Ayer.

111. *Wills and Administration*. Mechem and Atkinson's Cases. Testamentary capacity; undue influence; fraud; execution; integration; revocation; condition and mistake; revalidation; function and necessity of probate and administration; management of the estate; distribution and settlement of the estate. Four credits; autumn. O'Bryan.

†No examination for credit until completion of the entire course.

112. *Agency*. Case book to be announced. Five credits; autumn. Ayer.
113. *Persons*. Woodruff's Cases on Persons and Domestic Relations, 3rd ed. Three credits; spring. Lantz.
- †114. *Equity*. Cook's Cases on Equity. Three credits a quarter; autumn, winter, spring. Nottelmann.
- †115. *Evidence*. Hinton's Cases on Evidence, 2nd ed. Three credits a quarter; autumn, winter, spring. Richards.
- †116. *Negotiable Instruments*. Britton's Cases on Bills and Notes. Three credits a quarter; autumn, winter. Lantz.
117. *Legal Ethics*. Costigan's Cases. Two credits; autumn. Shefelman.
118. *Conflicts*. Lorenzen's Cases on Conflict of Laws. Five credits; spring. Lantz.
119. *Constitutional Law I*. Case book to be announced. Making and changing constitutions; function of judiciary in enforcing constitutions; separation and delegation of powers of government; personal and religious liberty; protection to persons accused of crime; interstate privileges and immunities of citizens; operation of fourteenth amendment in securing civil rights; due process and equal protection of law; procedure, protective and regulative power (police power). Four credits; autumn. Cheadle.
120. *Constitutional Law II*. Case book to be announced. Political rights; general scope of federal powers, federal taxation, regulation of commerce; intergovernmental relations. Four credits; winter. Cheadle.
121. *Administrative Law*. Frankfurter and Davison's Cases. Administrative power and action; orders; discretion; notice and hearing; form and proof of official acts. Relief against administrative action; actions against officers and the community; extraordinary legal remedies; equitable relief; administrative finality. Four credits; winter. Cheadle.
122. *International Law*. Hudson's Cases. (May receive political science credit.) Three credits a quarter; autumn, winter. Martin.
- †123. *Private Corporations*. Richards' Cases on Private Corporations, 2nd ed. Three credits a quarter; winter, spring. Ayer.
124. *Community Property*. Mechem's Cases on Community Property. The laws of Washington regarding the acquisition, control and disposition of property by husband and wife; the liability of such property for the obligations of each. Three credits; winter. Mechem.
- *125. *Trade Regulation*. Oliphant's Cases.
- †126. *Trusts*. Costigan's Cases on Trusts. Three credits a quarter; autumn, winter. Nottelmann.
- †127. *Code Pleading*. Hinton's Cases, 2nd ed. Two credits a quarter; winter, spring. Richards.
128. *Use of Law Books*. The four avenues of approach in the search for authorities, detailed studies in the use of the American Digest System, Annotated Reports Series, Corpus Juris and Ruling Case Law. Two credits; winter. Beardsley.
129. *Briefmaking*. Preparation of briefs on points of law for argument

†No examination for credit until completion of the entire course.

*Not offered in 1932-1933.

of motions or demurrers, trial briefs, and briefs on appeal. Two credits; spring. Beardsley.

130. *Legal Bibliography*. Sources and use of constitutions, federal and state codes, opinions of attorneys general, rules of court, federal and state reports, National Reporter System. Two credits; autumn. Beardsley.

*131. *Quasi-Contracts*.

132. *Rights in Land*. Case book to be announced. Four credits; autumn. Mechem.

133. *Public Utilities*. Smith and Dowling, Cases on Public Utilities. Four credits; spring. Nottelmann.

134. *Partnership*. Crane and Magruder's Cases. Four credits; autumn.

135. *Landlord and Tenant*. Cases on Landlord and Tenant, selected from Aigler's Cases on Titles, and Bigelow's Cases on Rights in Land (bound in one volume) and selected materials. Three credits; spring. Mechem.

136. *Insurance*. Vance's Cases on Insurance. Three credits; winter.

137. *Water Rights*. Bingham's Cases on Water Rights. Three credits; autumn. Lantz. O'Bryan.

138. *Future Interests*. Kales' Cases on Future Interests. Five credits; autumn. Mechem.

†139. *Administration of Debtors' Estates*. Sturges' mimeographed materials. Comparative study of the use of different methods of liquidating debtors' estates; composition agreements; assignments for the benefit of creditors; receiverships and bankruptcy proceedings. Three credits a quarter; winter, spring. Ritchie.

*140. *Mining Law*. Costigan's Cases on Mining Law. O'Bryan.

141. *Admiralty*. Sayre's Cases on Admiralty. Four credits; autumn.

†142. *Practice and Procedure I*. Selected cases and material on nature of judicial action, judicial remedies, form and commencement of action, courts and their jurisdiction, original and appellate, venue, process, statutes of limitations. Three credits; autumn. Lantz. O'Bryan.

†143. *Practice and Procedure II*. The drawing of all necessary papers in bringing, attacking, defending (except actual trial), serving and levying of writs and process, in the following suits and actions: attachment, garnishment, claim and delivery, forcible entry and unlawful detainer, appointment of receiver, injunction, foreclosure of mortgages, real and chattel, foreclosure of lien on real estate and chattels; levy and sale of realty and personalty, supplementary proceedings; justice court, appeal to superior court and appeals to supreme court, certiorari, mandamus, prohibition, quo warranto; examination of records for mortgages, liens, etc. Grand jury, proceeding before magistrate, binding over, arraignment, plea indictment, etc., habeas corpus, extradition. Three credits; winter. O'Bryan.

†144. *Practice and Procedure III*. Probate proceedings complete, approximately six weeks. Trials to the court and before jury, upon statement of facts, pleadings, introduction of evidence (drawing of jury and instructions), argument, findings of fact and conclusions and judgment. Three credits; spring. O'Bryan.

†No examination for credit until completion of the entire course.

*Not offered in 1932-1933.

†Two hours additional work may be required in order to get the prescribed credits.

†145. *Credit Transactions*. Sturges' Cases on Credit Transactions. Accommodation contracts; mortgages; pledges; conditional sales; dealer's financing; security holders' documents, protection and priorities; enforcement proceedings and rights to redeem. Three credits, autumn, spring; four credits, winter. Ritchie.

146. *Taxation*. Rottschaefer's Cases. Four credits; spring. Cheadle.

147. *Municipal Corporations*. Case book to be announced. / Four credits, spring. Shefelman.

198. *Research Problems in Law*. Hours and credits (not to exceed three) by special arrangement; autumn, winter, spring.

199. *Seminar in Administrative Law*. The purpose of this course is to afford opportunity to properly prepared advanced students to do independent research and investigation in some modern problem of administrative law. Group discussion and individual oral and written reports. Prerequisite, Law 121. Three credits, spring. Cheadle.

LIBERAL ARTS

Education Hall

Professor Cory, Executive Officer

1. *Introduction to Modern Thought*. Especially for lower division students, but open to all. Upper division students may obtain upper division credits on the basis of extra reading and conferences. Five credits; autumn, spring. Cory.

11. *Introduction to the Study of the Fine Arts*. Five credits; winter, summer. Cory.

214, 215, 216, 217. *Recent Aesthetic Theory and Literary Criticism*. Two to eight credits a quarter; autumn, winter, spring, summer. Cory.

LIBRARY SCIENCE

Library

Assistant Professor Worden, Executive Officer

The following courses are open only to students registered in the Library School.

151, 152, 153. *Books and Their Authors*. A rapid survey of the literature of the principal nations of the world. Required of pre-library students. Five credits; autumn, winter, spring. Andrews.

170. *Introduction to Children's Work*. A basic course. Three credits; autumn. Andrews.

172. *Introduction to Library Work*. Library organization, problems of different types of libraries and current library topics. Two credits; autumn. Worden.

†No examination for credit until completion of the entire course.

‡Two hours additional work may be required in order to get the prescribed credits.

NOTE: An average of 14 credits in each quarter is required, making a minimum total of 125 credits for completion of the law course.

Students are limited to 14 credits per quarter, except upon special permission of the dean.

175, 184, 191. *Cataloguing, Classification, Subject Headings*. Four credits, autumn; three credits, winter; three to five credits, spring. Alfonso.

177, 185. *Reference*. Gives a working knowledge of important types of reference books. Three credits, autumn; two to three credits, winter. Smith, Alfonso.

178. *History of Books and Libraries*. Three credits; spring. Alfonso.

179, 188, 196. *Books for Libraries*. A study of the book field, and the problems of selecting books. Four credits, autumn; two credits, winter; three credits, spring. Worden.

180. *Story Telling*. Selection and adaptation of stories, planning story hour programs, practice in story telling to children. Prerequisites: Lib. Sci. 181, 183, 190 required if this course is elected. (Consult dean on electives.) Three credits; spring. Andrews.

181. *Advanced Children's Work*. Organization of a children's department; problems of book buying and administration. (Consult dean on electives.) Two credits; spring. Andrews.

182. *School Library Administration*. Prerequisites: Lib. Sci. 183, 195 required if this course is elected. (Consult dean on electives.) Two credits; spring. Worden.

183, 190. *Selection of Books for Children*. (Consult dean on electives.) Three credits; winter, spring. Andrews.

186. *Practice*. Four weeks (42 hours a week) of practice work under expert supervision in neighboring Northwest libraries. Five credits; winter. Worden.

189. *Organization and Administration of Small Libraries*. Two credits; winter. Putnam.

192. *Administration*. Problems of library management, buildings, equipment, finance, and publicity. Two credits; spring. Putnam.

193. *Government Documents*. Acquisition, care and reference use of federal, state, municipal and foreign publications. Two credits; spring. Alfonso.

194. *Bibliography, Subject and Trade*. Preparation of bibliographic lists; lectures on sources and methods of work. Two credits; spring. Smith, Alfonso.

195. *Book Selection for School Libraries*. Prerequisites: 182 and 183 required if this course is elected. Three credits; spring. Worden.

The following courses are open to Library School graduates only, on permission of the dean of the Library School. The work will be a co-ordination of theory and practice, the theory to be taken at the University and the practice to be taken in half-time positions at the Seattle Public Library. All courses are required and must be taken in the prescribed order. The following courses, outside of the Library School, are required: Child Psychology, Child Welfare and Education. It is recommended that they be taken as preparatory courses, but they may be carried along with the advanced work. Courses in the following are also strongly recommended as preparatory courses: Greek literature, Latin literature, early literature of various countries, playground and recreation.

201, 202, 203. *Children's Literature*. A comparative and critical study of books for children, and a history of the development of literature for children. Two credits; autumn, winter, spring. Andrews.

204, 205, 206. *Administration of Children's Libraries*. One credit; autumn, winter, spring. Andrews.

207, 208, 209. *Story Telling*. A thorough study of story telling sources, as well as actual practice in telling stories to children. Two credits; autumn, winter, spring. Andrews.

210, 211, 212. *School Work*. Special problems of school libraries, and methods of giving instruction to children in the use of the library. One credit; autumn, winter, spring. Andrews.

213, 214, 215. *Field Work*. Each student will spend 21 hours each week in an assigned branch of the Seattle Public Library. Seven credits; autumn, winter, spring. Andrews.

MATHEMATICS

Philosophy Hall

Professor Moritz, Executive Officer

MINIMUM REQUIREMENTS OF THE DEPARTMENT

For a major in mathematics, 36 credits; including courses 4, 5, 6, 107, 108, 109, plus six additional upper division credits.

For an academic minor in the School of Education, 20 credits, including courses 4, 5 and 6.

Candidates who are not majors in mathematics but wish to teach mathematics as a minor subject must have earned at least 20 credits in mathematics, including courses 4, 5 and 6, before receiving the recommendation of the department.

Major students in mathematics should, if possible, select their courses in mathematics in the following order: Math. 4, 5, 6, 107, 108, 109. In addition they should elect physics as their freshman science.

Courses 1 and 2 must be taken by all students who select mathematics as a major or a minor, if these subjects were not taken in the high school.

1. *Advanced Algebra*. Algebra from quadratics on. Prerequisite, one year of high school algebra. Five credits; autumn, winter, spring.

2. *Solid Geometry*. Prerequisite, one year of plane geometry. Five credits; autumn, winter, spring.

4. *Plane Trigonometry*. For students in the Colleges of Liberal Arts and Science. Prerequisites, one and a half years of algebra and one year of plane geometry. Five credits; autumn.

5. *College Algebra*. Prerequisite, Math. 1 or one and one-half years of high school algebra. Five credits; winter.

6. *Analytic Geometry*. For students in the Colleges of Liberal Arts and Science. Prerequisites, Math. 1, 2 and 4. Five credits; spring.

11. *Theory of Investments*. Interest and annuities; annuities, amortization, capitalization and depreciation, sinking funds, etc. Prerequisites, one year algebra, one year geometry. Five credits; autumn, winter, spring.

12. *Mathematics of Finance and Insurance*. Prerequisite, Math. 11. Five credits; spring.

13. *Elements of Statistical Method*. Prerequisite, one year algebra, one year plane geometry. Five credits; each quarter. Gavett.

51. *Trigonometry*. For engineering, mines and architecture and forestry students. Prerequisites, one and one-half years algebra and one year plane geometry. Four credits; autumn, winter, spring

52. *College Algebra*. For engineering, mines and architecture and forestry students. Prerequisite, Math. 51. Four credits; autumn, winter, spring.

53. *Analytic Geometry*. For engineering, mines and architecture students. Prerequisite, Math. 52. Four credits; each quarter.

54, 55, 56. *Mathematics for Architects*. Prerequisite, one and one-half years algebra, one year plane geometry. Three credits a quarter; autumn, winter, spring.

61, 62, 63. *Calculus*. For students in the Colleges of Engineering and Mines. Prerequisites, Math. 2 and 53. Three credits a quarter; autumn, winter, spring.

101. *Advanced Trigonometry*. Trigonometric series, DeMoivre's and Euler's theorems, hyperbolic functions. The elements of spherical trigonometry. Prerequisites, Math. 2 and 4 or 51. Two credits; autumn. Moritz.

102. *Advanced Analytical Geometry*. Poles and polars, the general conic, abridged notation. Prerequisite, Math. 6 or 53. Two credits; winter. Moritz.

103. *Solid Analytical Geometry*. Fundamental theorems regarding the planes, lines, cones, cylinders, and quadric surfaces in general. Prerequisites, Math. 2 and 6 or 53. Two credits; spring. Moritz.

107, 108, 109. *Calculus*. Differential and integral calculus, primarily for students in the College of Science. Prerequisite, Math. 6. Five credits a quarter; autumn, winter, spring. Moritz, McFarlan.

*113. *Mathematical Statistics*.

114, 115. *Ordinary and Partial Differential Equations*. Prerequisite, Math. 109 or 63. Three credits; autumn. Four credits; winter. Ballantine, Jerbert, Winger.

116. *Advanced Calculus*. Prerequisites, Math. 114, 115. Five credits; spring. Carpenter.

117, 118, 119. *Projective Geometry*. For teachers and professional mathematicians. Prerequisite, calculus, unless taken concurrently. Two credits each quarter; autumn, winter, spring. Winger.

*121-122-123. *Finite Collineative Groups*.

131. *Selected Topics in Mathematics*. A course in directed reading for prospective high school teachers. Prerequisite, Math. 109. Three credits; spring. Jerbert.

*161, 162, 163. *Analytical Mechanics*.

164, 165, 166. *Partial Differential Equations of Mathematical Physics*. Math. 114 should be taken before or concurrently. Three credits a quarter; autumn, winter, spring. Neikirk.

Teachers' Course in Mathematics. See Education 75Q.

COURSES FOR GRADUATES ONLY

Prerequisites. All 200 courses require a full year's work in differential and integral calculus as a prerequisite and in addition the consent of the instructor in charge.

*201, 202, 203. *Projective Differential Geometry.*

*204, 205, 206. *Modern Algebra.*

*207, 208. *Analysis Situs.*

*209. *Finite Differences.*

*211, 212, 213. *Foundations of Mathematics.*

*214, 215, 216. *Modern Analysis.*

*221, 222, 223. *Higher Plane Curves.*

*224, 225, 226. *Functions of Real Variables.*

*227, 228, 229. *Theory of Numbers.*

*231, 232, 233. *Theory of Infinite Processes.*

234-235-236. *Analytical Dynamics.* Based on text by Whittaker. Three credits each quarter; autumn, winter, spring. Cramlet.

*241, 242, 243. *Functions of Complex Variables.*

244, 245, 246. *Calculus of Variation.* Prerequisites, Math. 114, 115, unless taken concurrently. Two credits each quarter; autumn, winter, spring. McFarlan.

251, 252, 253. *Mathematical Journal and Research Club.* (No credit.)

MECHANICAL ENGINEERING

Engineering Hall

Professor Eastwood, Executive Officer

*70. *Elementary Heat Engineering.*

81. *Mechanism.* Operation of machines involving the transmission of forces and the production of determinate motions. Prerequisites, G.E. 3, Math. 52. Three credits; autumn, winter, spring.

McIntyre, McMinn, Edmonds, Winslow.

82. *Steam Engineering.* Various steam apparatus used in modern steam plants; construction, use and reason for installation. Not open to freshmen. Prerequisite, G.E. 2. Three credits; autumn, winter, spring.

Eastwood, McMinn, Edmonds, Winslow.

83. *Steam Engineering Laboratory.* Calibrations of instruments; horsepower tests; complete engine and boiler test. Preceded or accompanied by M.E. 82. Three credits; autumn, winter, spring. Wilson, McIntyre.

107. *Heating and Ventilation.* Abridged for architecture students. Prerequisite, junior standing. Two credits; spring. Eastwood.

111, 112. *Machine Design.* Design of machine details. Prerequisite, C.E. 132. Three credits a quarter; autumn, winter, spring.

McIntyre, Edmonds, McMinn.

*Not offered in 1932-1933.

113, 114. *Machine Design*. Advanced problems in machine design. Prerequisites, M.E. 112, C.E. 132. Two credits a quarter; autumn and winter.

Winslow.

115. *Steam Engine Design*. Computations and drawings for the design of a steam engine. Prerequisites, M.E. 114, 124. Three credits; spring.

Winslow.

123, 124. *Engines and Boilers*. Generation and use of steam in various types of boilers and engines. Prerequisite, M.E. 83, also preceded or accompanied by C.E. 131. Three credits a quarter; autumn, spring.

Winslow.

140. *Time Study and Job Analysis*. Job standardizing in modern industry. Personnel requirements and training. Analyzing job. Computing, applying, and perpetuating standards. Five credits; spring.

McIntyre.

151, 152, 153. *Experimental Engineering*. Continuation of M.E. 83, involving more extended and complete investigations. Prerequisite, M.E. 83. Three credits a quarter; autumn, winter, spring.

Wilson.

167. *Engineering Materials*. Properties of the various materials used in engineering construction. Recitation and laboratory. Prerequisite, C.E. 132. Three credits; autumn, winter, spring.

McMinn.

182. *Heating and Ventilation*. Various systems of heating and ventilating methods with designs. Prerequisite, M.E. 82. Three credits; winter.

Eastwood.

183. *Thermodynamics and Refrigeration*. Fundamental principles underlying the transformation of heat into work. Special application to engineering. Prerequisite, M.E. 83, junior standing. Five credits; autumn, spring.

Eastwood.

184. *Power Plants*. Design of steam power plants, involving their location, buildings, prime movers, and power transmission. Prerequisites, M.E. 123, 183. Five credits; spring.

Winslow.

*185. *Naval Architecture*.

191-192-193. *Research*. Two to five credits.

Eastwood.

195. *Thesis*. Investigation, design or experiment under direction of the professor in charge. Two to five credits; senior year.

Eastwood.

198. *Gas Engineering*. Development of gas engineering; stationary, marine, automobile and airplane motors, and gas producer plants. Prerequisite, M.E. 82. Three credits; autumn, winter, spring.

Wilson.

199. *Gas Engine Design*. Calculations and plans for the design of a given type of motor. Prerequisite, M.E. 198. Three credits; spring.

Wilson.

COURSES FOR GRADUATES ONLY

200. *Vibrations of Machinery*. Mathematical investigations of vibration phenomena with emphasis on applications to operating conditions of machines. Elective for approved seniors and graduates. Three credits; autumn.

Winslow.

211-212-213. *Research*. Three credits a quarter; autumn, winter, spring.

Eastwood.

ENGINEERING ENGLISH

For courses in Engineering English, see department of English, Comp. B, 100, 102 and Speech 103.

* Not offered in 1932-1933.

METALLURGY

Mines Laboratory

See Mining, Metallurgy and Ceramics.

MILITARY SCIENCE AND TACTICS

The Armory

*Colonel Edward Kimmel, Professor of Military Science and Tactics.
Major Frazer, Executive Officer*

The instruction of the first two years, together with that provided for the third and fourth years, constitutes the courses prescribed by the War Department for institutional units of the Reserve Officers' Training Corps. The advanced courses, those of the third and fourth years, are open to students who have completed the first two years—basic course—of instruction and training.

The University having adopted a distinctive uniform for all students in the department of military science and tactics, each student who has been accepted for enrollment and training in this department will be charged a uniform fee that may vary from year to year but that will never exceed twenty-five dollars (\$25). From this amount, the University will supply the student with the proper uniform, consisting of a cap, coat and trousers. This uniform will be worn at such times as the professor of military science and tactics may direct, and will become the personal property of the student.

At the close of each academic year, the student's account will be audited, and he will be entitled to a refund from the University of not to exceed \$10 per year or a total of not exceeding \$20 for the two years of his basic training, less any charges for lost property that may have been entrusted to him. This refund must be claimed not later than November 15 of the next succeeding academic year.

Upon the approval of the professor of military science and tactics, students who are proven to be self-supporting may, if they so desire, be permitted to purchase and wear second-hand uniforms. All such uniforms, however, must be previously inspected and officially accepted as suitable by him.

FIRST YEAR

1. *Basic Infantry.* National Defense Act; personal hygiene; organization; school of soldier and squad; rifle marksmanship. Three hours a week. Two credits; any quarter. deRohan.

2. *Basic Infantry.* School of platoon and company; rifle marksmanship; combat principles (private and corporal); scouting and patrolling. Three hours a week. Two credits; any quarter. deRohan.

3. *Basic Infantry.* Ceremonies; continuation of combat principles and scouting and patrolling; infantry equipment and the infantry camp. Three hours a week. Two credits; any quarter. deRohan.

4. *Basic Coast Artillery.* National Defense Act; personal hygiene; organization; school of soldier and squad; rifle marksmanship. Three hours a week. Two credits; any quarter. Frazer.

5. *Basic Coast Artillery.* School of platoon; powders, projectiles, primers and fuzes; cordage; care and adjustment of 155 mm guns. Three hours a week; two credits; any quarter. Frazer.

6. *Basic Coast Artillery.* Ceremonies; school of the company; emplace-

ment and service of 155 mm and 3" anti-aircraft gun material. Three hours a week. Two credits; any quarter. Frazer.

11-12-13. *Band*. Two credits a quarter; any quarter. Welke.

SECOND YEAR

51. *Basic Infantry*. Drill and leadership; Browning automatic rifle (characteristics, limitations and mechanical functioning). Three hours a week. Two credits; any quarter. Milner.

52. *Basic Infantry*. Drill and leadership; musketry (collective firing); practical landscape target firing; scouting and patrolling. Three hours a week. Two credits; any quarter. Milner.

53. *Basic Infantry*. Drill and leadership; combat principles (duties of non-commissioned officer in all general phases of combat); ceremonies. Three hours a week. Two credits; any quarter. Milner.

61. *Basic Coast Artillery*. Drill and leadership; fire control instruments; target characteristics; telephones. Three hours a week. Two credits; any quarter. Frazer.

62. *Basic Coast Artillery*. Drill and leadership; aiming and laying of guns; fire control instruments. Three hours a week. Two credits; any quarter. Frazer.

63. *Basic Coast Artillery*. Drill and leadership; ceremonies; range section duties; anti-aircraft fire control instruments. Three hours a week. Two credits; any quarter. Frazer.

65. *Basic Coast Artillery*. Forestry students only. Camp sanitation; hygiene and first aid; cordage. Two credits; spring. Pack Forest. Frazer.

81-82-83. *Band*. Prerequisite, Mil. Sci. 13. Two credits a quarter; any quarter. Welke.

THIRD YEAR

104. *Advanced Infantry*. Drill and leadership; military topography (map reading and sketching); position and panoramic sketches. Five hours a week. Three credits; any quarter. Priest.

105. *Advanced Infantry*. Drill and leadership; combat principles of section and platoon; mechanical and tactical handling of machine guns and howitzers. Five hours a week. Three credits; any quarter. Priest.

106. *Advanced Infantry*. Drill and leadership; combat principles (machine gun and howitzer platoon); machine gun range firing; ceremonies. Five hours a week. Three credits; any quarter. Priest.

114. *Advanced Coast Artillery*. Drill and leadership; military map reading and sketching; gunnery for heavy artillery. Five hours a week. Three credits; any quarter. Luce.

115. *Advanced Coast Artillery*. Drill and leadership; gunnery for sea-coast artillery. Five hours a week. Three credits; any quarter. Luce.

116. *Advanced Coast Artillery*. Drill and leadership; gunnery for anti-aircraft artillery; orientation. Five hours a week. Three credits; any quarter. Luce.

124. *Advanced Ordnance*. Ordnance material; drill and leadership. Two hours a week. Two credits; any quarter. Crim.

125. *Advanced Ordnance.* Ordnance material. Two hours a week. Two credits; any quarter. Crim.

126. *Advanced Ordnance.* Ammunition—manufacture and use of all types. Two hours a week. Two credits; any quarter.* Crim.

127. *Ordnance Laboratory.* An experimental study of the various ordnance mechanisms to determine their characteristics, functioning, assembly and adjustment. Three hours a week. One credit; any quarter. Crim.

128. *Ordnance Laboratory.* Continuation of Mil. Sci. 127. Three hours a week. One credit; any quarter. Crim.

129. *Ordnance Laboratory.* A laboratory study of the various explosive compounds used in ammunition. Three hours a week. One credit; any quarter. Crim.

130. *Advanced Camp.* Required practical training to supplement the theoretical and practical courses taken in the military department by advanced students of the R.O.T.C. Six weeks in the summer, following the first year of the advanced course. Three credits.

FOURTH YEAR

154. *Advanced Infantry.* Military administration; military history and policy of the United States; military law; command functions. Five hours a week. Three credits; any quarter. Cooper.

155. *Advanced Infantry.* Command functions; combat principles of platoon, company and battalion; field engineering. Five hours a week. Three credits; any quarter. Cooper.

156. *Advanced Infantry.* Continuation of Mil. Sci. 155. Five hours a week. Three credits; any quarter. Cooper.

157. *Military Thesis on Infantry.* Five credits; any quarter. deRohan.

164. *Advanced Coast Artillery.* Drill and leadership; military history and policy of the United States; administration; military law. Five hours a week. Three credits; any quarter. Young.

165. *Advanced Coast Artillery.* Drill and leadership; artillery tactics; military motor transportation. Five hours a week. Three credits; any quarter. Young.

166. *Advanced Coast Artillery.* Drill and leadership; orientation; artillery material; field engineering. Five hours a week. Three credits; any quarter. Young.

167. *Military Thesis on Coast Artillery.* Five credits; any quarter. Frazer.

174. *Advanced Ordnance.* Drill and leadership; military law; administration. Two hours a week. Two credits; any quarter. Crim.

175. *Advanced Ordnance.* Ordnance engineering; principles of design, and manufacture. Prerequisites, Mil. Sci. 124, 125 and 126. Two hours a week. Two credits; any quarter. Crim.

176. *Advanced Ordnance.* Organization of the ordnance department; property accountability; industrial mobilization. Two hours a week. Two credits; any quarter.* Crim.

*NOTE: The student must take in addition approved technical subjects from the lists obtainable from office of the professor of military science and tactics.

177. *Ordnance Laboratory*. An experimental study of the various instruments for the determination of ballistic pressure and velocity. Three hours a week. One credit; any quarter. Crim.

178. *Ordnance Laboratory*. A critical examination of gun sights, quadrants, range finders, and similar accessories to determine their characteristics and probable errors. Three hours a week. One credit; any quarter. Crim.

179. *Ordnance Laboratory*. A laboratory study of the manufacturing operations and production of ordnance material. Three hours a week. One credit; any quarter. Crim.

180. *Military Thesis on Ordnance*. Five credits; any quarter. Crim.

MINING, METALLURGY AND CERAMICS

Mines Laboratory

NOTE: For students in other colleges who seek electives in mines, the following courses are suggested: Mining 51, 52, 103, 106, 162, 182; Metallurgy 53, 140, 155; Ceramics 90, 131, 132, 133.

NOTE: Each major student is required to spend one summer vacation, and preferably two, or equivalent time, in practical contact with the mineral industry, in mining, metallurgy, geology, or ceramics, and to submit upon his return to college in the autumn a written report of his observations in detail. Work of this nature offers an opportunity to secure data and material for the graduation thesis. The report is due on November 1.

I. MINING

Professor Roberts, Executive Officer

51. *Elements of Mining*. The field of mining, considering prospecting and boring, drilling, explosives, rock breaking, and principles applying to open-pit and underground methods. Prerequisite, sophomore standing. Three recitations. Three credits; autumn. Daniels.

52. *Methods of Mining*. Continuation of Min. 51. Methods of working metal, coal, and placer mines, quarries, and clay deposits. Prerequisite, Min. 51. Two recitations and one laboratory period. Three credits; winter. Daniels.

101. *Milling*. Preliminary course in the principles of ore dressing; practice with all milling machinery in Mines Laboratory. Prerequisite, junior standing. Two recitations and one laboratory period. Three credits; autumn. Roberts.

103. *Mine Rescue Training*. Practice in the use of oxygen rescue apparatus, and instruction in first-aid; 25 hours' intensive instruction during first three weeks of quarter. Physical examination required. A government certificate is granted on completion of course. One credit; winter. Daniels.

106. *Mine Excursion*. A five-days' trip in spring of junior year to a neighboring mining region; detailed inspections of mines. Expense approximately \$25. One credit; spring. Roberts, Daniels.

107. *Mine Excursion*. A five-days' trip in spring of senior year, similar to Min. 106. One credit; spring. Roberts, Daniels.

122. *Coal Mining Methods.* Special methods involved in prospecting, development, and operation of coal and stratified deposits. Detailed studies are made at nearby mines. Prerequisite, Min. 51. and Min. 52. Three recitations. Three credits; winter. Daniels.

151. *Mining Engineering.* Principles and practice as exemplified at typical mines. Laboratory studies of air compressors, drills, etc.; studies at nearby mines. Prerequisite, senior standing. Two recitations, one laboratory period. Three credits; autumn. Roberts.

152. *Ore Dressing.* The principal branches of ore dressing, with laboratory practice in complete mill tests. Prerequisite, senior standing. Three recitations and two laboratory periods. Five credits; spring. Roberts.

162. *Costs in the Mineral Industry.* An economic study of the whole cost of producing and selling metals and non-metallic mineral products. Open to seniors in any department. Three recitations and one laboratory period. Four credits; winter. Roberts.

*163. *Mine Operation.*

171. *Mine Ventilation.* Composition and properties of mine gases; principles of ventilation; safety and physiological factors, applied to both coal and metal mines. Prerequisites, Min. 51, 52, and 103. Three recitations. Three credits; winter. Daniels.

176. *Coal Preparation.* Methods of preparing coal by dry and wet cleaning processes; control by float-and-sink methods. Field examinations of washing plants at local mines. Prerequisites, Min. 101 and Met. 103. Two recitations and two four-hour laboratory periods. Five credits; winter. Daniels.

182. *Mineral Industry Management.* Employment of labor, systems of payment, efficiency of labor and methods, social and economic aspects of mineral engineering operations. Prerequisite, senior standing. Three recitations. Three credits; spring. Daniels.

191, 192, 193, 194. *Thesis.* Preparation of a graduation thesis in mining, metallurgy, or ceramics. Completed thesis is due one month before graduation. Prerequisite, senior standing. A minimum total of five credits allowed for thesis. Hours and credits to be arranged; autumn, winter, spring, summer. Roberts, Daniels, Corey, Wilson.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Seminar.* Lectures and discussions by Bureau of Mines staff, College of Mines faculty and fellows. Required of fellowship holders in College of Mines. Prerequisite, graduate standing. One credit; autumn, winter, spring. Staff.

211, 212, 213, 214. *Graduate Thesis.* Preparation of a thesis in mining, metallurgy, or ceramics. Prerequisite, graduate standing. Completed thesis is due at least one month before graduation. Hours and credits to be arranged; total nine credits allowed for thesis. Autumn, winter, spring, summer. Roberts, Daniels, Corey, Wilson.

221, 222, 223. *Metal Mining.* Studies in metal mining. Prerequisite, graduate standing. Hours and credits to be arranged. Roberts.

231, 232, 233. *Ore Dressing.* Studies in ore dressing. Prerequisite, graduate standing. Hours and credits to be arranged. Roberts.

* Not offered in 1932-1933.

251, 252, 253. *Coal Mining*. Studies in coal mining or in the preparation of coal. Prerequisite, graduate standing. Hours and credits to be arranged. Daniels.

261, 262, 263. *Fuels and Combustion*. A course in fuels, their utilization, and combustion. Prerequisite, graduate standing. Hours and credits to be arranged. Daniels.

II. METALLURGY

Professor Roberts, Executive Officer

53. *Elements of Metallurgy*. Properties of metals and alloys, fuels, refractory materials, furnaces, the extraction of the common metals from their ores. Open to all engineering students with sophomore standing. Three recitations. Three credits; spring. Corey.

101. *Fire Assaying*. Testing of reagents, crushing, sampling, and assaying of ores, furnace, and mill products. Prerequisite, Met. 53. One recitation and two laboratory periods. Three credits; autumn. Corey.

102. *Metallurgical Laboratory*. Experiments illustrating metallurgical principles. Prerequisite, Met. 53. One four-hour laboratory period. Two credits; spring. Corey.

103. *Fuels*. Primary and manufactured fuels; source, composition, method of utilization, economy, relative values, and efficiencies. Laboratory work in analysis of common fuels. Prerequisite, junior standing. Three recitations and one laboratory period. Four credits; winter. Daniels, Corey.

104. *Non-ferrous Metallurgy*. Metallurgy of copper, lead, zinc, gold and silver, especially the methods of roasting, smelting, lixiviation and refining. Prerequisite, Met. 53. Three recitations. Three credits; autumn. Corey.

140. *Materials of Construction*. Methods of manufacture, properties, and engineering uses of ferrous and non-ferrous metals and alloys, and ceramic materials. Prerequisite, junior standing. Three lectures. Three credits; autumn. Corey, Daniels, Wilson.

153. *Wet Assaying*. Technical methods for the determination of copper, lead, zinc, etc., in ores and furnace products. Prerequisite, Chem. 23. One recitation and two laboratory periods. Three credits; winter. Corey.

155. *Iron and Steel*. Metallurgy and manufacture of commercial iron and steel; especially their properties and uses in engineering work. Prerequisite, junior standing. Three recitations. Three credits; autumn. Daniels.

160. *Metallurgical Analysis*. Technical methods of analysis of slags, industrial products (for ceramics and geology students) and clays and rocks. Prerequisite, Met. 153. Two laboratory periods. Two credits; spring. Corey.

162. *Physical Metallurgy*. The constitution of metals and alloys, and their relations to the physical and mechanical properties of the metal. Prerequisite, senior standing. Open to all upperclass engineering students. Three recitations. Three credits; autumn. Corey.

163. *Metallography*. Preparation and study of metal sections, photomicrography and the use of the microscope in testing industrial alloys. One recitation and two laboratory periods. Open to all upperclass engineering students. Three credits; winter. Corey.

165. *Metallurgical Calculations.* Physical chemistry of the metallurgist, slag calculations, and furnace problems. Prerequisite, senior standing. Three recitations. Three credits; winter. Corey.

166. *Advanced Non-ferrous Metallurgy.* Study of methods and practice in the extraction of the minor non-ferrous metals. Prerequisite, senior or graduate standing. Three credits; spring. Corey.

COURSES FOR GRADUATES ONLY

221, 222, 223. *Advanced Metallurgy.* Studies in metallurgy. Prerequisite, graduate standing. Hours and credits to be arranged. Corey.

III. CERAMICS

Professor Wilson, Executive Officer

90. *Ceramic Materials.* Origin, occurrence, physical properties, and preparation of materials used in the ceramic and non-metallic industries. Prerequisite, sophomore standing in mines, engineering, or science. Three recitations. Three credits; spring. Wilson.

100. *Plasticity, Suspensions and Drying.* Physical characteristics of ceramic materials in the plastic condition and as slip-suspensions. Prerequisite, Cer. 90. Three recitations. Three credits; autumn. Wilson.

101. *Firing.* The effect of heat on ceramic materials; vitrification of clay; melting, fusion, and crystallization of silicates. Prerequisite, Cer. 100. Three recitations. Three credits; winter. Wilson.

102. *Ceramic Decoration.* The value of decoration in ceramics. Ceramic colors, surface textures and glazes. The chemistry of color production. Prerequisite, Cer. 101. Three recitations. Three to six credits; spring. Wilson.

104. *Calculations for Bodies and Glazes.* Physics and chemistry of preparing, drying, firing, testing and designing ceramic materials and glazes. Prerequisite, junior standing in mines or engineering. Three recitations. Three credits; autumn. Wilson.

105. *Calculations for Drying and Firing.* Problems in the physics and chemistry of drying, firing, and the combustion of fuel. Prerequisite, junior standing in mines or engineering. Three recitations. Three credits; winter. Wilson.

110. *Ceramic Physical-Chemical Measurements.* Laboratory testing of clays and other ceramic materials. Prerequisite, junior standing in mines or engineering. Two laboratory periods. Two credits; spring. Wilson.

121, 122, 123. *Ceramic Products Laboratory.* Laboratory problems in preparing raw materials and the manufacture and testing of ceramic and non-metallic products. Prerequisite, Cer. 90 to 110. Three laboratory periods and two recitations. Five credits a quarter; autumn, winter, spring. Wilson.

**131, 132, 133. *General Ceramics.* Technology of pottery, glass, lime, plaster, cements, metal enamels, or refractories. Hours and credits to be arranged. Wilson.

COURSES FOR GRADUATES ONLY

221, 222, 223. *Ceramic Research.* Studies of the ceramic resources of the Pacific Northwest or in the development of new products or processes. Prerequisite, graduate standing. Hours and credits to be arranged. Wilson.

**Will be offered if a sufficient number of students elect the course.

IV. MINING AND METALLURGICAL RESEARCH

Class work is directed by members of the instructional staff of the University. Research work is under joint direction of the United States Bureau of Mines and the College of Mines. Credit is allowed for research carried on during summer months. Subjects of research relate to the mining, metallurgical and ceramic industries of the state and adjacent regions.

During the coming year investigations are contemplated in the following subjects:

1. The preparation and utilization of coal.
2. The washing and utilization of clay and ocher.

MUSIC

Music Building

Associate Professor Dickey, Executive Officer

It will be noted that the courses in music are not hyphenated, but students who have not taken the first quarter's work in courses that continue longer than one quarter may enter courses subsequent to the first quarter only with the consent of the instructor in charge.

Vocal and Instrumental Study. Courses 1, 2, 3, 7, 8, 9, 18, 19, 20, 48, 49, 50, 68, 69, 70, 118, 119, 120, 168, 169, 170, 199.

Music Fundamentals. Courses 15, 16, 61.

Harmony and Composition. Courses 51, 53, 101, 112, 109, 117, 143, 157, 163, 197.

Music Literature and History. Courses 4, 5, 6, 22, 23, 24, 104, 105, 106, 151, 152, 153, 190, 191, 192.

School Music. Courses 40, 41, 42, 56, 114, 115, 116, 140, 141, 142, 154, 155, 180, 181.

Choral Ensembles. Courses 10, 11, 12, 25, 26, 27, 28, 29, 30, 65, 66, 67, 127, 128, 129.

Instrumental Ensembles. Courses 31, 32, 33, 124, 125, 126, 130, 131, 132, 133, 134, 135.

Piano Pedagogy. Courses 165, 166, 167.

1, 2, 3. *Elementary Vocal and Instrumental Study.* (See p. 261). Credits for elementary instrumental study in one branch will be allowed music majors who have fulfilled entrance requirements in another branch. The various branches will be designated by capital letters immediately following the course numbers:

- A. *Piano.* Venino, Van Ogle, McCreery, Bostwick.
- B. *Violin.* Rosen, Oliver.
- C. *Voice.* Werner, Bogardus, Lawrence.
- D. *Violoncello.* Kirchner, Anderson.
- E. *Organ.* Heeremans.
- F. *Band and Orchestra Instruments.* Welke.
- G. *Harp.* Beck.

Students may register for one or two half-hour lessons a week, the fee for each course being \$25 or \$50, accordingly. Music majors receive one and one-half or three credits a quarter respectively; other students one or two credits. A student who is registered for one lesson a week may repeat the same course for additional credit, or if his progress has been sufficient, he may register for the next following course. For detailed outlines of the courses in piano, violin, voice and organ, see page 258.

4, 5, 6. *Music Literature and History*. Assigned reading, analysis of various forms, discriminative listening. Required of all music majors. Three credits a quarter; autumn, winter, spring. Woodcock.

7, 8, 9. *Elementary Vocal and Instrumental Study*. (See Music 1, 2, 3, page 258.)

10-11-12. *University Chorus*. Students registering for this course must have approval of music department. One credit a quarter; autumn, winter, spring. Upper division credit to students having been enrolled in music courses for at least two years. Lawrence.

15, 16. *Music Fundamentals*. Intensive laboratory work in hearing and reading; transposition; melody-writing. No exemption from Mus. 16. Three credits; autumn, winter, spring. Staff.

18, 19, 20. *Vocal and Instrumental Study*. Credit unrestricted except to majors in instrumental study.

22, 23, 24. *Survey of Music Literature*. For the purpose of increasing understanding and enjoyment of good music. Designed for the general student. No credit to music majors. Two credits; autumn, winter, spring. Woodcock.

25-26-27. *Men's Choral Ensemble*. For freshmen. Audition required. Three credits a quarter; autumn, winter, spring. Lawrence.

28-29-30. *Women's Choral Ensemble*. Part songs for women's voices. Audition required. Two credits a quarter; autumn, winter, spring. Wilson.

31, 32, 33. *Elementary Orchestra*. Three rehearsals a week, one of which may be spent with chamber music or other recommended ensemble groups. Two credits a quarter; autumn, winter, spring. Welke.

*34, 35, 36. *Voice Training*.

40, 41, 42. *Elementary Orchestral Instruments*. Fundamental playing principles of each instrument. Wind instruments, fall and winter. Strings, spring quarter. Daily. Three credits; autumn, winter, spring. Welke.

48, 49, 50. *Vocal and Instrumental Study*. First year for major students. See Music 1, 2, 3, Page 83.)

51. *Elementary Harmony*. The physical basis and raw materials of harmony. Use of primary harmonies, and non-harmonic tones. Mus. 16 must precede or accompany this course. Five credits; autumn, winter, spring. Staff.

53. *Intermediate Harmony*. Secondary harmonies and simple modulations. Prerequisites, Mus. 16 and 51. Five credits; autumn, winter, spring. Staff.

56. *Elementary School Music*. The principles and procedures involved in teaching music in the primary grades. Prerequisites, Mus. 15, 16. Five credits; autumn, spring. Munro.

*Not offered in 1932-1933.

61. *Advanced Ear Training*. Designed to parallel Music 51. Prerequisite, Mus. 16. Three credits; autumn, winter, spring. Wilson.

65-66-67. *Men's Choral Ensemble*. Not open to freshmen. Audition required. Three credits a quarter; autumn, winter, spring. Lawrence.

68, 69, 70. *Vocal and Instrumental Study*. Second year for majors. (See Mus. 1, 2, 3, page 258.)

*84, 85, 86. *Advanced Voice Training*.

101. *Advanced Harmony*. Chromatic harmonies and modulation. Prerequisite, Mus. 53. Five credits; autumn, winter, spring. Staff.

104. *Music Since 1850*. Berlioz; Liszt; Strauss. Two credits; autumn. Van Ogle.

105. *Music Since 1850*. Cesar Franck; Debussy; modern French. Two credits; winter. Van Ogle.

106. *Music Since 1850*. Modern Spanish and British composers. Two credits; spring. Van Ogle.

109. *Counterpoint*. Regulation of two or more concurrent melodies. Prerequisite, Mus. 53. Five credits; autumn, winter, spring. Wood, McKay.

112. *Musical Forms*. Analysis of many examples and simple exercises in composition. Prerequisite, Mus. 53. Five credits; autumn, winter, spring. Wood, Woodcock.

114. *Intermediate School Music*. Application of educational principles to the teacher of music in grades 4, 5 and 6. Prerequisite, Mus. 56. Two credits; autumn, winter. Dickey, Hall.

115. *Choral Conducting*. Study of the principles of conducting with opportunity for practical experience in directing large and small groups. Prerequisite, Mus. 16. Two credits; autumn, winter. Munro.

116. *Junior High School Music*. A study of the adolescent and the contribution of music to his needs. Prerequisite, Mus. 114 and 115. Two credits; winter, spring. Hall.

117. *Elementary Composition and Arranging*. Original work and arrangements for the more usual combinations of voices or instruments. Prerequisite, Mus. 101. Five credits; autumn, winter, spring. McKay.

118, 119, 120. *Vocal and Instrumental Study*. (See Mus. 1, 2, 3, page 258.) Third year for majors.

124, 125, 126. *Chamber Music*. Advanced study of musical literature for stringed trios, quartets and quintets. One credit a quarter; autumn, winter, spring. Rosen.

127, 128, 129. *Choral Forms—A Capella*. Singing of important choral works with the idea of increasing skill in part-singing and promoting musician-ship. Two credits; autumn, winter, spring. Hall, Munro.

130, 131, 132. *University Band*. Study and production of more difficult compositions for band. One credit a quarter; autumn, winter, spring. Welke.

133, 134, 135. *University Symphony Orchestra*. Study and production of more difficult orchestral compositions. Players admitted only upon examina-

*Not offered in 1932-1933.

tion. Three rehearsals a week, one of which is substituted in chamber music or other ensemble groups recommended by instructor. Two credits a quarter; autumn, winter, spring. Welke.

140, 141, 142. *Orchestral Instruments—Applied Music*. Advanced work in ensemble and orchestral routine, with regular class work. Required of all majors in instrumental public school music. Prerequisites, Mus. 40, 41, 42. Daily. Three credits; autumn, winter, spring. Welke.

143. *Orchestration*. Study of the principles of orchestral composition. Not open to students who have had credit in 173. Prerequisite, Mus. 117. Five credits; winter. McKay.

151. *Modern Music*. Wagner. Prerequisite, junior standing. Two credits; autumn. Van Ogle.

152. *Modern Music*. Russian composers. Two credits; winter. Van Ogle.

153. *Modern Music*. Tschaikowsky; Scriabin the mystic; Stravinsky the realist. Two credits; spring. Van Ogle.

154. *Senior High School Music*. An analysis and intensive study of the high school problem in relation to music. Prerequisite, Mus. 116. Three credits; autumn, winter. Dickey, Munro.

155. *Music Supervision*. Problems related to the organization and supervision of school music. Prerequisite, Mus. 154. Five credits; autumn, spring. Dickey, Munro.

157. *Free Composition*. Pieces in the smaller forms for voices and for instruments. Prerequisite, Mus. 117. Five credits; winter. McKay.

163. *Advanced Counterpoint*. The invention, canon, fugue, etc. Analysis and composition. Prerequisite, Mus. 109. Five credits; autumn. Wood.

165, 166, 167. *Piano Teaching*. Survey of teaching material and consideration of principles involved, with supervised practice in teaching of piano. Permission of instructor required. Two credits; autumn, winter, spring. Woodcock.

168, 169, 170. *Vocal and Instrumental Study*. (See Mus. 1, 2, 3, page 258.) Fourth year for majors.

180, 181. *Orchestral Conducting*. Ensemble and orchestral groups; study of the literature practicable for these groups. Two credits a quarter; autumn, winter. Welke.

190. *Bach and His Forerunners*. Detailed study of music literature through student participation. Prerequisite, senior standing. Four credits; winter, spring. Munro.

191. *Eighteenth and Nineteenth Century Music*. Study of the music of these periods through ensemble performance projects. Four credits; spring. Wilson, Woodcock.

†192. *Contemporary Music*. Study of twentieth century music literature, its idioms and tendencies. Four credits; spring. Staff.

197. *Advanced Composition*. Original work in the larger forms. Prerequisite, Mus. 157. Two to six credits; spring. McKay.

199. *Senior Recital*. Two credits; winter or spring. Staff.

†Not offered until 1933.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Graduate Composition*. Credits to be arranged, 12 to 27.

McKay.

204, 205, 206. *Research*. Problems in music education or musicology. credits to be arranged. Maximum 12 credits.

Dickey.

207, 208, 209. *Thesis*. Original contribution from student's field of research, or acceptable original composition performed before a committee of the faculty. Prerequisite for music education or musicology majors, Edu. 291. Nine credits; autumn, winter, spring.

Staff.

218, 219, 220. *Graduate Vocal and Instrumental Study*. Open only to students having 30 undergraduate credits in one branch.

COLLEGE COURSES IN VOCAL AND INSTRUMENTAL STUDY

Students will be examined upon entrance and at the end of each year by an examining committee which will include the teachers of the individual students. Term examinations will be given by the individual teachers. A student may not be passed to a more advanced course without having satisfactorily completed the work and passed an examination in the course in which he has been placed.

Credit will be given for equivalent courses pursued elsewhere prior to entering the University, providing application is made upon entrance.

Students enrolled in these courses will be given opportunity on demonstration of the required ability, to participate in the public recitals of the department.

PIANO

School Music Piano Course

Piano entrance requirement for school music majors with no other instrumental training: Completion of second year, first semester of the state course of study in applied music for high school, or completion of Mus. 9A or its equivalent.

Music 1A, 2A, 3A.

1. Any major scale to be played, hands separately in 4/4 measure, quarter note, M.M. 100 in the following form: one octave in quarter notes; two octaves in eighth notes.

A knowledge of all minor scales, and major and minor broken chords.

Attention to be given to hand position and freedom of arm.

2. One volume from each of the following groups:

(a) Czerny-Germer, vol. 1, pt. 1; or Kuhner, Selected Studies, vols. 1 and 2; or Vogl, op. 33, vols. 1 and 2.

(b) Diller and Quail, bks. 1 and 2; Burgmuller, op. 100, bk. 1; or similar material.

3. Sight reading.

Music 7A, 8A, 9A.

1. Any major scale to be played, hands separately, 4/4 measure, one quarter note to M.M. 80, in the following form: one octave in quarter notes, two octaves in eighth notes, four octaves in sixteenth notes.

Any minor scale to be played in the same form as the major scales in 3A.

Any diminished seventh chord to be played in the same form as the minor scales.

Major and minor arpeggio.

2. One volume from each of the following groups:

(a) Czerny-Germer, vol. 1, pt. 2; Duvernay, op. 120; Berens, op. 61; Loeschorn, op. 66.

(b) Heller, op. 125; Heller-Foote Compendium, nos. 1-2.

(c) Bach Album (Carroll, Foote); Bach Album (Master Series, Hughes); Handel Album (Master Series, Hughes); Sonatina Album of Schirmer, Presser or Litoff (vol. 1512).

(d) Mendelssohn, Children's Pieces; Songs without Words, nos. 6, 9 or 12; Grieg, Valse in A Minor; Elfin Dance; MacDowell, To a Wild Rose; Schubert, Country Dances, Scherzo in B Flat Major; Schumann, selection from the Album for the Young; Tschaikowsky, selection from the Album for the Young; Rameau, Tambourin.

3. Sight reading of the difficulty of the average hymn tune.

Music 18A, 19A, 20A.

1. Any major scale, hands together, in 4/4 measure, quarter note to M.M. 88 as form in 9A.

Any minor scale, hands separately, in same form as major scales in 9A.

Any diminished arpeggio, quarter note to M.M. 98, in the following form: One octave in quarter notes, two octaves in eighth notes, three octaves in triple accent.

Major and minor arpeggio.

2. One from each of the following groups:

(a) Czerny-Germer, vol. 2, pt. 1; Czerny, op. 299; Hasert, op. 50, bk. 1; Loeschorn, op. 136, bk. 1.

(b) Bach, Little Preludes, Two-part Inventions.

(c) Sonatinas or selections from easier compositions of Haydn, Mozart or Beethoven.

(d) Schumann, selection from Album for the Young (Rider's Piece, Knight Rupert, In Memoriam, Norse Song); Chopin, Mazurka, op. 7, no. 1; Prelude, op. 28, no. 7, no. 20, no. 4; Brahms, Valse in A Flat Major; Grieg, Sailors' Song, Berceuse, Dance Caprice; MacDowell, Woodland Sketches (any one except "To a Wild Rose"); simplest rondos or sonata movements of Haydn or Mozart.

3. Sight reading of the difficulty of Concord Series, no. 7.

Music 48A, 49A, 50A.

1. Any major scale to be played, hands together, an octave apart in 4/4 measure, a quarter note to M.M. 88, in the following form: one octave in quarter notes, two octaves in eighths, three octaves in triplets and four octaves in sixteenth notes.

Any minor scale to be played in the same form as major scales in Mus. 20A.

Any diminished seventh, dominant seventh chord and any major or minor triad to be played in arpeggio form.

2. One of each of the following groups:

(a) Czerny, op. 740 or Cramer; Loeschorn, op. 136, bk. 1, or like studies.

(b) One of the easier sonatas of Haydn, Mozart or Beethoven.

(c) Bach Three Part Inventions.

(d) Study of some of the more difficult numbers and ability to read musically the simpler numbers in Bach, Handel, Haydn, Mozart, Beethoven, Schubert, Schumann, Chopin and Tschaikowsky.

3. Sight reading of the grade of difficulty of bk. 14 of the Concord Series.

Course for Majors in Piano

Students majoring in piano are expected to show marked talent for performance.

The minimum requirement for entrance is:

1. Third year, first semester of state course of study for private study in piano in high school, or

2. All major and minor scales, diminished seventh chords and major and minor triads in arpeggio form, with correct fingering. Great attention should be given to tone, good hand position and freedom of arm. Also, one from each of the following groups:

(a) Bach, Two Part Inventions; Bach Album (Heinze).

(b) Haydn Sonatas; Mozart Sonatas.

(c) One of the following to be played from memory: Schubert, Impromptu, op. 90, no. 2 or 3; Brahms, Intermezzo in B Flat; Beethoven-Seitz, Contra Dances; Bach-Saint-Saens, Gavotte; Grieg, March of the Dwarfs, Norwegian Bridal Procession; MacDowell, Dance Andalouse, Shadow Dance; Moskowski, Etincelles; Korngold, any one of the Fairy Tales; Debussy, Gollywogs' Cake Walk.

Freshman Year

Music 48A, 49A, 50A. (See description above.)

Sophomore Year

Music 68A, 69A, 70A.

1. Major and minor arpeggios, diminished seventh arpeggios and major and minor scales in thirds, sixths, and tenths to be played in various rhythms.

2. Continuation of Czerny, op. 740 or Cramer, or material chosen by the teacher to fit the needs of the student.

3. Beethoven, at least two of the earlier sonatas. (Suggestions: op. 2, no. 3; op. 10, no. 2; op. 10, no. 3.)

4. Bach, at least four preludes and fugues from the Well Tempered Clavichord; Suite from French or English Suites.

5. Selections from the romantic and modern composers.

Junior Year

Music 118A, 119A, 120A.

1. Continuation of Bach preludes and fugues; one organ transcription of Bach.

2. Chopin, etudes.

3. Beethoven, sonatas of the second period.

4. Selections from romantic and modern composers.

Senior Year

Music 168A, 169A, 170A.

Preparation for senior recital to consist of the following numbers or those of similar type and like difficulty.

1. Bach, an organ transcription, or Italian Concerto, or Chromatic Fantasia and Fugue, or a suite or partita, or a group of preludes and fugues from the Well Tempered Clavichord.

2. A standard piano concerto.

3. Compositions of romantic composers.

4. Compositions of modern composers.

VOICE COURSE

18C, 19C, 20C. Elementary studies in tone production. Studies in vowel formation and acquirement of a thorough foundation for proper diction. Suitable songs in the English language.

68C, 69C, 70C. Continued studies of voice production and technique together with an elementary study of the physiology involved in the act of phonation; songs from the old Italian masters; songs in languages which the student has studied or with which he is familiar.

118C, 119C, 120C. Continued studies in voice production; French songs; Italian and German classics; Lieder; suitable arias from oratorios and operas.

168C, 169C, 170C. Modern song literature; repertoire; oratorio; opera. Senior program consisting of excerpts from the classics, Italian, French and German songs; songs by representative foreign and American composers.

NOTE: If students are sufficiently advanced in voice upon entrance, their training will vary from that outlined above, to suit individual needs and abilities.

VIOLIN COURSE

The following outline is intended for students who have had at least four years' previous instruction in violin. It will be varied however, to meet the individual needs and preparation of the student.

48B, 49B, 50B. *Technique*. Scales, Hrimaly, Rosen; Exercises, Sevcik, op. 1, bks. 1 and 2; Sevcik, op. 9, double-stops; Kreutzer; Fiorillo; Rode, 24 Studies; Rode, 12 studies; Dancla, 20 studies; Rovelli.

Repertoire. Sarsate, Zigeunerweisen; Wieniawski, Second Polonaise; Vieuxtemps, Ballade and Polonaise; Nardini, Concerto in E minor; Vivaldi, Concerto in A minor; Bruch, Concerto in G minor.

68B, 69B, 70B. *Technique*. Schradieck, bks. 1 and 2; Wilhelmy, Daily Studies in Thirds; Mazas, bk. 3; Givini, 24 Studies; Zajic, Daily Studies.

Repertoire. Sarsate, Faust-Fantasie; Sarsate, Spanish Dances; Sarsate, Introduction—Tarantelle; Mendelssohn, Concerto in E minor; Wieniawski, Second Concerto in D minor; Spohr, Concerto Nos. 2 and 8.

118B, 119B, 120B. *Technique*. Carl Flesch, Scale System; Sevcik, Op. 1, bk. 3; Sauret, bk. 1; Dont, Exercises, op. 35; Wieniawski, Exercises, op. 18 and op. 10.

Repertoire. Beethoven, Two Romances; Hubay, Carman Fantasie; Corelli, Sonata in D Major; Tartini-Kreisler, Fugue in A Major; Saint-Saens, Concerto in B minor; Saint-Saens, Havanaise; Vieuxtemps, Concertos Nos. 4 and 5; Wieniawski, Scherzo-Tarantelle.

168B, 169B, 170B. *Technique*. Paganini, 24 Caprices.

Repertoire. Bach, Sonatas for violin alone; Tschaiakowski, Concerto; Spohr, Concerto No. 7; Wieniawski, Concerto in F sharp minor; Gaganini, Concerto; Lalo, Spanish Symphony; Beethoven, Concerto; Brahms, Concerto; Glazounov, Concerto; Goldmark, Concerto.

NOTE: The senior student is obliged to memorize and play in public one of the concertos given in the senior year.

The following outline is intended for students who have had no previous instruction in violin and will be indicated by Mus. 1, 2, 3, 7, 8, 9-B.

1B, 2B, 3B. Violin Method, bks. 1 and 2, Rosen; exercises, op. 45, bk. 1, Wohlfahrt; bk. 1, DeBeriot, exercises, op. 68.

1B, 2B, 3B. Scales, Hirnaly; studies, Blumenstengel, op. 33; Mazas, bks. 1 and 2; Concerto, Accoly; Scene de Ballet, De Beriot.

7B, 8B, 9B. Scales; exercises; etudes, Kreutzer, Fiorillo; Concerto 9 and 7, DeBeriot; one sonata by Handel.

18B, 19B, 20B. Scales, Rosen; etudes, Dancla; op. 35, Dont; Rovelli; Concerto, Bruch; D minor Wieniawski.

ORGAN COURSE

All students wishing to begin the course in organ must give satisfactory evidence of a foundation in piano at least equivalent to the first year of the course for piano majors.

First Year

48E, 49E, 50E. Manual and pedal exercises. Selections from Bach's Organ Works (Schirmer ed., vols. I and II) including the "Eight Short Preludes and Fugues" complete. Albrechtsberger, Six Trios. Various slow movements from Mendelssohn's Organ Sonatas.

Second Year

68E, 69E, 70E. Continuation of Bach and Mendelssohn. Choral Preludes from Bach's "Orgelbuchlein" (Novello ed., vol. XV). Selections from Sonatas by Guilman and Rheinberger and other works of a similar nature.

Third Year

118E, 119E, 120E. Continuation of Guilman and Rheinberger. A Bach Trio-Sonata (Schirmer ed., vol. V). Several compositions of Bach from vol. III (Schirmer ed.). Pieces by Cesar Franck.

Fourth Year

168E, 169E, 170E. Continuation of Bach Trio-Sonatas and compositions from vols. II, III, IV (Schirmer ed.). Selected Symphonies of Widor and Vierne. More difficult works of Cesar Franck, Karg-Elert and other contemporary composers.

NOTE: Organ majors must elect Music 163, Advanced Counterpoint.

NAVAL SCIENCE AND TACTICS

Good Roads Building

Commander McCormack, U.S.N., Executive Officer

All male students in the University who are American citizens, and are not physically disqualified, are required to take military training throughout the first two years of residence. The four-year course in naval science and tactics, prescribed by the Navy Department for units of the Naval Reserve Officers' Training Corps, may be substituted by the student for military training. Enrollment in this course is limited by the Navy Department and students will be selected for enrollment by the professor of naval science and tactics from those applying. The course in naval science and tactics leads to a commission as ensign in the United States Naval Reserve.

For those students who desire to major in naval science, a four-year curriculum has been arranged. (See curriculum I, College of Science, page 163).

FIRST YEAR

1-2-3. *Basic Course—Indoctrination and Seamanship.* Three hours a week plus two additional hours of drill. Three credits; autumn, winter, spring.

SECOND YEAR

51-52-53. *Basic Course—Navigation and Nautical Astronomy.* Three hours a week plus two hours of drill. Three credits; autumn, winter, spring.

THIRD YEAR

101-102-103. *Advanced Course—Ordnance and Gunnery.* Three hours a week plus two hours of drill. Three credits; autumn, winter, spring.

FOURTH YEAR

151-152-153. *Advanced Course—Leadership and Administration.* Three hours a week plus two hours of drill. Three credits; autumn, winter, spring.

COURSES OPEN TO GENERAL REGISTRATION

The following courses in naval science are open to general registration and are offered to all students registered in the University not enrolled in the Naval Reserve Officers' Training Corps.

55. *Seamanship.* Three credits; winter.
56. *Seamanship.* Prerequisite, Nav. Sci. 55. Three credits; spring.
61. *Sea Navigation.* Prerequisite, sophomore standing. Three credits; autumn.
62. *Sea Navigation.* Prerequisite, Nav. Sci. 61. Three credits; winter.
63. *Advanced Sea Navigation and Aerial Navigation.* Prerequisite, Nav. Sci. 62. Three credits; spring.

NAVAL AVIATION GROUND SCHOOL

(Preliminary to Flight Training)

Limited to Seniors or University Graduates

The department of naval science conducts an evening class without University credit for seniors or graduates who desire flight training for qualification as naval aviation pilots. Enrollment in Naval R.O.T.C. is not necessary to take this course. For particulars apply to professor of naval science and tactics, Good Roads Building.

NURSING EDUCATION

Home Economics Hall

Associate Professor Soule, Executive Officer

There are three distinct types of work for majors in nursing included in this department.

1. (a) Five-year Curriculum. Three years of University work and two years in an approved hospital school of nursing leading to a degree of bachelor of science in nursing and a hospital diploma.

(b) Four-year Curriculum. Four years of University work, six quarters of which are taken on the campus and the remaining period in instruction and practice under University direction in an approved hospital school of nursing, leading to a degree of bachelor of science in nursing.

(c) Three-year Curriculum. For graduate nurses leading to a degree of bachelor of science in nursing.

(d) One-year Curriculum. For graduate nurses leading to a certificate in public health nursing.

(e) One- and two-year Curriculum. For graduate nurses, in affiliation with Harborview Hospital, leading to a certificate in teaching supervision.

(f) Three-months' Service Course. For students who have entered hospital schools of nursing.

2. Service courses for majors in other departments.

3. Because of the desire to relate this work closely to outside institutions the following courses have been developed through the Extension Service department:

(a) A course leading to a certificate in public health nursing at Firland Sanatorium.

(b) An introductory course in public health nursing to senior students in general hospitals.

1. *History of Nursing and Survey of Field*. Open to any woman student in the University. Two credits; autumn. Soule.

5. *Home Care of the Sick and Child Hygiene*. Two credits; winter, spring. Leahy.

50. *Principles and Practice of Elementary Nursing*. Open only to nursing majors. Five credits; autumn, spring. Olcott.

51. *Methods of Case Study*. Principles and practice of advanced nursing in relation to special types of disease. One credit; autumn, spring. Adams.

52. *Introduction to Hospital Practice*. Three months' experience in practical application of principles of hospital organization and economy. Six credits; autumn, spring. Olcott and department heads.

60. *Principles of Medicine and Nursing in General Medical Diseases*. Three credits; winter, summer. Tuttle.

61. *Principles of Medicine and Nursing in Medical Specialties*. Including dermatology, syphilology, tuberculosis. Three credits; autumn, spring. Medical Specialists and Tuttle.

62. *Hospital Practice in Medical Nursing*. Six credits; autumn, winter, spring, summer. Tuttle.

64. *Principles of Special Therapy*. The use of light, electricity, heat, water, massage, exercise and occupation as aids in cure or control of disease. Two credits; autumn, spring. Olcott and department head.

65. *Hospital Practice in Departments of Special Therapy*. Four credits; autumn, winter, spring, summer. Adams and department heads.

66. *Principles of Preventive Medicine and Nursing Care in Acute Communicable Disease*. Two credits; autumn, winter, spring, summer. Nursing instructor and department heads.

68. *Practice of Nursing in Acute Communicable Diseases*. Six credits; autumn, winter, spring, summer. Tuttle.

70. *Principles of Surgery and Nursing in General Surgical Diseases.* Lecture, demonstrations, clinics. Three credits; winter, summer. Surgeon and Radford.

71. *Principles of Surgery and Nursing in Surgical Specialties.* Includes gynecology, urology, orthopedics, and operating room technique. Three credits; autumn, spring. Surgical specialists and Radford.

72. *Hospital Practice in Surgical Nursing.* Six credits; autumn, winter, spring, summer. Radford.

73. *Operating Room Practice.* Six credits; autumn, winter, spring, summer. Leach.

75. *Hospital Practice in Clinical Diagnosis.* Demonstration, clinics, and two months' practice in out-patient department and diagnostic laboratory. Four credits; autumn, winter, spring, summer. Adams and department heads.

76. *Principles of Otology, Ophthalmology, and Neurology.* Two credits; autumn, spring. Medical specialists and Tuttle.

80. *Principles of Pediatrics and Pediatric Nursing.* Five credits; winter, summer. Pediatrician and Larsen.

82. *Hospital Practice in Pediatric Nursing.* Practical experience in nursing care of infants and children, including practice in formula room. Six credits; autumn, winter, spring, summer. Larsen.

86. *Principles of Obstetrics and Obstetrical Nursing.* Lectures, demonstrations, clinics. Five credits; winter, summer. Obstetrician, obstetrical nursing supervisor.

88. *Hospital Practice in Obstetrical Nursing.* Nursing care of patients during pre-natal, labor and post partum periods, including care of the new born. Six credits; autumn, winter, spring, summer. Obstetrical nursing supervisor and obstetrician.

90. *Principles of Psychiatry and Psychiatric Nursing.* Lectures, demonstrations and clinics dealing with various types of mental diseases. Five credits; winter, summer. Psychiatrist and Sullivan.

92. *Hospital Practice in Psychiatric Nursing.* Three months' experience in psychiatric wards, out-patient, and commitment clinics. Six credits; autumn, winter, spring, summer. Sullivan.

100. *Professional Problems and Survey of Nursing.* Two credits; winter, summer. Smith.

102. *Principles of Public Health Nursing.* Prerequisite, graduate registered nurse. Five credits; autumn, spring. Soule.

103. *Organization, Administration and Techniques in Special Fields of Public Health Nursing.* Prerequisite, Nurs. Edu. 102. Five credits; winter, spring. Soule, Leahy.

110E. *Field Work.* See Nurs. Edu. 110E under Extension.

111. *Supervised Field Work in School Nursing.* Prerequisite, graduate registered nurse. Three credits; autumn, winter, spring. Leahy.

150. *Teaching in Nursing Schools.* Principles of teaching applied to nursing procedure. Five credits; autumn. Adams.

151. *Administration of Schools of Nursing.* Five credits; spring. Adams.

152. *Supervision of Hospital Departments.* Organization, equipment and administration. Five credits; winter. Adams.

153. *Hospital Administration in Relation to Nursing Service*. Prerequisites, graduate registered nurse, Nurs. Edu. 152. Five credits; spring.

Smith and Adams.

154. *Cadet Teaching and Ward Administration in Hospitals*. Prerequisites, Nurs. Edu. 150, 152, graduate registered nurse. Ten credits; autumn, winter, spring, summer.

Adams.

COURSES FOR GRADUATES ONLY

200. *Seminar*. Prerequisites, graduate registered nurse, 30 credits in nursing. Credits to be arranged. Soule.

201-202-203. *Problems*. Prerequisites, graduate registered nurse, 30 credits in nursing. Credits to be arranged. Soule, Leahy, Adams.

205. *Research in Nursing Education, Hospital Administration, Public Health Nursing*. Prerequisites, Nurs. Edu. 102, 103, Bact. 103, or Nurs. Edu. 150, 151, 152. Credits arranged; autumn, winter, spring. Staff.

BY EXTENSION

E110. *Public Health Nursing*. Field work to give a practical knowledge of the field of public health nursing. Prerequisite, Nurs. Edu. 102. Eight to sixteen credits. Time to be arranged. Leahy.

For other extension courses in nursing education, see University Extension Service bulletin.

OCEANOGRAPHIC LABORATORIES

Professor T. G. Thompson, Director

101. *Oceanography*. Fundamental principles of general oceanography. Three credits; spring. Miller.

Chem. 155. *Oceanographical Chemistry*. Prerequisite, Chem. 111, 132, or equivalent. Three credits; winter. Thompson.

Chem. 156. *Oceanographical Chemistry*. Laboratory methods. Prerequisite, Chem. 155. Two three-hour laboratory periods and one conference. Three credits; spring. Thompson, Robinson.

166. *Physical Oceanography*. Prerequisite, Physics 3. Two credits; spring. Utterback.

Bot. 205, 206, 207. *Physiology of Marine Plants*. Prerequisites, Physics 3, Bot. 145, Chem. 111 and 129, or equivalent. Two lectures, one three-hour laboratory period. Three credits each quarter; autumn, winter, spring. Rigg.

Bot. 210, 211. *Phytoplankton*. These courses are given at the Friday Harbor laboratories by special arrangement with instructor. Prerequisites, Physics 3, Bot. 145, Chem. 111 and 129 or equivalent. Three credits; winter, spring. Phifer.

Physics 219. *Hydrodynamics*. Prerequisites, Physics 200, Math. 116.

Utterback.

Zool. 213, 214, 215. *Advanced Invertebrate Embryology*. Development and life history of marine invertebrate animals, life history of parasites of marine fishes. Prerequisites, Zool. 5, 106, and 126. Three credits; autumn, winter, spring. Guberlet.

249. *Graduate Seminar*. Assigned readings and reports dealing with special topics. Credits to be arranged; autumn, winter, spring. Staff.

250. *Research in Oceanography*. The work in research is of three types; (1) special investigations by advanced students; (2) research for the master's degree; (3) research for the doctor's degree. Maximum, 45 credits. Staff.

ORIENTAL STUDIES

Denny Hall

Professor Pollard, Executive Officer

The department presents the history, literature, civilization and (to a modest extent) the languages of the Orient. Its courses are planned to serve students interested in the cultural, religious, or social activities of Oriental peoples, those interested in diplomacy, and others who wish to make contacts with the East.

The college requirement of ten credits in ancient languages and literature may be met by any two of the courses 50, 51, 52. Courses 114, 115, 116 give credit in the department of philosophy as well as in Oriental Studies. Upper division credit may be earned in many of the courses such as Oriental Studies 25, 26, 27, 40, 41, 50, 51, 52, 70, 71, by doing additional work.

MAJORS AND MINORS IN ORIENTAL STUDIES

Major requirements:

1. Forty credits in Oriental Studies, of which half must be upper division.
2. Required courses are Oriental Studies 25, 114, 115, 116.
3. Senior examination in final quarter of work.

1-2, 3. *Japanese Language*. First-year course. Elements of spoken and written language; grammar, *kana*, and characters. Five credits a quarter; autumn, winter, spring. Tatsumi.

10. *Culture of Asia*. General survey of the political, philosophical, religious, literary, and practical aspects of Asiatic life, yesterday and today. Especially valuable to freshmen. Five credits; autumn, winter, spring.

Gowen, lecturer; Cutts, quiz master.

†25. *Introduction to the History of Asia*. Resume of the main currents of human movement in the history of the continent of Asia. Five credits; spring. Gowen.

†26. *Introduction to the History of China*. An outline of the history of China, giving an historical background to present problems. Five credits; winter. Pollard.

†27. *Introduction to the History of Japan*. An outline of the history of Japan, giving an historical background to present problems. Five credits; spring. Pollard.

†40. *Chinese Civilization*. The progress of China socially and institutionally within the historical era. Five credits; autumn. Pollard.

†41. *Japanese Civilization*. The progress of Japanese social institutions from the beginning to the present. Five credits; winter. Pollard.

†Upper division students may receive upper division credits by doing additional work.

- *44-45, 46. *Chinese Language*.
- *47, 48, 49. *Chinese Language*.
- †50. *Literature of India*. Indian literature from the Vedas to Rabin-dranath Tagore. Five credits; autumn. Gowen.
- †51. *Literature of the Euphrates Valley and Egypt*. Survey of literary discoveries in Sumerian, Babylonian, Assyrian and Egyptian archaeology. Five credits; winter. Gowen.
- †52. *Literature of Persia*. Persian literature from Zoroaster to the present day, including Muhammad and the Qu'ran. Five credits; spring. Gowen.
- *70. *Literature of China*.
- †71. *Literature of Japan*. Japanese literature from the Kojiki to the present day, including poetry, the novel, and the drama. Five credits; spring. Pollard.
- ‡101-102-103. *Hebrew, Aramaic, or Arabic*. Five credits a quarter; autumn, winter, spring. Gowen.
- ‡104-105-106. *Sanskrit*. Five credits a quarter, autumn, winter, spring. Gowen.
- 107, 108, 109. *Japanese*. Intensive course in written language; idiograph, grammar, and reading in Japanese literature. Prerequisite, O.S. 3 or equivalent. Five credits a quarter; autumn, winter, spring. Tatsumi.
114. *History of Religion*. The primitive conception of religion, naturism and spiritism. Three credits; autumn. Gowen.
115. *History of Religion*. The religions of the Far East and India. Three credits; winter. Gowen.
116. *History of Religion*. A survey of Judaism, Christianity, and Muhammadanism. Three credits; spring. Gowen.
120. *Problems of Eastern Asia and the Pacific*. An objective approach to present day problems in China, Japan, Manchuria, and the Pacific. Prerequisite, U.D. standing or O.S. 26 and 27. Five credits; autumn. Pollard.
- 125-126, 127. *Diplomatic History of Eastern Asia*. Diplomacy among Oriental nations with each other and with Western countries from the beginning of the historic era. Prerequisite, U.D. standing or Or.S. 26 and 27. Three credits; autumn, winter, spring. Pollard.
- ‡152, 153 154. *Hebrew, Arabic, or Sanskrit*. Second year. Five credits; autumn, winter, spring. Gowen.
190. *West Asia Reading Course*. Selected reading in primary and secondary sources. Term paper from the reading. Proper use of bibliography and footnotes. Three credits; autumn. Cutts.
191. *Reading Course in India*. Selected reading in primary and secondary sources. Term paper from the reading. Bibliography and footnotes. Three credits; winter. Cutts.
192. *East Asia Reading Course*. Selected reading in Chinese and Japanese sources. Three credits; spring. Pollard.

*Not offered in 1932-1933.

†Upper division students may receive upper division credits by doing additional work.

‡One or more of these languages is offered, to be determined by registration.

136, 137, 138. *Sculpture Composition*. Imaginative design; problems met in professional practice. Prerequisites, 72,73,74. Three credits a quarter; autumn, winter, spring. Pratt.

150, 151, 152. *Illustration*. Principles of composition applied to book illustration and to the making of prints. Lectures and laboratory. Prerequisite, senior standing in PSD. Three credits a quarter; autumn, winter, spring. Rhodes.

157. *Metal Work*. The adaptation of principles of design to actual objects in copper, pewter, brass or their combination. Planned to develop appreciation. Prerequisite, PSD junior standing. Three credits a quarter; autumn. Penington.

158, 159. *Jewelry*. Principles of design as adapted to objects in metal, stones and enamels. A supplementary study of old and contemporary examples. Prerequisite, PSD 157. Three credits a quarter; winter. Penington.

160, 161, 162. *Life*. Drawing and painting from the model. Lectures on historic styles. Class criticism of original compositions; anatomy. Prerequisites, PSD 56,57,58. Three credits a quarter; autumn, winter, spring. Isaacs, Patterson.

163, 164, 165. *Composition*. The development of individuality in painting through creative composition. Reading and reports from works on modern criticism. Prerequisites, PSD 56,57,58. Three credits a quarter; autumn, winter, spring. Isaacs.

166. *Art Structure*. Problems in decoration related to the stage. Prerequisites, PSD 5,6,7, 9,10,11. Three credits a quarter; autumn. Benson.

169, 170, 171. *Costume Design*. Costume illustration and design. The study of art in dress through the application of design and color harmony. Supplementary reading reports. Prerequisites, PSD 5,6,7, 9,10,11. Two credits a quarter; autumn, winter, spring. Benson.

172, 173, 174. *Interior Design*. An advanced course for the special student in interior design. Furnishings and architecture. Prerequisites, PSD 110,111,112. Five credits a quarter; autumn, winter, spring. Foote.

175, 176, 177. *Advanced Painting*. Prerequisites, PSD 56,57,58. Three credits a quarter; autumn, winter, spring. Isaacs.

*179, 180, 181. *Costume Design*.

COURSES FOR GRADUATES ONLY

207, 208, 209. *Portrait Painting*. Work of ample size and of a professional character. Three or five credits a quarter; autumn, winter, spring. Patterson.

260, 261, 262. *Advanced Life Painting*. An intensive course in painting from life. Three or five credits a quarter; autumn, winter, spring. Isaacs.

263, 264, 265. *Composition*. Three or five credits a quarter; autumn, winter, spring. Isaacs.

Suggested courses in commercial art: PSD 5,6,7; 9,10,11; 105,106; 129; 126; 150,151,152; 160,161,162; 169,170,171; Jour. 130,131,135; Econ. 134,135, 136; 139.

*Not offered in 1932-1933.

PHARMACY, PHARMACEUTICAL CHEMISTRY, PHARMACOLOGY,
TOXICOLOGY, MATERIA MEDICA AND FOOD CHEMISTRY

Bagley Hall

Professor Johnson, Executive Officer

1, 2, 3. *Theoretical and Manufacturing Pharmacy*. Pharmaceutical operations and manufacture of U.S.P. and N.F. preparations. Two lectures and one laboratory period a week. Three credits a quarter; autumn, winter, spring. Cain and assistants.

4. *The Profession of Pharmacy*. A survey of the development of pharmacy as a profession. Two lectures a week. Two credits; autumn. Langenhan.

5. *Gravimetric Quantitative Analysis*. Two lectures, one quiz and two four-hour laboratory periods a week. Five credits; autumn. Cain.

6. *Volumetric Quantitative Analysis*. Two lectures, one quiz and two four-hour laboratory periods a week. Five credits; winter. Cain.

7. *Urinanalysis*. One lecture and one laboratory period a week. Two credits; spring. Cain.

8. *Pharmacopoeial Assay*. The assay of drugs by methods in the United States Pharmacopoeia. One lecture and three hours laboratory a week. Two credits; spring. Cain.

9, 10, 11. *Prescriptions*. Theory and practical application of extemporaneous compounding. One lecture, one quiz and one laboratory period a week. Three credits a quarter; autumn, winter, spring. Evans and assistants.

12, 13, 14. *Pharmacognosy*. Organic drugs, their source, methods of collecting and preserving, identification, active constituents and adulterations. Three lectures a week. Three credits; autumn, winter, spring. Goodrich.

51. *Elementary Pharmacy*. A brief survey of the fundamental knowledge of dispensing which the nurse should have. Two credits; autumn. Dial.

61. *Pharmacology and Therapeutics*. The source, actions, and uses of drugs. Three credits; winter. Dial.

101, 102, 103. *Pharmacology and Toxicology*. Actions, uses and doses of drugs. Symptoms and treatment in poisoning. Three credits a quarter; autumn, winter, spring. Lynn.

104, 105. *Pharmacognosy*. A microscopic study of crude and powdered drugs for purposes of identification and for detection of adulteration. Two laboratory periods a week. Two credits; winter, spring. Goodrich.

112. *Biologicals*. A course dealing with those animal drugs and biological products used in medicine. Three credits; autumn. Goodrich.

113, 114, 115. *Advanced Prescriptions*. Problems in dispensing and manufacturing. Preparation of diagnostic reagents. Study of U. S. P. and N. F. Two lectures and three laboratory periods. Five credits; autumn, winter, spring. Langenhan and assistants.

*181, 182. *Drug Store Practice*.

183. *New Remedies*. New and non-official remedies; modern modes of administering medicines. Three lectures a week. Three credits; winter. Langenhan.

*Not offered in 1932-1933.

184. *Pharmacy Laws and Journals, and Problems.* Laws relating to the practice of pharmacy. Three lectures a week. Three credits; spring.
Langenhan.

191, 192, 193. *Research Problems in Pharmacy.* Open to juniors, seniors and graduates. One to five credits; autumn, winter, spring.
Lynn, Langenhan, Goodrich, Johnson.

195, 196, 197. *Pharmaceutical Chemistry.* The pharmacy and chemistry of alkaloids, glucosides, oils, volatile oils and other plant and animal principles of pharmaceutical importance. The course will also include the separation and identification of poisons from animal tissue. One lecture and three laboratory periods. Four credits; autumn, winter, spring.
Lynn.

COURSES FOR GRADUATES ONLY

201. *Investigation in Practical Pharmacy.* Maximum credit forty-five credits. Any quarter.
Langenhan.

202. *Investigation in Pharmacognosy.* Maximum credit forty-five credits. Any quarter.
Goodrich.

203. *Investigation of Toxicology.* Maximum credit forty-five credits. Any quarter.
Lynn, Johnson.

204. *Investigation in Pharmaceutical Chemistry.* Maximum credit forty-five credits. Any quarter.
Lynn, Johnson.

205. *Investigation in Pharmacology.* Maximum credit forty-five credits. Any quarter.
Lynn.

210. *Graduate Seminar.* Reports on assigned reading under direction of members of the staff. One hour a week. No credit; autumn, winter, spring.
Staff.

PHILOSOPHY

Philosophy Hall

Professor Savery, Executive Officer

The College of Liberal Arts requirement is five credits in philosophy. This requirement may be satisfied by any one of the following courses: Phil. 1, 2, 3, 5. (None of these has any prerequisites.)

Philosophy 1, 2, and 5 are suited to arts-law students.

Psychology 1 is required of majors in philosophy.

Philosophy 2 or 3, 5, and 101-102-103 are required of majors.

At least 50 per cent of the credits in the major must be in upper division courses.

1. *Introduction to Philosophy.* Not open to freshmen. Five credits; autumn, winter, spring.
Savery, Phillips.

2. *Introduction to Social Ethics.* Social ideals and problems, with special emphasis upon the opposition of democracy and aristocracy in government, industry, law, education, art and religion. Not open to freshmen. Five credits; winter.
Savery and assistants.

3. *Introduction to Ethics.* Moral principles and their application to the problems of life. Not open to freshmen. Five credits; spring.
Rader.

5. *Introduction to Logic*. Conditions of clear statement, adequate evidence, and valid reasoning, and their establishment in the mental processes of the student. Not open to freshmen. Five credits; autumn, winter, spring.

Nelson.

101-102-103. *History of Philosophy*. Ancient, medieval and modern. Open to juniors and seniors only. Three credits a quarter; autumn, winter, spring.

Rader.

104-105-106. *Metaphysics*. The nature of reality, with special reference to the concepts and principles of science. For advanced students in philosophy or in the sciences. Instructor's permission necessary. Three credits a quarter; autumn, winter, spring.

Savery.

*113. *Philosophy of Religion*.

Oriental Studies 114, 115, 116. *History of Religion*. Autumn quarter: primitive conceptions of religion; naturism and spiritism. Winter quarter: the religions of the Far East. Spring quarter: Judaism, Christianity, and Muhammadanism. Offered in alternate years. Three credits; autumn, winter, spring.

Gowen.

123. *Philosophy in English Literature of the Nineteenth Century*. From Wordsworth to Shaw, including Emerson, Whitman, and Mark Twain. Prerequisite, Phil. 1. Five credits; spring.

Savery.

129. *Esthetics*. Theories of the nature of art, the nature of beauty, and the various sources of esthetic effect. Open only to juniors and seniors. Five credits; autumn.

Rader.

133. *Ethical Theory*. An advanced course in the fundamental concepts and principles of ethics. Prerequisite, Phil. 2 or 3. Two credits; spring.

Rader.

141-142-143. *Contemporary Philosophy*. Modern movements: idealism, mysticism, intuitionism, positivism, pragmatism, realism, mechanism, and vitalism. Prerequisite, Phil. 1 or 101-102-103. Two credits; autumn, winter, spring.

Phillips.

193. *Advanced Logic*. Symbolic logic; critical examination of logical doctrines bearing on philosophical questions; inductive method. Prerequisite, Phil. 5. Three credits; spring.

Nelson.

COURSES FOR GRADUATES ONLY

207-208-209. *Seminar in Philosophy of Science*. An advanced study of metaphysics. Open to students upon approval of instructor. Three or four credits a quarter; autumn, winter, spring.

Savery.

*214-215-216. *Seminar in Logic*.

237-238-239. *Seminar in Locke, Berkeley, Hume*. Reading of the major philosophical works, with criticism and interpretation. Open to students upon approval of instructor. Three or four credits a quarter; autumn, winter, spring.

Rader.

*241-242-243. *Seminar in Plato and Aristotle*.

244-245-246. *Seminar in the Philosophy of Kant*. A critical study of Kant's *Inaugural Dissertation* and of his three *Critiques* with reference to historical antecedents, and to influence on idealistic philosophy. Open to students upon approval of instructor. Three or four credits a quarter; autumn, winter, spring.

Nelson.

*Not offered in 1932-1933.

*247-248-249. *Seminar. The Philosophy of Schopenhauer and Nietzsche.*

251-252-253. *Research in Philosophy.* Open to students upon approval of instructor. One to six credits a quarter; autumn, winter, spring. Staff.

PHYSICAL EDUCATION AND HYGIENE FOR MEN

Athletic Pavilion

Associate Professor Foster, Executive Officer

Requirements for Graduation. Two years of physical education or military or naval science and tactics are required of all able-bodied male students, with the exception of men over 24 years of age at the time of original entrance into the University.

Military Training. Requirements in military or naval science and tactics take precedence over the requirements in physical education. (See Military Science and Tactics.)

Health and Physical Examinations. All students entering the University for the first time are required to receive a thorough medical and physical examination. The examination will serve to determine the course in which the student shall register.

REQUIRED SERVICE COURSES

FOR FRESHMEN

1, 2, 3. *Elementary Physical Education.* One credit a quarter; autumn, winter, spring. Torney and Staff.

5, 6, 7. *Restricted Exercise.* Work adapted to meet the individual needs based upon the findings of the medical and physical examination. One credit a quarter; autumn, winter, spring. Belshaw.

FOR SOPHOMORES

51, 52, 53. *Advanced Physical Education.* During the sophomore year the student is permitted to select three activities in which to specialize. One credit a quarter; autumn, winter, spring. Auernheimer and Staff.

55, 56, 57. *Restricted Exercise for Sophomores.* A continuation of Physical Education 5, 6, 7. One credit a quarter; autumn, winter, spring. Belshaw.

58, 59, 60. *Physical Education Leadership.* A substitute for courses 51, 52, 53, for men who wish to develop leadership in physical education. One credit a quarter; autumn, winter, spring. Torney.

NOTE: The above courses are offered in satisfaction of the general lower division physical education requirement only.

For professional courses in physical education see page 277.

*Not offered in 1932-1933.

PHYSICAL EDUCATION AND HYGIENE FOR WOMEN

Gymnasium

Associate Professor Gross, Executive Officer

The physical education requirement for graduation consists of the health education lecture course and physical education activity courses as follows:

P.E. 4-5, 6-7, 8-9. Health Education.....	6 credits
P.E. activity classes	4 credits
	<hr/>
	10 credits
or	
P.E. 10. Health Education.....	5 credits
P.E. activity classes	5 credits
	<hr/>
	10 credits

The health education course is taken preferably in the freshman year, the activity courses during the freshman and sophomore years. A student may be exempt from the health education course by passing the health knowledge test given during freshman week. In healthful activity at least one credit must be in P.E. 95, Swimming, unless the student is able to pass the swimming test given at the time of the physical examination.

(a) *Health Education Lecture Course.* Given jointly by the home economics, nursing education, and physical education departments.

(b) *Physical Education Activity Courses.* The purpose of these courses is to give the student an opportunity for vigorous, wholesome activity necessary for promoting health and an opportunity to develop individual motor skills in order that she may learn the elements of and love for a recreational hobby which she can continue in after years. No credits received in these courses, however, may be counted as part of the 180 academic credits required for graduation.

(c) *Professional Physical Education Courses.* Courses leading to a major in physical education are listed under professional courses. For curricula in physical education see College of Science or School of Education announcements.

HEALTH EDUCATION LECTURE COURSES

4-5. *Health Education.* The development of personal and social attitudes in matters of personal and community hygiene. Study of physiological facts related to these attitudes. Development of a social consciousness regarding personal and future problems in the matter of self-direction. Two lectures a week. Two credits; autumn, winter, spring. Davidson.

6-7. *Health Education.* Development of public health program in rural communities and cities. Public health and communicable disease. Two lectures a week. Two credits; autumn, winter, spring. Leahy, Soule.

8-9. *Health Education.* Food selection in relation to nutritive requirements of various age groups. Consideration of simple corrective diets. Two lectures a week. Two credits; autumn, winter, spring. Bliss, O'Keefe.

10. *Health Education.* (Equivalent of P.E. 4-5, 6-7, 8-9). Five credits; autumn, winter, spring. Davidson, O'Keefe, Leahy, Soule.

PHYSICAL EDUCATION ACTIVITY COURSES FOR WOMEN

1, 2, 3. *Corrective Gymnastics*. One credit; autumn, winter, spring.

McGownd.

11-12-13. *Physical Education Activities for Freshman Majors*. (Required of all freshman major students.) Practice in folk dancing, character dancing, hockey, basketball, tennis, soccer, archery, baseball, volleyball, natural dancing, swimming. Two credits each; autumn, winter, spring.

Reed, Rulifson, deVries, Glover, Maydahl.

51-52-53. *Physical Education Activities for Sophomore Majors*. (Required of all sophomore major students.) Practice in folk dancing, character dancing, hockey, basketball, tennis, soccer, archery, baseball, volleyball, natural dancing, swimming. Two credits each; autumn, winter, spring.

Reed, Rulifson, deVries, Glover, Maydahl.

57 to 98. *Physical Education Activities*. 57, Fencing; 61, folk dancing; 62, character dancing; 63, advanced character dancing; 64, hockey; 65, basketball; 67, tennis; 68, soccer; 72, rifle shooting; 75, archery; 80, baseball; 82, volleyball; 85, canoeing; 87, golf; 88, advanced golf; 91, natural dancing; 92, advanced natural dancing; 93, advanced natural dancing; 94, equitation; 95, elementary swimming; 96, intermediate swimming; 97, advanced swimming. One credit each; autumn, winter, spring. For section, see time schedule.

Reed, Rulifson, deVries, Glover, Jefferson, Maydahl.

PROFESSIONAL COURSES FOR MEN AND WOMEN

80. *Introduction to Physical Education*. (For men.) General survey of the field; range and type of activities, including professional opportunities; relation of the required curricular courses to the special field. Two credits; autumn.

Foster.

90. *Personal and General Hygiene*. (For men.) The laws of hygiene as they apply to the individual problem of adjustment. Two credits; winter.

Foster.

95. *Elementary Games*. (For men.) Games of low organization. Demonstration in the presentation of play materials. Two credits; autumn.

Kunde.

100. *Survey of Physical Education as a Profession*. (For women.) Opportunities in the field. Relation of courses. Required of all physical education majors. Two credits; winter.

Gross.

101. *Survey of Gymnastics*. (For women.) Classification of gymnastic material. Principles and technique of teaching. Prerequisites or accompanying courses, Anat. 101, 110, 111, 112, and Physiol. 50. One hour lecture and two hours practice. Three credits; winter.

Davidson.

110. *Athletic Training and First Aid*. (For men.) Three credits; winter.

Kunde.

111. *Rhythmic Activities for Small Children*. (For women.) Activities suited to the pre-school, kindergarten, and primary child. Educational value, significance in child development, methods of presentation. Lecture and practice. Three credits; autumn.

Reed.

112. *Elementary Athletic Games*. (For women.) Progressive series from the hunting games and elementary forms to the standard athletic activities of late adolescent years. Game sequence and organization, methods of judging and achievement and improvement. One hour lecture, two hours practice. Three credits; winter.

Rulifson.

113. *Playground and Community Recreation.* (For men and women.) The playground movement, its setting and development. Materials and activities suitable for play and recreation programs. Three credits; spring. Kunde.

115. *Physiology of Muscular Exercise.* (For men and women.) A comprehensive course in the physiology of muscular exercise as related to physical activities. Prerequisites, Anat. 101; Physiol. 50, or the equivalent. Three credits; spring. Belshaw.

122. *Kinesiology.* (For men and women.) Study of the principles of body mechanics. The analysis of leverage in body movement and problems of readjustment in relation to posture and to sports. Prerequisites, Anat. 101, 110, 111, 112, and Physiol. 50. Three credits; autumn. McGownd.

127. *Tests and Measurements.* (For men and women.) The place and possibilities of measurement in physical education. Practical problems will be assigned to class for experimental study. Prerequisite, senior standing. Three credits; winter. Belshaw.

131-132-133. *Theory and Practice in Adapted Activities.* (For women.) Application of principles of body mechanics in the maintenance of postural patterns. Analytical study and application of remedial exercises. Fundamental manipulations of massage and its place in correction of postural defects. Prerequisites, P.E. 122, Anat. 101, 110, 111, 112, and Physiol. 50. Three credits; autumn, winter, spring. McGownd.

135, 136. *Individual Gymnastics.* (For men.) This course will consider physical abnormalities of the most frequent occurrence; selection and application of corrective exercise to actual cases under supervision. Prerequisite, P.E. 122. Two credits a quarter; winter, spring. Belshaw.

141, 142, 143. *Physical Education Methods.* (For men.) Theory and application of educational method to the teaching of physical education in the elementary and secondary schools. Three credits a quarter; autumn, winter, spring. Auernheimer and Staff.

145. *Principles of Physical Education.* (For men and women.) Social, biological, and educational foundations. Formulation of the major aims and objectives. Prerequisite, junior standing. Three credits; autumn. Foster.

150. *Physical Education Administration.* (For men.) Organization and administration in the schools and colleges. Prerequisite, P.E. 145. Five credits; spring. Foster and Staff.

152. *Organization and Administration of Physical Education.* (For women.) Organization of activities for grade and high school curriculum. Methods of classification of students and administration of activities, the organization of leadership. Prerequisites P.E. 101, 111, 112, 113, 145, 162, 163, 164 and Edu. 75V. Two hours a week. Two credits; spring. Gross.

153. *Principles in Health Education.* (For men and women.) The place of health education in the school program, principles of organization and administration, the general program of health teaching, subject matter and methods in health teaching in both the elementary and high school. Two credits; winter. Gross.

156, 157, 158. *Advanced Athletic Methods.* (For men.) Theory and practice of the fundamentals of competitive sports, including football, basketball, track and field, boxing and baseball. Prerequisite, junior standing. Two credits a quarter; autumn, winter, spring.

Graves, Edmundson, Phelan, Kunde.

162-163-164. *Methods in Physical Education.* (For women.) Theory and practice of educational method to the various activities of the physical education program. Prerequisites, P.E. 11, 12, 13, 51, 52, 53. Five credits; autumn, winter and spring. deVries, Glover, Rulifson, Reed, Maydahl.

175. *Methods in Teaching Swimming and Diving.* (For men.) Prerequisite, medical examination. Two credits; winter. Torney.

181. *Campcraft.* (For women.) Theory and practice in camp organization and administration and in the conduct of camp activities; studies are made of the educational significance of current movements and existing local and national organization. Three credits; spring. Davidson.

182. *Scouting Principles and Practice.* (For men.) Scouting education, including its philosophy, pedagogy and psychology. Practical participation in the organization and use of subject matter. Prerequisite, junior. Three credits; spring. Torney.

Teachers' Course in Physical Education. See Edu. 75V. For additional courses, see Edu. 145G, School Hygiene.

COURSES FOR GRADUATES ONLY

200. *Seminar.* (For men and women.) Present status of physical education with special reference to a state survey of standards, training of teachers, programs, equipment, schedules, etc. Prerequisite, 30 credits in physical education. Credits to be arranged; winter, spring. Gross.

201, 202, 203. *Problems in Physical Education.* (For men and women.) Special problems, including administration of school programs, organization of activities. Problems selected will depend upon personnel of class. Prerequisite, 30 credits in physical education. Credits to be arranged; autumn, winter, spring. Gross and staff.

204. *Supervision of Physical Education.* (For men and women.) Analysis of the problems and technique of the improvement of teaching as relating to the in-service education of teachers; visitation and conference; selection and organization of subject matter; standardization of the materials of instruction; use of tests and measurements; the evaluation of the efficiency of teachers. Prerequisite, graduate standing and teaching experience, and 20 credits in physical education. Three credits; spring. Gross.

PHYSICS

Physics Hall

Professor Osborn, Executive Officer

Students not in engineering, who do not have a full year of high school physics, must elect Physics 4, 5, 6.

Engineering students must have a full year of high school physics before taking Physics 97.

Students majoring in physics should elect the following courses in the order given; 1, 2, 3 or 4, 5, 6, 101, 105, 160, 191, 192 and elective physics courses to make 45 credits. Math. 4, 5, 6 and 107, 108, 109 are required of physics majors, and Chem. 181, 182 is advised.

1-2. *General Physics.* These courses will satisfy the physical science requirement in the Colleges of Liberal Arts and Science and may be taken

by students in forestry, pharmacy and fine arts. Prerequisite, a full year of high school physics. Five credits a quarter; autumn, winter. Osborn.

3. *General Physics, Electricity*. Required of physics majors, of mathematics majors taking physics as a minor and of pre-medic students. Prerequisites, Physics 1, 2. Five credits; spring. Utterback.

4-5. *General Physics*. For students without a full year of high school physics. These courses will satisfy the same requirements as Physics 1-2. Five credits a quarter; autumn, winter. Utterback.

6. *General Physics, Electricity*. This course will satisfy the same requirements as Physics 3. Prerequisite, Physics 5. Five credits; spring. Utterback.

50-51. *Sound and Music*. For Fine Arts students only. Three credits for 50; 51 four credits; winter, spring. Kenworthy.

54. *Photography for Amateurs*. Prerequisite, elementary physics or chemistry. Three or five credits; spring. Higgs.

89-90. *Physics of the Home*. For students in home economics and nursing. Five credits a quarter; autumn, winter. Osborn.

97. *Physics for Engineers*. Mechanics. Prerequisite, a full year of high school physics and 12 credits of college mathematics. Five credits a quarter; autumn, winter. Brakel.

98. *Physics for Engineers*. Electricity. Prerequisite, Physics 97. Five credits a quarter; winter, spring. Brakel.

99. *Physics for Engineers*. Light and heat. Prerequisite, Physics 97. Five credits a quarter; autumn, spring. Brakel.

101. *Introduction to Modern Theories*. Prerequisite, Physics 3 or 6. Five credits; for graduate students two credits; autumn. Utterback.

105. *Electricity*. Prerequisite, Physics 3 or 6. Five credits; winter. Brakel.

*109. *Pyrometry*.

110. *Heat and Introduction to Thermodynamics and Kinetic Theory*. Prerequisite, Physics 3 or 6. Three credits; spring.

115. *Applications of Photography to Scientific Work*. Prerequisite, 15 credits of college physics and 15 credits of college chemistry. Three credits; winter. Higgs.

154. *Electrical Measurements*. For engineering students. Prerequisite, Physics 97, 98, 99. Three credits a quarter; autumn, spring. Brakel.

160. *Optics*. Prerequisite, Physics 3 or 6, and the calculus. Five credits; spring. Osborn.

166. *Physical Oceanography*. For students in oceanography only. Physical properties of sea water; methods of observation and operation of instruments; theory of the measurements of ocean currents. Prerequisite, Physics 3. Two credits; spring. Utterback.

*Not offered in 1932-1933.

167, 168, 169. *Special Problems*. Prerequisite, special permission. Credit arranged; autumn, winter, spring. Cred-Staff.

*170. *Spectrometry*.

180. *History of Physics*. Prerequisite, 25 credits of physics. Two credits; spring. Osborn.

191-192. *Theoretical Mechanics*. Prerequisite, 20 credits of physics and calculus. Three credits, autumn; two credits, winter. Newbury.

195, 196. *Atomic Physics*. Prerequisite, 30 credits of physics. Three credits; autumn, winter. Higgs.

COURSES FOR GRADUATES ONLY

200, 201, 202. *Introduction to Theoretical Physics*. Prerequisites, 40 credits of physics and taking Math. 114. Three credits a quarter; autumn, winter, spring. Staff.

204. *Thermodynamics*. Prerequisites, 40 credits of physics and Math. 114. Three credits; spring. Newbury.

205. *Kinetic Theory*. Prerequisite, 40 credits of physics. Three credits; winter. Utterback.

*210-211. *Vibratory Motion and Sound*.

*212. *Conduction Through Gases*. Prerequisites, 40 credits of physics and taking Math. 114. Three credits; spring. Henderson.

216. *X-Rays and Radio-activity*. Prerequisite, 40 credits of physics. Three credits; autumn. Loughridge.

*219. *Hydrodynamics*. See Oceanographic Laboratories.

*220. *Advanced Dynamics*.

*224. *Electro-statics and Magneto-statics*.

226-227-228. *Electron Theory*. Prerequisite, Physics 202. Two credits a quarter; autumn, winter, spring. Henderson.

*230, 231, 232. *Atomic Structure*.

*240. *Wave Mechanics*.

*241. *Theory of Relativity*.

250, 251, 252. *Seminar*. Prerequisite, graduate standing. One credit for the year; autumn, winter, spring. Henderson.

256, 257, 258. *Research*. Credits arranged; autumn, winter, spring. Staff.

POLITICAL SCIENCE

Philosophy Hall

Professor Martin, Executive Officer

The courses in political science are offered to meet the needs of the following groups: (1) students seeking sufficient political training to aid

*Not offered in 1932-1933.

them in understanding their civic duties; (2) those desiring courses in political science as a part of their liberal education; (3) students who desire to prepare themselves for positions in the public service, national, state, and local, and the foreign service; (4) students seeking courses in political science which are preparatory and supplementary to their work in the following professional schools—law, education, business administration, and journalism; (5) those who desire that systematic and intensive training which will prepare them as teachers or investigators in political science.

Prerequisites. The normal prerequisite for all courses in the department is Pol. Sci. 1. For upper division courses, Pol. Sci. 51, 52, 54, and 61 and elementary courses in economics, history and sociology are strongly recommended.

Subject Groups. The work of the department is divided into the following groups: I. Political Theory and Jurisprudence; II. International Relations; III. Politics and Administration. A major student must select any one group as his chief interest before proceeding with upper division courses.

The Major. Candidates for the bachelor's degree with political science as a major must offer 45 credits in political science, of which at least 30 shall be in upper division courses.

Major programs must be approved by the department.

Programs must include 20 credits in one group and at least ten credits in each of the remaining groups.

Graduate Study. For admission to graduate courses and to candidacy for higher degrees, see the announcement of the Graduate School. Candidates for higher degrees in political science must register in the graduate seminar during every quarter of their residence, and in two research seminars, one of which must be in the field of the special investigation.

LOWER DIVISION COURSES

ELEMENTARY COURSES, PRIMARILY FOR FRESHMEN

1. *Comparative Government.* Representative modern governments; presidential, parliamentary, federal, unitary; United States, France, England, Germany, and Japan. Five credits; autumn, winter, spring. Martin and staff.

INTERMEDIATE COURSES, PRIMARILY FOR SOPHOMORES

51. *Principles of Politics.* The origin, form, function and nature of the state; its relations to other social institutions, and other states. Five credits; autumn. Wilson.

52. *Introduction to Public Law.* The legal construction of political organization. The state and the individual; leading concepts in constitutional, international, and administrative law. Five credits; winter. Cole.

54. *International Relations.* Rise of modern states; alliances, imperialism, the League of Nations; present problems; factors underlying international relations. Five credits; autumn. Mander.

61. *Municipal Government.* Growth of cities, home rule, city charters, forms of city government, collections and politics, and other problems. Not open to students who have had 161. Five credits; spring. Harris.

UPPER DIVISION COURSES

Prerequisite: Pol. Sci. 1. *Recommended:* Pol. Sci. 51, 52, 54, 61, and one of the following courses: Econ. 1, Soc. 1, Hist. 1-2. No prerequisites

101. *Introduction to American Constitutional Government.* Fundamental principles of the American Constitutional system; its function and evolution; the unwritten constitution. Two credits; autumn, winter, spring. Wilson.

Group 1—Political Theory and Jurisprudence

111. *History of Political Theory.* Historical development of statehood and theories concerning it; ancient, medieval, modern. Periods and schools in political thought. Three credits; autumn. Wilson.

112. *American Political Theory.* Fundamental characteristics of the American political system; American political ideas. Three credits; winter. Wilson.

113. *Contemporary Political Thought.* Recent political ideas in the Occident; questions of sovereignty and allegiance; state concepts. Three credits; spring. Wilson.

114. *Oriental Political Theory.* Theories and principles of statehood and statecraft in the Orient, especially in China, Japan and India. Five credits; winter. Wilson.

Primitive Social and Political Institutions. (See Anthropology 185.)

118. *Law and the State.* Ancient, medieval, and modern conceptions of the relationship between political authority and the legal institutions. Law and politics in an ideal commonwealth. Five credits; autumn. Cole.

119. *Jurisprudence.* The law as an agency of social control. Main implications of fundamental concepts of justice: rights, persons, property, contract, liability. The sources of law: legislation, precedent, custom. Five credits; winter. Cole.

120. *Introduction to Roman Law.* This course aims to familiarize the student with the principal institutions of the corpus juris civilis—one of the chief monuments of western culture. Five credits; spring. Cole.

Group II—International Relations

121. *Foreign Relations of the United States.* Leading American policies regarding Latin America, Canada, and Europe. Contemporary problems of American diplomacy. Three credits; winter. Mander.

122. *The Foreign Service.* Department of state; diplomatic and consular services; American diplomatic practice and procedure. Three credits; spring. Martin.

*124. *International Relations of Post-War Europe.*

125. *The Government of Dependencies.* Colonial policies and administrative practices, with special reference to East and West Africa, Malaya, Ceylon, Pacific Islands and West Indies. Five credits; spring. Mander.

127. *International Organization and Administration.* International unions, conferences, commissions, and especially the League of Nations. Three credits; winter. Mander.

*Not offered in 1932-1933.

129. *International Relations of the Far East.* China and Japan. Pacific and Far Eastern questions. Developments to 1895. The period 1895-1914. Recent problems. Five credits; spring. Mander.

International Law. (See Law 122, Principles of International Law.) The general principles of international law as developed by custom and agreement, and as exhibited in decisions of international tribunals and municipal courts, diplomatic papers, treaties, conventions, in legislation, in the works of authoritative writers, and in the conduct of nations. Three credits a quarter; autumn, winter. Martin.

Group III—Politics and Administration

151. *Problems in American Federal Government.* Significant national problems, including presidential "dictatorship," bureaucracy, the lobby, congressional investigations, executive justice. Grants-in-aid, committee government, civil liberties. Five credits; autumn. Cole.

152. *Political Parties and Elections.* Organization and methods of political parties; campaign and conventions; election administration. Five credits; autumn. Harris.

153. *Introduction to Constitutional Law.* Growth and development of the United States constitution as reflected in leading decisions of the Supreme Court. Their political, social, and economic effects. Five credits; spring. Cole.

*154. *The Law of Public Administration.*

155. *Introduction to Public Administration.* Civil service, administrative organization and control, public finance, public reporting. Five credits; autumn. Harris.

Public Finance. (See B.A. 124.)

156. *European Governments.* A comparative study, many of parliamentary institutions. Great Britain, Germany, Fascism, Russia, and Poland and Jugo-Slavia. Five credits; autumn. Mander.

*158. *Governments and Politics of the Far East.*

159. *The British Commonwealth.* The dominions and legal relations: India, the colonies; problems of unity. Five credits; winter. Mander.

160. *Government and Constitutions of the British Dominions.* Canada, South Africa, Australia, New Zealand, Ireland, compared as to unitary and federal systems, and as to parliamentary institutions. Three credits; spring. Mander.

162. *Municipal Administration.* Civil service, finance, city planning, zoning, police, traffic, health, water, sewerage, public works, utilities, etc. Five credits; winter. Harris.

163. *State Government and Administration.* Constitutions, governor, legislature, administrative organization, state activities, counties, parties, elections. Five credits; spring. Harris.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Graduate Seminar.* For candidates for higher degrees in political science. Three credits; autumn, winter, spring. Martin and staff.

*Not offered in 1932-1933.

211, 212, 213. *Seminar in Political Theory.* Readings and discussions based on the writings of first importance of the masters of political science. Three credits; autumn, winter, spring. Wilson.

215. *Methods and Research in Political Science.* Political science and the social sciences; methods of research; bibliography of general and special fields. Three to five credits; spring. Wilson.

221. *Seminar in International Organisation.* Three to five credits; autumn. Mander.

251. *Seminar in Politics and Administration.* Research in special problems. Three to five credits; winter. Harris.

256. *Seminar in Public Law.* Special subject for investigation: Personnel of the Federal Supreme bench. Three to five credits; winter. Cole.

Seminar in Oriental Diplomacy. (See Oriental Studies 225, 226, 227.)

Problems in Administrative Law. (See Law 199.)

Constitutional Law. (See Law 119, 120.)

Administrative Law. (See Law 121.)

PSYCHOLOGY

Philosophy Hall

Professor Stevenson Smith, Executive Officer

Students in the College of Liberal Arts, as well as in the College of Science, may major in psychology.

The Liberal Arts requirement is five credits in psychology.

Students who have shown an aptitude in psychology, and who consider taking extensive work in this subject, are invited to confer with members of the staff in order to plan their work to advantage.

Majors in psychology may count five hours in Phil. 1 or Phil 101-102-103 toward satisfying their major requirement.

1. *General Psychology.* No prerequisites. Five credits; course repeated every quarter. Staff.

102. *The Neural Basis of Behavior.* Contemporary neurological theory concerning action, the emotions, the regulatory functions, learning, thinking. Prerequisite, Psych. 1. Five credits; winter. Esper.

106. *Experimental Psychology.* Training in laboratory methods. Prerequisite, Psych. 1. Three credits; winter. Esper.

107. *Advanced Experimental Psychology.* Prerequisite, Psych. 106. Three credits; spring. Esper.

108. *Essentials of Mental Measurement.* Ways in which experimental results are evaluated and treated. Required of majors in psychology. Prerequisite, Psych. 1. Five credits; winter. Guthrie.

109. *Mental Tests.* The preparation, evaluation and application of tests. Essential to work in clinical psychology. Prerequisites, Psych. 1 and 108. Five credits; spring. Smith.

*111. *History of Psychology.*

*Not offered in 1932-1933.

112. *Modern Psychological Theory*. This may be taken to advantage concurrently with 113. Prerequisite, Psych. 1. Three credits; spring. Guthrie.

113. *Structural Psychology*. The methods and results of the traditional school of psychology in America as contrasted with those of behaviorism. Prerequisite, Psych. 1. Two credits; spring. Gundlach.

114. *Current Psychological Literature*. Reading and discussion in recent books and journals. Prerequisite, ten credits in psychology. Five credits; winter. Guthrie.

116. *Animal Behavior*. Prerequisite, Psych. 1. Three credits; autumn. Gundlach.

117. *Superstition and Belief*. Why we are superstitious. The psychological analysis and the historical development of certain false opinions. Prerequisite, Psych. 1. Two credits; autumn. Smith.

118. *Folk Psychology*. Psychology of social human nature; language, custom, public opinion, morals, war, family, caste, nationalism, religion. Prerequisite, Psych. 1. Five credits; autumn. Guthrie.

120. *Psychology of Beauty*. Prerequisite, five credits in psychology. Two credits; autumn. Guthrie.

121. *Applied Psychology*. Psychology of personal efficiency, vocational guidance, scientific management, social work, law, medicine, athletics, business. Prerequisite, Psych. 1. Five credits; winter. Gundlach.

124. *Psychology of Learning*. How habits are formed. Efficiency in learning, transfer of training, recent experimental findings. Prerequisite, Psych. 1. Five credits; autumn. Esper.

126. *Abnormal Psychology*. Description and explanation of abnormal behavior. Psychoneuroses, automatisms, "The Unconscious," dreams, and sleep. Prerequisite, ten credits in psychology. Five credits; spring. Guthrie.

131. *Child Psychology*. Individual and social development and their causes, from infancy to adult age. Prerequisite, Psych. 1. Five credits; autumn. Smith.

132. *Principles of Clinical Psychology*. Methods of diagnosis and training of children brought for clinical examination. Special disabilities. Prerequisite, Psych. 1. Three credits; spring. Smith.

151, 152, 153. *Undergraduate Research*. An opportunity, for promising students, to begin experimental work under direction. Prerequisite, 15 credits in psychology and permission of the department. Three credits each quarter. Staff.

COURSES FOR GRADUATES ONLY

Before a student registers for graduate courses, his topic for research must be approved by the department.

201, 202, 203. *Graduate Research*. Each quarter. Credit to be arranged. Staff.

211, 212, 213. *Seminar*. Open to all research students and majors. Two credits each quarter. Staff.

ROMANIC LANGUAGES AND LITERATURE

Denny Hall

Professor Frein, Executive Officer

Students entering with high school credits in French or Spanish will be admitted to classes upon the basis of one high school semester counting as the equivalent of one University quarter.

For reasons of any interruption in the continuation of a language, some adjustments may be made, but all exceptional cases must be determined by the executive officer of this department.

If, for any reason, a student who has done one year of French in high school needs to enter French 2, he will be given University credit therefor, but he will be required to finish French 3, 4 and 7, in fulfillment of the language requirement.

Students who have done two years of a Romanic language in high school may, if there has been an interval of two years or more in their study of that language, enter French 4 and 7 with full credit.

Full credit will be given for university work done in all elementary language courses desired by the student except in the one language which he offers for entrance to the University.

Students may not begin French 1 and Spanish 1 (nor Italian) during the same quarter; and it is better to have three quarters of one Romanic language before beginning another. If the entrance requirement in foreign language has not been fulfilled, no credits will be given for Courses 1, 2, 3, 4 and 7 in any of the Romanic languages done in fulfillment of that requirement. Freshmen and sophomores may enter any course, except graduate, for which they have the prerequisites. Graduate students working for the master's degree and offering a minor in French or Spanish will do not less than is required of majors for the bachelor of arts degree in this department.

I. FRENCH

Requirements of the department: Majors and all who wish to be recommended to teach French shall be required to take French 41, 101, 102, 103 or 107, 158, 159, Edu. 75K, and electives amounting to nine or ten credits in French literature numbered above 117. At least four of the nine or ten credits shall be in courses in literature conducted in French.

1-2, 3. *Elementary*. As much as possible French will be used in the class room. Each of the courses 1, 2, 3, is repeated each quarter. No credit will be given for French 1 until 2 has been completed. Five credits a quarter; autumn, winter, spring.

4, 5, 6. *Reading of Modern Texts*. Each of the courses 4, 5, 6, is repeated each quarter. French 4 may be combined with 7, making a five-hour course. The same is true of 5 and 8, 6 and 9. Prerequisite to French 4 is 3, or equivalent. Three credits a quarter; autumn, winter, spring.

7, 8, 9. *Grammar and Composition*. Each of the courses 7, 8, 9, is repeated each quarter. Must be taken by majors in French, unless they have done the equivalent in high school. French 7 may be combined with 4. The same is true of 8 and 5, 9 and 6. Prerequisite to French 7 is 3, or equivalent. Two credits a quarter; autumn, winter, spring.

34, 35, 36, or 134, 135, 136. *Comparative Literature of France, Italy, and Spain, in English Translation*. (Lower division students must use the numbers 34, 35, 36; upper division students must use 134, 135, 136.) Lectures in English and collateral reading of English translations. No knowledge of

French, Italian or Spanish necessary. For liberal arts students choosing any of the Romanio languages for their major, all credits in this course may be counted toward the total of 36 to 60 credits required for the fulfillment of the major, but only three may be counted as part of the required nine hours in literature. Courses may be entered any quarter. Students can receive credits in only one language. Three credits a quarter; autumn, winter, spring. Goggio.

41. *Phonetics*. Prerequisite, French 3. Three credits; repeated each quarter. Frein.

71, 72, 73, or 137, 138, 139. *Scientific French*. Reading in their special lines will be assigned to students majoring in the several sciences. Students of the lower division should register for French 71, 72, 73; those of the upper division should register for French 137, 138, 139. Prerequisites, French 4 and 7 or equivalent. Two credits a quarter. Whittlesey.

101, 102, 103. *Advanced Composition and Conversation*. With each of these courses is offered (at the same hour, but not on the same days) a course in advanced reading. See French 104, 105, 106. Prerequisites, French 6 and 9. Three credits a quarter; autumn, winter, spring.

Patzer, deVries, Helmlingé, Chessex, Whittlesey, Simpson, Hamilton.

104, 105, 106. *Advanced Reading*. Courses to be taken with 101, 102, 103, if so desired, to make five-hour courses. Prerequisites, French 6 and 9. French 101 and 104, 102 and 105, are offered each quarter; 103 and 106 are not offered in the autumn quarter. Two credits a quarter.

Patzer, deVries, Chessex, Whittlesey, Simpson, C. Wilson, Hamilton.

107, *108. *Themes*. Writing of original compositions upon assigned topics. Prerequisite, French 102. Those taking French 107 or 108 are not required to offer 103. This course is numbered 107 and 108 in alternate years, so that students may receive credit for two quarters of this work if they wish; for 1932-1933 the number is 107. Three credits; spring. Helmlingé.

118, 119, 120. *Survey of French Literature*. Lectures in English and collateral reading of English translations. Those who have studied French sufficiently will be assigned French texts to read. No prerequisites. Three credits a quarter; autumn, winter, spring. deVries.

*121, 122, 123. *The French Novel*.

124, 125, 126. *The Short Story*. Conducted in French. Development of the short story from the fabliaux to modern times. Special attention to Daudet, Maupassant, Bazin and a few others. Prerequisites, French 6 and 9. Three credits a quarter; autumn, winter, spring. Helmlingé.

127, 128, 129. *Advanced Conversation for Majors*. Careful preparation for each day's exercise will be required, and full credit given. Prerequisite, French 102, or equivalent. Two credits a quarter; autumn, winter, spring.

Helmlingé.

131, 132, 133. *Lyric Poetry*. Conducted in French. The best lyrics since the sixteenth century, especially those of Lamartine, Hugo and Musset. Prerequisite, French 104 or equivalent. Two credits a quarter; autumn, winter, spring.

Helmlingé.

134, 135, 136. *Comparative Literature of France, Italy and Spain in English Translation*. See French 34, 35, 36.

141, 142, 143. *The French Drama*. History of the French drama from its beginning. Lectures in French and assigned reading to be done outside of

*Not offered in 1932-1933.

class. Prerequisites, French 6 and 9 or equivalent. Three credits a quarter; autumn, winter, spring. Chessex.

151, 152, 153. *History of the French Literature of the Nineteenth Century*. Lectures in French and assignments of reading to be done outside of class. Prerequisites, French 6 and 9, or equivalent. Three credits a quarter; autumn, winter, spring. Simpson.

154, 155, 156. *Contemporary French Literature*. A survey of French literature from 1900 to date. Lectures and assigned reading. Conducted in English. Assigned reading in French for those who can read French; in English translation for those who do not know French. Prerequisite; any student may enter this class if he has junior standing; any freshman or sophomore may enter if he has had French 6 and 9 or equivalent. Three credits a quarter; autumn, winter, spring. Patzer.

158, 159. *Advanced Syntax*. French syntax from the teacher's standpoint. If possible these courses should precede the teachers' course. Prerequisite, French 103 or 107. Two credits a quarter; winter, spring. Frein, Chessex.

161, 162, 163. *Eighteenth Century Literature*. Lectures in French. Assigned reading and reports; the written reports need not be in French, but class discussions will be mostly in French. Prerequisite, French 6 and 9, or equivalent. Two credits a quarter; autumn, winter, spring. Chessex.

*171, 172, 173. *Seventeenth Century Literature*.

Teachers' Course in French. See Edu. 75K.

COURSES FOR GRADUATES ONLY

No student will be given a master's degree with a minor in this department until he shall have done at least as much as is required of students working for the bachelor of arts degree with a major in this department.

201, 202, 203. *Middle French and Sixteenth Century*. Lectures in French. Reading assigned from fourteenth, fifteenth and sixteenth century authors. Prerequisite, four years of French. Two credits a quarter; autumn, winter, spring. Frein.

221, 222, 223. *Old French Reading*. One of the most helpful courses for teachers of French. Open to graduates who have studied French at least four years. Graduates who are not French majors will translate the Old French into English; French majors will be expected to translate the Old French into modern French. Five credits a quarter, autumn, winter, spring. Goggio.

231, 232, 233. *History of Old French Literature*. Lectures in French. Assigned reading in French for majors in this department, in English translation for those who do not read French easily. Prerequisite, graduate standing and at least four years of French. Three credits a quarter; autumn, winter, spring. Frein.

*241, 242, 243. *French Historical Grammar*.

*281, 282, 283. *Seminar in Fifteenth and Sixteenth Century Literature*.

291, 292, 293. *Conferences for Thesis*. Graduates at work upon a thesis will arrange their conferences individually with the instructor in charge. Frein, Patzer.

*Not offered in 1932-1933.

II. ITALIAN

The department, through its scheme of alternate courses, offers enough work to satisfy the major or minor requirements. Students who desire to major or minor in Italian are requested, however, to plan their work with the instructor in charge.

1-2-3. *Elementary*. No credit will be given for Italian 1 until 2 and 3 have been completed. Ital. 1 is repeated in winter and Ital. 2 in the spring. Courses 2 and 3 may be taken with 4 and 5, making two five-credit courses. Students who receive credits in Ital. 111, 112, 113, or in Ital. 121, 122, 123, will not be required to do Ital. 3. Three credits a quarter; autumn, winter, spring. Goggio, Giuntoni.

4, 5. *Reading Course for Beginners*. Supplementary to courses 2 and 3. Italian 4 is repeated in the spring. Prerequisites, Ital. 1 for 4; Ital. 4 or the instructor's permission for 5. Two credits a quarter; winter, spring. Giuntoni.

111, 112, 113. *Modern Italian Literature*. Prose and poetry of the eighteenth and nineteenth centuries. Lectures and collateral reading. Composition. Prerequisite, Ital. 3 or 4, or Ital. 2 with grade of A or B. Two or three credits a quarter; autumn, winter, spring. Goggio.

*121, 122, 123. *The Italian Novel*.

181, 182. *Dante in English Translation*. The Divine Comedy studied so as to draw from it Dante's imaginative and philosophical ideas as related to medieval thought. No knowledge of Italian is necessary. Two credits a quarter; autumn, winter. Goggio.

184. *Renaissance Literature of Italy in English Translation*. Stress will be laid on the works of Petrarch and Boccaccio especially, and on those of Machiavelli, Castiglione, Cellini, Ariosto and Tasso. Lectures in English and collateral reading. No knowledge of Italian is necessary. Two credits; spring. Goggio.

COURSES FOR GRADUATES ONLY

*201, 202, 203. *Italian Literature of the XV and XVI Century*.

221, 222, 223. *Italian Literature of the XIII and XIV Century*. Open to all who can read Italian. Research according to the ability and special interests of the students. Two to five credits a quarter; autumn, winter, spring. Goggio.

*231, 232, 233. *The Works of Dante*.

*234. *Italian Historical Grammar*.

III. PROVENÇAL

223. *Old Provençal*. Readings, mostly epic and lyric. Three credits; spring. Goggio.

IV. SPANISH

Requirements of the department: Span. 159, 101, 102, 103, Edu. 75Y, and at least nine credits of literature are required of majors and of all who wish to be recommended as teachers. Freshmen and sophomores may enter any course, except graduate, for which they have the prerequisite.

*Not offered in 1932-1933.

1-2, 3. *Elementary*. No credit will be given for Span. 1 until 2 has been completed. Five credits a quarter; each course repeated every quarter.

4, 5, 6. *Reading of Modern Authors*. Span. 4, 5, 6, may be combined with 7, 8, 9, making a five-hour course each quarter. Prerequisite to Span. 4 is 3 or equivalent. Three credits a quarter; autumn, winter, spring.

7, 8, 9. *Grammar, Composition, Conversation*. May be combined with Span. 4, 5, 6, making a five-hour course. Prerequisite to Span. 7 is 3. Span. 7 is prerequisite to 8. Two credits a quarter; autumn, winter, spring.

34, 35, 36, or 134, 135, 136. *Comparative Literature of France, Italy, Spain, in English Translation*. Three credits a quarter. (For description of course see French 34, 35, 36.)

101, 102, 103. *Advanced Composition and Conversation*. Prerequisite, Span. 9. Three credits a quarter; 101, 102, repeated in spring quarter; 103 in winter and spring. Garcia-Prada, Wilson, Vargas.

118, 119, 120. *Survey of Spanish Literature*. Selected texts, collateral reading, lectures. Prerequisite, Span. 6. Two credits a quarter; autumn, winter, spring. Garcia-Prada, Umphrey.

*121, 122, 123. *The Novel*.

*131. *Lyric Poetry*.

141, 142, 143. *Spanish Drama*. Origins and early development. Selected texts, collateral reading, lectures, reports. Prerequisites, Span. 6 and 9, or equivalent. Three credits a quarter; autumn, winter, spring.

Garcia-Prada, Umphrey.

151, 152, 153. *Spanish Literature of the Nineteenth Century*. One quarter will be given to each of the three periods respectively: romantic movement, middle period, recent and contemporary literature. Lectures, collateral reading. Prerequisite, Span. 6 and 9. Two credits a quarter; autumn, winter, spring. Garcia-Prada.

159. *Advanced Syntax*. Problems in syntax studied from the teacher's point of view. Prerequisite, Span. 102. Three credits; autumn. Umphrey.

*171, 172, 173. *Seventeenth Century Literature*.

184, 185, 186. *Spanish American Literature*. Representative writings of Spanish American authors. Collateral reading and reports. Lectures. Prerequisites, Span. 6 and 9, or equivalent. Three credits a quarter; autumn, winter, spring. Umphrey.

Teachers' Course in Spanish. See Education 75Y.

COURSES FOR GRADUATES ONLY

The *minor* will not be given to candidates for the master's degree in other departments until they shall have done at least as much as is required of majors for the bachelor's degree in this department.

221. *Old Spanish Readings*. Reading and linguistic study of the *Poema de mio Cid* and other Old Spanish texts. Five credits; autumn. Umphrey.

231. *Epic Poetry*. The epic material in Old Spanish literature and its later treatment in poetry and drama. Special investigations and reports. Five credits; winter. Umphrey.

*Not offered in 1932-1933.

241. *Spanish Historical Grammar*. Five credits; spring. Umphrey.

291, 292, 293. *Conferences for Thesis*. Graduates at work upon a thesis will arrange their conferences individually with the instructor in charge. Umphrey.

COMPARATIVE PHILOLOGY

The following courses in comparative philology are available in the department of Scandinavian Languages and Literature:

190-191. *Introduction to the Science of Language*. Two credits; autumn, winter. Vickner.

192. *Life of Words*. Two credits; spring. Vickner.

SCANDINAVIAN LANGUAGES AND LITERATURE

Denny Hall

Professor Vickner, Executive Officer

1-2, 3. *Elementary Swedish*. Courses 1-2, 3 may be taken with 4-5, 6, making a five-hour course; 1, 2, 3, are hyphenated if 4-5 are not taken. Three credits a quarter; autumn, winter, spring. Vickner.

4-5, 6. *Swedish Reading Course for Beginners*. Supplementary to courses 1-2, 3, but may also be taken separately. No previous knowledge of Swedish necessary. Two credits a quarter; autumn, winter, spring. Vickner.

10-11, 12. *Elementary Norwegian-Danish*. Courses 10-11, 12 may be taken with 13-14, 15, making a five-hour course; 10, 11, 12 are hyphenated if 13-14 are not taken. Three credits a quarter; autumn, winter, spring. Vickner.

13-14, 15. *Norwegian-Danish Reading Course for Beginners*. Supplementary to 10-11, 12, but may also be taken separately. No previous knowledge of Norwegian-Danish necessary. Two credits a quarter; autumn, winter, spring. Vickner.

20, 21, 22. *Norwegian-Danish Literature*. Prerequisite, ability to read easy Norwegian or Danish. May be entered any quarter. Two credits a quarter; autumn, winter, spring. Vickner.

23, 24, 25. *Swedish Literature*. Prerequisite, ability to read easy Swedish. May be entered any quarter. Two credits a quarter; autumn, winter, spring. Vickner.

103, 104, 105. *Recent Swedish Writers*. Representative writers of the nineteenth and twentieth centuries. Prerequisite, relatively fluent reading knowledge of Swedish. May be entered any quarter. Two or three credits; four credits by permission; autumn, winter, spring. Vickner.

106, 107, 108. *Recent Norwegian-Danish Writers*. Representative writers of the nineteenth and twentieth centuries are read. Prerequisite, relatively fluent reading knowledge of Norwegian-Danish. May be entered any quarter. Two or three credits; four credits by permission; autumn, winter, spring. Vickner.

109, 110, 111. *Modern Scandinavian Authors in English Translation*. No knowledge of the Scandinavian languages necessary. May be entered any quarter. One credit a quarter; autumn, winter, spring. Vickner.

180, 181, 182. *Recent Scandinavian Literature in English Translation*. No knowledge of the Scandinavian languages necessary. May be entered any quarter. Two credits; autumn, winter, spring. Vickner.

COURSES FOR GRADUATES ONLY

*201-202. *Old Icelandic*.

*203-204. *History of the Swedish Language*.

205-206. *Scandinavian Literature in the Nineteenth Century*. Two to four credits a quarter; winter, spring. Vickner.

*208. *Scandinavian Lyric Poetry*.

*209. *History of Scandinavian Literature*.

COMPARATIVE PHILOLOGY

190-191. *Introduction to the Science of Language*. General principles of linguistic development with special reference to English. Prerequisite, some knowledge of one of the classical languages and of one modern foreign language or Old English. Two credits; autumn, winter. Vickner.

192. *Life of Words*. Etymology and semasiology; growth of vocabulary; word values. Lectures, discussions, and exercises. Prerequisite, same as for courses 190-191. Two credits; spring. Vickner.

SOCIOLOGY

Physics Hall

Professor Steiner, Executive Officer

Sociology treats of the life of human groups. Its subject matter is closely related to that presented by the other social studies. Students should read the departmental leaflet and consult staff advisers before selecting courses.

Soc. 1 or its equivalent is required of those taking advanced work. Course 150, General Sociology, may be substituted by upper division students. The courses 55, 66, and 131 are fundamental for advanced work and these courses or their equivalents must be taken by major students before electing special lines.

1. *Introductory Sociology*. A course which aims to introduce the student to the data and method of studying group life. (Juniors and seniors may substitute 150, General Sociology). Five credits; autumn, winter, spring.

Hayner, Guthrie, _____, _____,

55. *Human Ecology*. Factors and forces which determine the distribution of people and communities. A study of ecological concepts and processes. Five credits; autumn, spring. Steiner.

56. *The Family*. The changing home; family and marriage customs; family interaction and organization; analysis and treatment of domestic discord. Five credits; winter. Hayner.

57. *Child Welfare*. Rights of childhood to health, education, recreation, protection; measures used to secure them. Field trips. Three credits; winter. Hathway.

*61. *The Rural Community*.

* Not offered in 1932-1933.

62. *Play and Leisure Time.* Theories and functions of play; traditional and commercialized forms of recreation; social utilization of leisure. Three credits; spring. Hayner.

63. *Community Organization.* Special conditions that underlie the modern community organization movement. Case studies of attempts at community organization. Three credits; spring. Hathway.

64. *Field of Social Work.* Historical background and development of social work as a specialized field. Present scope, aims and methods. Typical problems and agencies; field trips. Three credits; autumn. Hathway.

65. *The City.* Factors determining the growth, structure and composition of cities. Should if possible be preceded by Soc. 55. Five credits; winter. Steiner.

66. *Group Behavior.* Analysis of conditioning factors and collective response in typical social groups—crowds, assemblies, parties, sects, etc. Prerequisites, five credits of psychology and five credits in sociology. Five credits; winter. Woolston.

67. *Urban Attitudes.* Development of habits and standards in cities. Circumstances controlling urban groups. Prerequisites, five credits in psychology and five credits in sociology. Five credits; autumn. Woolston.

68. *National Traits.* Traditional differences between peoples. Historic backgrounds and prejudice. Problems of assimilation and amalgamation in America. Prerequisites, five credits in psychology and five credits in sociology. Five credits; spring. Woolston.

*70. *Family Standards.*

81. *Social Control of Defectives.* Social factors involved and methods of dealing with the physically and mentally handicapped. Three credits; autumn. Hayner.

*90. *Social Change.*

130. *Methods of Social Investigation.* Concerns planning and conducting investigations of communities, institutions, social conditions. Five credits; autumn, spring. _____.

131. *Social Statistics.* Methods and sources for quantitative investigation, as applied to sociology and related fields. Five credits; winter. _____.

140. *Population.* A study of growth, composition and distribution of world populations. Prerequisite, five credits in sociology or five credits in economics. Three credits; autumn. Steiner.

141. *Migration.* A study of human migrations, the factors determining them and the problems arising therefrom. Prerequisite, five credits in sociology or five credits in economics. Three credits; winter. Steiner.

142. *Race Invasion.* General survey of race invasion and the conditions associated therewith. Special attention given to race invasion on the Pacific Rim. Prerequisite, five credits in sociology or five credits in economics. Three credits; spring. Steiner.

144. *Social Frontiers.* A study of demarcation between social groups; contact, defense and penetration of boundaries; lines of cleavage within communities. Prerequisite, ten credits of sociology or equivalent. Three credits; autumn. Woolston.

*Not offered in 1932-1933.

145. *Assimilation.* The fusion of cultures; programs of nationalization; traditional and experimental methods of training for citizenship. Prerequisite, ten credits of sociology or equivalent. Three credits; winter. Woolston.

146. *Co-operation.* Development of mutual aid in civilization; economic, political, and cultural forms. Prerequisite, ten credits of sociology or equivalent. Three credits; spring. Woolston.

150. *General Sociology.* Major concepts of sociology and the scientific point of view in dealing with social phenomena. Prerequisites, five credits in psychology and five credits in social science. Five credits; autumn. Guthrie.

*152. *Social Control.*

153. *Problems of Poverty.* History and ecology of poverty; causes underlying destitution; methods of prevention and relief. Three credits; winter. Hayner.

154. *Administration of Social Agencies.* (Offered in Extension Service.)

155. *Social Legislation.* An historical and critical analysis of the programs of social legislation in relation to child welfare and factory legislation in the United States and Europe. Five credits; spring. Hathway.

156. *Criminology.* Individual and social factors in delinquency; history and methods of criminal justice. Field trips to local penal institutions. Five credits; spring. Hayner.

157. *Social Pathology.* Causes and treatment of personal and social disorganization with attention to selected problems. Not open to students who have had Soc. 80. Five credits; autumn. Hayner.

*158. *Personality Problems.*

164. *Social Education.* Purpose, content and method of courses intended to promote good citizenship. Recommended for teachers of social science subjects. Prerequisite, fifteen credits in social science. Two credits; spring. Woolston.

171-172-173. *Social Case Work.* Principles and methods of social case work. Processes in treatment of economic, medical and behavior problems. Two hours class work, 12 hours supervised field work with local agencies. Prerequisite, Soc. 64 or permission of instructor. Students may take first two consecutive quarters or all three. Five credits; autumn, winter, spring. Hathway.

175. *Social Work and Health.* Introduction to the point of view and method of social case work. Open to students from the department of nursing education, and to others with permission of instructor. Two hours class, 12 hours supervised field work. Five credits; autumn. Hathway.

178. *The State and Social Welfare.* An introductory course presenting a general view of state participation in social work in the United States and Europe. Five credits; winter. Hathway.

180. *Public Welfare Administration.* (Offered in Extension Service.)

*194. *History of Social Thought I.*

195. *History of Social Thought II.* Study of the founders of sociological theory from Comte to the twentieth century. Prerequisite, ten credits in sociology or equivalent. Three credits; winter. Guthrie.

196. *History of Social Thought III.* Study of the contemporary trends in sociological theory in Europe and America. Prerequisite, ten credits sociology or equivalent. Three credits; spring. Guthrie.

* Not offered in 1932-1933.

COURSES FOR GRADUATES ONLY

200. *Secret Societies*. Growth, organization and activity of mystery groups—fraternal, religious, craft and political. For advanced students in social psychology. Two credits; autumn. Woolston.

201. *Public Opinion*. Character and operation of beliefs formed by general discussion. Problems of propaganda, criticism and education. Advanced students only. Two credits; winter. Woolston.

Attention is called to Psych. 117, Superstition and Belief, and Jour. 201, Propaganda, which articulate with and complete the work of this course.

207-208-209. *Community Research*. Original investigation of special community problems. Prerequisite, graduate standing. Two credits a quarter; autumn, winter, spring. Steiner.

210-211-212. *Departmental Seminar*. Open to graduate students completing independent investigations and to instructors in the department. Two credits each; autumn, winter, spring. Staff.

ZOOLOGY AND PHYSIOLOGY

Johnson Hall

Professor Kincaid, Executive Officer

ZOOLOGY

1-2. *Elements of Zoology*. General review of zoological science, stressing the philosophic and economic aspects of the subject. Five credits a quarter; autumn, winter, repeated winter, spring. Kincaid, Hatch and assistants.

3-4. *Pre-Medical Zoology*. For students entering a medical course. Five credits a quarter; autumn, winter. Guberlet.

5. *General Embryology*. Comparative developmental history of animals, with emphasis on vertebrate forms. Prerequisite, Zool. 1-2 or 3-4. Five credits; spring. Guberlet.

16. *Evolution*. Lectures on the more important biological problems related to the general theory of evolution. Two credits; autumn. Kincaid.

17. *Eugenics*. Principles of evolution in their relation to human welfare. Two credits; winter, spring. Kincaid.

101. *Cytology*. The structure and activities of the animal cell with special reference to problems of development, sex-determination, and heredity. Prerequisite, Zool. 1-2 or 3-4. Five credits; spring. Miller.

*102. *Experimental Zoology*.

106. *Plankton*. Classification, adaptations and interrelationships of the microscopic fauna of the sea. Field work in Puget Sound. Prerequisite, Zool. 1-2. Five credits; autumn. Kincaid.

107. *Parasitology*. Animal parasites. Prerequisite, Zool. 1-2 or 3-4. Five credits; spring. Guberlet.

*Not offered in 1932-1933.

108. *Limnology*. Classification and interrelationship of organisms found in lakes and streams. Field work in neighboring fresh-water bodies. Prerequisite, Zool. 1-2. Five credits; spring. Kincaid.

111. *Entomology*. The structure, classification and economic relations of insects. Prerequisite, Zool. 1-2 or equivalent. Five credits; spring. Hatch.

**112. *Insect Morphology*. The structure and taxonomy of insects. Prerequisite, Zool. 111 or equivalent. Five credits. Hatch.

121. *Microscopic Technique*. Methods of imbedding, sectioning and staining animal tissues. Prerequisite, Zool. 1-2 or its equivalent. Three credits; winter. Guberlet.

125, 126. *Invertebrate Zoology*. The morphology, physiology and ecology of invertebrate animals, with special reference to the local marine fauna. Prerequisite, Zool. 1-2 or 3-4. Five credits a quarter; autumn, winter. Miller.

127, 128. *Comparative Anatomy*. Comparative morphology of the vertebrate animals. Prerequisite, Zool. 1-2 or 3-4. Five credits a quarter; autumn, winter. Miller.

131. *History of Zoology*. The history of zoology during ancient, medieval and modern times. Prerequisite, 30 credits of zoology. Two credits; autumn. Hatch.

**155, 156, 157. *Elementary Problems*. Students will be assigned minor problems under direction of an instructor in the department. Prerequisite, 20 credits in zoology or physiology. Three credits; autumn, winter, spring. Staff.

Teachers' Course in Zoology. See Education 75Z.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Research*. Students capable of carrying on independent work will be assigned problems under direction of an instructor. Prerequisite, 25 credits in zoology. Credit to be arranged. Staff.

205, 206, 207. *Advanced Problems*. Designed especially for graduate students working for the doctor's degree. Hours and credits to be arranged. Staff.

210, 211, 212. *Seminar*. Reports and discussions of current zoological literature. The history of zoology. One credit; any quarter. Staff.

213, 214, 215. *Advanced Invertebrate Embryology*. Development and life history of invertebrate animals, particularly of marine forms, life history of parasites of marine fishes, examination and determination of contents of fish stomachs. Prerequisites, Zool. 5, 106 and 126. Three credits; autumn, winter, spring. Guberlet.

PHYSIOLOGY

6. *Elementary Physiology*. Human structure and function, designed to meet the needs of students in pharmacy. Five credits; spring. Goodsell.

7. *Elementary Physiology*. Structure and functions of the human body, with special emphasis on metabolism, and the nervous and vascular systems. Five credits; autumn, winter, spring. Smith.

20. *Physiology for Hospital Students*. A special course for hospital students. Three credits; autumn, winter, spring. Goodsell.

**Will be offered if a sufficient number of students elect the course.

50. *Physiology*. Required of students majoring in physical education. Six credits; winter. May be taken as a five-credit course without laboratory by students not registered in the College of Science. Smith.

53-54. *Intermediate Physiology*. Adapted for students expecting to teach the subject in high school. Required of nursing majors; recommended for students in dietetics and sanitary science. Five credits; autumn, winter. Smith.

115. *Principles of General Physiology*. Application of the laws of physics and chemistry to physiological processes. Prerequisites, one year each, zoology, chemistry and physics. Five credits; autumn. Goodsell.

151-152-153. *Advanced Physiology*. Arranged for students in medicine and advanced students who wish to study experimental methods. Prerequisites, Zool. 1-2, Chem. 23 and Phys. 3. Five credits a quarter; autumn, winter, spring. Smith.

163. *Physiology of Metabolism*. An advanced course in metabolism. Prerequisites, Physiol. 7 or Zool. 2 and 4 and Chem. 23. Five credits; spring. Smith.

SUMMER QUARTER

Burd, Henry Alfred, Ph.D.....*Director*

History. The first summer session of the University of Washington was held in June and July of 1904 with a total attendance of 114 and a faculty of 25. During the summer of 1931 there was a student body of 3,686 and a teaching staff of more than 200.

The summer quarter is an integral part of a four-quarter University year and its courses are co-ordinated with those of the other quarters. It is divided into two terms of equal length. Students may enroll for either term separately or for the entire quarter.

Resources. The entire physical resources of the University are available to summer students. Recitation halls, libraries, laboratories, the museum, the art gallery, the health service, and the commons are in regular use.

Special Advantages. Because of the season of the year, because the extra-curricular activities of the regular academic year are largely discontinued, and because of the large number of teachers and visitors in attendance, special advantages in great variety are available to summer students.

These include opportunities for industrial, educational, sociological, and historical study provided by the city of Seattle and its environs; a climate delightfully adapted to habits of study; world renowned scenic attractions and recreational opportunities at their best; organized trips to places of special interest; pageants, dramatic attractions, and concerts featuring famous artists; and a series of special lectures at 4 and 8 o'clock from Monday to Thursday of each week.

Entrance Requirements. Entrance requirements for the summer quarter are the same as for any other quarter of the University year. As far as possible, all credentials for prospective students and applications for admission should be in the hands of the registrar before the opening of the quarter.

Registration. Registration for the summer quarter of 1933 may be completed on or before Tuesday, June 13. Students expecting to be in attendance during the second term only may register on or before Saturday, July 22, 12 m. Students living outside of Seattle may, with the consent of the registrar, register by mail. Write for application form.

Credits. Students desiring university credit will be required to pass examinations during the closing week of each term.

Amount of Work Registered For. The regular load is seven and one-half credits each term or fifteen credits for the entire quarter. Students whose previous record is good, or whose experience and maturity seem to warrant it (if no grades are on record here) may register with the consent of the dean of the college concerned, for a maximum of 10 credits for one term or 20 credits for the entire quarter.

Fees. For statement of summer quarter fees, see page 46.

Graduate School. The University lays special emphasis on graduate work during the summer quarter. More than a third of the students are enrolled in the Graduate School. Attendance during three summer quarters will satisfy the residence requirement for the master's degree. Candidates for the doctorate are not encouraged to register in courses during the summer quarter, beyond the work of the first year. They may, however, proceed with work on their theses.

College of Liberal Arts. Summer quarter instruction is provided in languages, education, economics and business administration, history, mathematics,

philosophy, political science, psychology, sociology, and anthropology. Students seeking a general education and those preparing to enter the Schools of Law, Journalism, Education, and Library Science will naturally enroll here.

Education. The curriculum of the School of Education is expanded and its faculty augmented to meet the needs of the increasing numbers of teachers who attend. Those who plan to obtain a degree or a normal diploma therefore find greatly enriched opportunities in the summer quarter.

College of Business Administration. An interesting curriculum is offered in the fields of accounting, commercial banking and credit administration, commercial teaching, economics, foreign trade, investment banking, labor, management, marketing, merchandising, and advertising, public utilities, real estate, and transportation.

College of Science. Beginning or fundamental courses are repeated each summer. Advanced and graduate courses are changed from summer to summer so that variety is available to those attending year after year.

In comparison with the other quarters of the year, the summer session is a very desirable time for work in the science departments. The classes are usually not so large, the laboratories are not so crowded, and the opportunities for field-trips about the campus and into the neighboring region unsurpassed.

College of Fine Arts. Summer courses in architecture are selected especially for their value to teachers of architectural drawing and design and appreciation of the fine arts. Courses offered in music serve to enrich the musical knowledge, broaden the musical interest, and quicken the enthusiasm by making fresh points of contact with new phases of musical study and new suggestions of methods of presentation. Teachers and majors in art are offered both beginning and advanced courses in painting, sculpture, and design.

Law School. Summer work in law enables students to hasten the completion of their training and their entry into practice. In addition, it offers advantages to school or college teachers intending to practice law who desire to complete part of their preparation for the bar before leaving their positions to enter a law school, to students in other law schools who wish to do extra work for credit in their own schools, and to practitioners who desire systematically to pursue particular subjects.

School of Journalism. Courses are planned primarily for teachers and for students of other schools and colleges.

College of Engineering. Courses for teachers of industrial arts are offered in engineering shop. General engineering courses are being expanded as the demand grows.

School of Library Science. Courses offered in 1932 were for the express purpose of aiding teacher-librarians to meet the standards set by the State Board of Education in their field of instruction.

Library work will be continued and expanded if the interest is sufficient to warrant it.

Information. For bulletin and other information address Henry A. Burd, Director of the Summer Quarter.

UNIVERSITY OF WASHINGTON OCEANOGRAPHIC LABORATORIES

SEATTLE AND FRIDAY HARBOR

The Staff

Thomas G. Thompson, Ph.D....	<i>Professor of Chemistry; Director of the Oceanographic Laboratories</i>
John E. Guberlet, Ph.D.....	<i>Professor of Zoology</i>
Robert C. Miller, Ph.D.....	<i>Associate Professor of Zoology</i>
Lyman D. Phifer, M.S.....	<i>Assistant Director</i>
George B. Rigg, Ph.D.....	<i>Professor of Botany</i>
Rex J. Robinson, Ph.D.....	<i>Instructor in Chemistry</i>
Clinton L. Utterback, Ph.D.....	<i>Associate Professor of Physics</i>
Mary Grier, B.S. in L.S.....	<i>Librarian</i>
Julius Hoverson, M.S.....	<i>Curator, Friday Harbor Laboratories</i>

Scope of the Work. The University of Washington Oceanographic Laboratories were created by action of the Board of Regents on March 29, 1930. The purpose of the organization is to correlate and co-ordinate the research dealing with various problems of the sea, which previously were conducted independently by the several departments of the College of Science.

The main laboratories are situated on the shore of Lake Union, from which ready access to the sea is obtained through the Lake Washington canal. The laboratories are equipped for work in marine botany and plant physiology, chemistry, physics, and zoology. A system of circulating sea water, maintained at a temperature averaging 10° C., is installed in the building.

A 75-foot boat, the *Catalyst*, designed and equipped for carrying out certain scientific investigations while at sea, is maintained and operated by the Laboratories.

The Oceanographic Laboratories also include the buildings and equipment located on a 485-acre tract with two miles of shore line near Friday Harbor. Problems receiving special attention are:

Botany. Plant physiology and ecology, phytoplankton.

Chemistry. Oceanographical chemistry, micro chemistry.

Physics. Physics of the sea, hydrodynamics.

Zoology. Embryology, zooplankton, invertebrate zoology, ecology, parasitology.

Equipment. The laboratories and the library are equipped for work in some of the general problems of oceanography.

Admission. Graduate standing is required for admission to the work of the laboratories, although the applications of seniors with high scholastic records and potential research ability may be considered. Application for admission and information regarding tuition and fees should be made to the director. Transcript of scholastic record should accompany application.

Class Work. Classes are chiefly in the form of seminars held by various members of the staff.

Research. Properly prepared students are assigned research problems under a member of the staff according to the major interest of the student. The laboratories are open throughout the year to visiting research workers. Communications concerning research space should be addressed to the director.

THE UNIVERSITY EXTENSION SERVICE

Smith, Harry Edwin, Ph.D.....Director

GENERAL STATEMENT

The Extension Service of the University of Washington provides university instruction by mail and in extension classes and lectures for those who cannot give full time to university study.

The Extension Service presents for 1932-33 the following activities:

- | | |
|---|----------------------------------|
| 1. Evening Campus Classes. | 4. Graduate Medical Lectures. |
| 2. Off Campus Classes (Seattle, Everett, Tacoma). | 5. Graduate Nurses' Institute. |
| 3. Home Study. | 6. Firland School for Nurses. |
| | 7. Harborview School for Nurses. |

About 400 courses are available either through correspondence or in classes, at moderate fees. This Service is an integral part of the University, and is maintained by the State for educational services to those engaged in gainful employment who desire to pursue advanced study.

UNIVERSITY CREDIT

Most of the courses at present offered by classes and by correspondence may be taken by properly qualified students for credits toward a university degree. Credit work is of course subject to all rules and regulations of the University that are applicable.

HOME STUDY COURSES AND UNIVERSITY DEGREES

Students who are unable to spend in residence the full number of years required for a university degree may take as many as half of the required credits for graduation through Home Study, provided that not less than one year of work is done in residence at the University of Washington. But in the senior year at least 36 of the 45 credits must be earned in residence. For such Home Study courses, the student should plan well in advance and with the advice of University authorities. The studies required in the freshman and sophomore years are more largely available for Home Study. Therefore, to make a combination of Home Study and residence study, students should plan for the first rather than the latter part of the University course in Home Study.

Requirements for the University life diploma may be satisfied in part by Home Study credits.

TUITION FEES

Fees are due and payable at the time of enrollment and are refunded if the applicant is rejected or in case of failure to give the course. Enrollment constitutes an agreement on the part of the student to complete the course and he must take the responsibility for any failure on his part to do it.

Fees are based upon a uniform charge of \$4 for credit hour: five 2-hour sessions are required for one credit in a class and six assignments for one credit in home study.

HOME STUDY COURSES

Home Study Courses of Instruction. Anthropology, astronomy, botany, classical languages and literature, economics and business administration, education, engineering, English language and literature, geology, Germanic languages and literature, history, home economics, mathematics, music, navigation, nursing, painting, sculpture and design, philosophy, political science,

psychology, Romanic languages and literature, Scandinavian languages and literature, sociology, zoology.

The University reserves the right to change this list without notice. Faculty changes, the publication of new textbooks, changes in the material to be emphasized may compel the withdrawal or shifting of courses. It is planned to keep the list of courses revised and as nearly permanent as circumstances warrant.

EXTENSION CREDITS FOR STUDENTS IN RESIDENCE

Extension courses are not intended for students in University residence and can be taken by them only in exceptional cases. A student may take courses in the Extension Service while regularly enrolled in the University, provided the consent of his dean and the approval of the registrar of the University and the director of the Extension Service are filed in writing with his application. If a student has begun a course while not in residence and desires to complete it after he begins his residence work, he should file his application in writing at the time he begins his residence work. Such application will generally be denied if it is not filed until the Extension work has been done while in residence and also if the student's previous grades would not justify his carrying the number of hours that his residence plus his Extension work would total. Blanks for this purpose may be secured at the office of the Extension Service.

GRADUATE MEDICAL LECTURES

In co-operation with the Washington State Medical Society and the King County Medical Society, the Sixteenth Graduate Medical Lectures were held July 14 to 18, 1932, inclusive.

COURSES IN PUBLIC HEALTH NURSING

The University of Washington Department of Nursing Education through the Extension Service, offers a course in public health nursing to graduate nurses at Firland Sanatorium and at Harborview Hospital. A two-year curriculum is offered.

GRADUATE NURSES' INSTITUTE

In co-operation with the Washington State Graduate Nurses' Association, the Washington League of Nursing Education and the State Public Health Nurses' Organization, the University of Washington Department of Nursing Education through the Extension Service conducts a Graduate Nurses' Institute, each summer.

SUMMARY OF DEGREES CONFERRED

1931

BACHELOR'S DEGREES

COLLEGE OF LIBERAL ARTS

Bachelor of Arts.....	286
Bachelor of Arts in Dramatic Art.....	12
Total.....	<u>298</u>

COLLEGE OF SCIENCE

Bachelor of Science.....	79
Bachelor of Science in Anatomy.....	10
Bachelor of Science in Botany.....	3
Bachelor of Science in Chemistry.....	15
Bachelor of Science in Fisheries.....	6
Bachelor of Science in Geology.....	1
Bachelor of Science in Home Economics.....	39
Bachelor of Science in Nursing.....	15
Bachelor of Science in Physical Education.....	18
Bachelor of Science in Physics.....	1
Bachelor of Science in Zoology.....	10
Total.....	<u>197</u>

COLLEGE OF FINE ARTS

Bachelor of Architecture.....	19
Bachelor of Fine Arts.....	41
Bachelor of Arts in Music.....	10
Bachelor of Music.....	52
Total.....	<u>122</u>

COLLEGE OF ENGINEERING

Bachelor of Science in Aeronautics.....	13
Bachelor of Science in Chemical Engineering.....	16
Bachelor of Science in Civil Engineering.....	16
Bachelor of Science in Commercial Engineering.....	7
Bachelor of Science in Electrical Engineering.....	31
Bachelor of Science in Mechanical Engineering.....	19
Total.....	<u>102</u>

COLLEGE OF MINES

Bachelor of Science in Geology and Mining.....	3
Bachelor of Science in Ceramics.....	3
Total.....	<u>6</u>

COLLEGE OF FORESTRY

Bachelor of Science in Forestry.....	27
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COLLEGE OF BUSINESS ADMINISTRATION

Bachelor of Business Administration.....	151
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COLLEGE OF PHARMACY

Bachelor of Science in Pharmacy.....	19
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SCHOOL OF EDUCATION

Bachelor of Arts in Education.....	177
Bachelor of Science in Education.....	26
Total.....	203

SCHOOL OF JOURNALISM

Bachelor of Arts in Journalism.....	22
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LAW SCHOOL

Bachelor of Laws.....	70
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LIBRARY SCHOOL

Bachelor of Science in Library Science.....	50
GRAND TOTAL.....	1267

ADVANCED AND PROFESSIONAL DEGREES

Master of Arts.....	90
Master of Arts in Music.....	1
Master of Business Administration.....	7
Master of Education.....	2
Master of Fine Arts.....	1
Master of Forestry.....	6
Master of Science.....	49
Master of Science in Ceramics.....	1
Master of Science in Forestry.....	2
Master of Science in Mining Engineering.....	2
Master of Science in Home Economics.....	4
Master of Science in Pharmacy.....	3
Master of Science in Physical Education.....	2
Professional Degree in Civil Engineering.....	1
Professional Degree in Electrical Engineering.....	1
Professional Degree in Mechanical Engineering.....	3
Doctor of Philosophy.....	18
Total.....	193

DIPLOMAS AND CERTIFICATES

Certificate of Public Health Nursing.....	38
Normal Diplomas.....	386
Life Diplomas.....	249
Pharmaceutical Chemist.....	22
Certificate in Library Work with Children.....	4
Total.....	699

SUMMARY OF ENROLLMENT 1931-32

I. BY SCHOOLS AND COLLEGES

SCHOOLS AND COLLEGES	SUMMER QUARTER			AUTUMN QUARTER	WINTER QUARTER	SPRING QUARTER	TOTAL STUDENTS
	1st Term	2nd Term	Total				
	1	2	3	4	5	6	7
Bus. Admin..	224	181	224	1153	1024	915	1301
Men.....	166	136	166	913	849	739	1040
Women....	58	45	58	240	175	176	261
Education...	785	530	792	171	168	162	207
Men.....	178	146	182	68	73	73	84
Women....	607	384	610	103	95	89	123
Engineering...	79	56	82	875	805	732	969
Men.....	78	55	81	871	802	729	965
Women....	1	1	1	4	3	3	4
Fine Arts....	144	109	153	567	518	472	627
Men.....	20	20	22	209	165	152	226
Women....	124	89	131	358	353	320	401
Forestry.....	6	4	7	121	115	98	136
Men.....	6	4	7	119	113	97	132
Women....	..	..	..	2	2	1	4
Grad. School..	1081	887	1206	547	567	523	727
Men.....	488	405	527	334	341	318	423
Women....	603	482	679	213	226	205	304
Journalism...	10	11	14	50	53	47	59
Men.....	3	3	4	25	32	29	32
Women....	7	8	10	25	21	18	27
Law.....	77	69	77	311	273	262	328
Men.....	74	66	74	297	260	247	313
Women....	3	3	3	14	13	15	15
Liberal Arts..	684	441	735	1881	1839	1653	2108
Men.....	209	176	222	776	728	647	884
Women....	475	265	513	1105	1111	1006	1224
Library Sci...	39	17	46	44	44	44	46
Men.....	1	..	1	2	3	3	3
Women....	38	17	45	42	41	41	43
Mines.....	1	1	1	57	54	43	61
Men.....	1	1	1	56	53	42	60
Women....	..	..	..	1	1	1	1
Pharmacy....	8	7	8	120	115	107	128
Men.....	7	6	7	97	90	83	102
Women....	1	1	1	23	25	24	26
Science.....	327	241	341	1027	947	932	1218
Men.....	111	93	121	453	443	398	510
Women....	216	148	220	574	534	504	708
TOTALS.....	3475	2554	3686	6924	6522	5990	7915
Men.....	1342	1111	1415	4220	3952	3557	4774
Women....	2133	1443	2271	2704	2570	2433	3141

NOTE: Columns 1, 2, 4, 5 and 6 represent census figures, i.e., the enrollment taken on a stated day within the first month of a term or quarter. Columns 3 and 7 represent the number of individuals registered. Columns 3 the number registered during the summer quarter and column 7 the number registered during the academic year. For comparison with other institutions, the figures in columns 3 and 7 should be used as these are the customary catalogue figures.

SUMMARY OF ENROLLMENT 1931-32

II. BY CLASSES

CLASSES	SUMMER QUARTER			AUTUMN QUARTER	WINTER QUARTER	SPRING QUARTER	TOTAL STUDENTS
	1st Term	2nd Term	Total				
	1	2	3	4	5	6	7
Graduate....	1154	925	1274	635	636	592	720
Men.....	519	428	558	403	395	369	434
Women....	635	497	716	232	241	223	286
Seniors.....	647	559	677	1088	1264	1245	1298
Men.....	256	240	263	654	771	749	790
Women....	391	319	414	434	493	496	508
Juniors.....	612	435	625	1415	1390	1298	1554
Men.....	207	174	217	919	908	853	1004
Women....	405	261	408	496	482	445	550
Sophomores..	193	148	195	1659	1533	1387	1849
Men.....	113	90	115	1050	934	827	1172
Women....	80	58	80	609	599	560	677
Freshmen....	216	162	231	2077	1670	1427	2424
Men.....	109	91	120	1171	926	736	1340
Women....	107	71	111	906	744	691	1084
Specials.....	26	14	28	50	29	41	70
Men.....	11	8	12	23	18	23	34
Women....	15	6	16	27	11	18	36
Transients..	627	311	656	..	..	..	..
Men.....	127	80	130	..	..	..	..
Women....	500	231	526	..	..	..	..
TOTALS.....	3475	2554	3686	6924	6522	5990	7915
Men.....	1342	1111	1415	4220	3952	3557	4774
Women....	2133	1443	2271	2704	2570	2433	3141

NOTE: Columns 1, 2, 4, 5 and 6 represent census figures, i.e., the enrollment taken on a stated day within the first month of a term or quarter. Columns 3 and 7 represent the number of individuals registered. Columns 3 the number registered during the summer quarter and column 7 the number registered during the academic year. For comparison with other institutions, the figures in columns 3 and 7 should be used as these are the customary catalogue figures.

TOTAL STUDENTS IN RESIDENCE

During regular academic year.....	7,915
During summer quarter.....	3,686
	<u>11,601</u>
Deduct summer quarter duplicates.....	537
Total entire year.....	<u>11,064</u>

EXTENSION STUDENTS

Extension Classes:	
Men.....	617
Women.....	2,913
	<u>3,530</u>
Correspondence:	
Men.....	955
Women.....	871
	<u>1,826</u>
Total Extension Students.....	<u>5,356</u>

INDEX

- Absence, leave of, 58.
 Accredited schools, 38; admission from, 36.
 Administration, officers of, 11; assistant administrative officers, 11.
 Admission to the University, 35; by certificate, 35; by examination, 38; as a special student, 41; advanced undergraduate standing, 38; graduate standing, 40; requirements of different schools, 38; to the Bar, 129; to extension courses, 43.
 Admission from accredited schools, 36.
 Admission to the Colleges of Liberal Arts, 133; Science, 157; Business Administration, 61; Engineering, 94; Fine Arts, 100; Forestry, 111; Mines, 150; Pharmacy, 154; Schools of Education, 74; Library, 40; Journalism, 39; Law, 39; Graduate, 166.
 Advanced standing, 38, 42.
 Aeronautical Engineering, 92; Curriculum, 96; courses, 181.
 Alphabetical list of faculty, 12.
 Alumni Association, 56.
 American Pharmaceutical Association Medal, 55.
 Anatomy, 182.
 Anthropology, 183.
 Architecture, courses, 184; curriculum, 106; special requirements, 100.
 Art Gallery, 31.
 Arts and Law curriculum (combined), 139, 140.
 Associations and clubs, 56; alumni, 56; associated students, 56; mining society, 149.
 Associated students, 56; fees, 46, 56.
 Astronomy, courses, 185.
 Auditors, 42; fees, 46.
 Aviation flight training course, 37, 263.
 Bacteriology, courses, 186; curriculum, 159.
 Bailey, Babette Gatzert Foundation for Child Welfare, 31.
 Bar, admission to the, 129.
 Biological sciences, curriculum, 159.
 Board of Regents, 10.
 Board and room, 50.
 Botany, courses, 187.
 Breakage ticket deposit, 47.
 Buildings of University, 30.
 Bureau of Mines, Experiment Station, 31.
 Business Administration, College of, 33, 61; admission, 61; degrees, 61; curriculum, 61; council, 72; courses, 199.
 Cadet teaching, 75.
 Calendar, 9.
 Carkeek Prize, 55.
 Ceramics, 253; curriculum, 253.
 Changes of registration, 46; fee, 46.
 Charles H. Bebb Prize, 55.
 Charles Lathrop Pack Prize, 55.
 Chemistry, courses, 189; curriculum, 160.
 Chemical engineering, 93; curriculum, 96; courses, 189.
 Child Welfare, Bailey and Babette Gatzert Foundation, 31.
 Chinese (Oriental Studies), 267.
 Circolo, Italian Unibersitario Prize, 55.
 Civil engineering, 93; courses, 193; curriculum, 97.
 Classical Languages and Literature, 196.
 Classes, Saturday and evening, 76.
 Clubs, 56.
 College, definition of, 34.
 College Entrance Examination Board, 40.
 Commercial Engineering, 93; curriculum, 98.
 Committees: of the Board of Regents, 10.
 Commons, University, 50.
 Composition, courses, 213.
 Correspondence courses (Extension Service), 43, 302.
 Course, definition of, 34.
 Curricula, business administration, 61; education, 81; engineering, 95; fine arts, 101; forestry, 112; home economics, 86; journalism, 124; laws, 130; liberal arts, 138; library, 147; military science, 163; mines, 150; nurses, 171; pharmacy, 154; physical education, 175; premedical, 177; science, 157; special, 34.
 Curriculum, definition of, 34.
 Dean of Men, 56.
 Dean of Women, 56.
 Deficiencies, 37.
 Definitions and Explanations, 34.
 Degree, application for, 51 (rule 10).
 Degrees, honorary, 51; two at the same time, 52 (rule 12).

- Degrees, 51; business administration, 71; education, 77; engineering, 95; fine arts, 100; forestry, 111; journalism, 123; law, 33; liberal arts, 137; library, 146; mines, 148; pharmacy, 154; technical degrees, 120; science, 157; graduate, 119. Degrees conferred, 304.
- Departments of Instruction, 179; aeronautical engineering, 181; anatomy, 182; anthropology, 183; architecture, 184; astronomy, 185; bacteriology, 186; botany, 186; ceramics, 189; chemistry, and chemical engineering, 189; civil engineering, 193; classical languages, 196; composition, 213; economics and business administration, 199; education, 204; electrical engineering, 209; engineering shops, 211; English, 212; drama, 215; fisheries, 219; forestry, 219 general engineering, 222; general literature, 223; geology and geography, 224; German, 227; history, 230; home economics, 234; journalism, 236; law, 238; liberal arts, 241; library science, 241; literature, 216; mathematics, 243; mechanical engineering, 245; metallurgy, 252; military science, 247; mining, 250; music, 254; naval science, 262; nursing education, 263; oceanographic laboratories, 266; oriental studies, 267; painting, sculpture and design, 269; pharmacy, pharmaceutical chemistry, materia medica and food chemistry, 272; philosophy, 273; physical education and hygiene, 275; physics, 279; physiology, 297; political science, 281; psychology, 285; Romanic languages, 287; Scandinavian languages, 292; speech, 214; sociology, 293; zoology and physiology, 296.
- Design, courses, 269; curricula, 106.
- Diploma fee, 47.
- Dismissal, 59. (rule 23c,d,e).
- Doctor's degree, 117.
- Dormitories, University, 50.
- Drama, courses, 215.
- Economics, courses, 199; majors and minors, 63.
- Education, School of, 33, 74; requirements, 77, 81; admission, 76; degrees, 77; courses, 204; requirements for normal and life diplomas, 78, 80; standards of scholarship, 80; requirements for teachers, 78; major and minor requirements, 79.
- Electrical engineering, 94; curriculum, 98; courses, 209.
- Employment, student, 56.
- Endowment and support of the University, 30.
- Engineering, College of, 33, 92; degrees, 95; admission, 94; curricula, 96; courses, aeronautical engineering, 181; chemical engineering, 189; civil engineering, 193; electrical engineering, 209; engineering shops, 211; general engineering, 222; mechanical engineering, 245.
- Engineering Experiment Station, 31.
- English, courses, 212.
- Enrollment, summary of, 306.
- Entrance information, 36; deficiencies 37 (rule 2); examinations, 38.
- Equipment, 30.
- Excuses for absence, 58 (rule 22).
- Examination, entrance, 38; dates, 41; regular, 41; advanced credit by, 42; medical, 44.
- Examination Board, College Entrance, 40.
- Exemption from fees, 45.
- Expenses, board and room, 50; Health Service, 51; non-resident tuition, 45; resident tuition, 45; special fees and deposits, 46; summer quarter fees, 46.
- Extension Service, 43, 302; fees, 302; home study, 302.
- Extra and normal work, 44 (rules 3-8).
- Faculty, alphabetical list, 12.
- Fees, 47; refunds of, 50; payment of, 50; resident, 45; non-resident, 45; exemption, 45.
- Fellowships, Agnes Healy Anderson, 53; Bon Marche Industrial, 53; Columbia University, 53; Arthur A. Denny, 52; Loretta Denny, 52; Du Pont, 53; Mars, 53; National Research, 52; Research, 53; Standard Brands, 53; University Honorary, 52; University Teaching, 53.
- Financial delinquency, 50.
- Fine Arts, College of, 33, 100; admission, 100; special requirements for architecture, 100; for music, 100; curricula, 101; degrees, 100; courses in architecture, 184; painting and design, 269; music, 254; sculpture, 269.
- Fisheries, courses, 219; curriculum, 161.

- Foreign students, 40.
 Forestry, College of, 33, 110; admission, 111; degrees, 111; curricula, 112; courses, 219.
 Four quarter system, 35.
 French (Romanic Languages), 287.
 Gatzert Foundation, 31.
 General literature, courses, 223.
 Geology, courses, 224; curriculum, 161.
 Germanic Languages and Literature, 227.
 Government of the University, 30.
 Grade Book fee, 47.
 Grade points, 58.
 Grades, 37, 59; recommending, 37; required, 37.
 Graduate Fellowships, 52; Agnes Healy Anderson, 53; Bon Marche Industrial, 53; Columbia University, 53; Arthur A. Denny, 52; Loretta Denny, 52; Du Pont, 53; Mars, 53; National Research, 52; Research, 53; University Honorary, 52; Standard brands, 53; University Teaching, 53.
 Graduate Medical Lectures, 303.
 Graduate Nurses' Institute, 303.
 Graduate School, 34, 115; admission, 116; courses, see Departments of Instruction; 179; degrees, 117.
 Graduation, candidates for, 51 (rule 10); requirements for, 52 (rule 11).
 Graduation fee, 47.
 Greek (Classical Languages), 196.
 Grounds, 30.
 Health Service, University, 51; fee, 51.
 Henry, Horace C., Gallery of Fine Arts, 31.
 History, department of, 230; of University, 30.
 Home Economics, courses, 234; curricula, 86.
 Home study, 302.
 Hygiene (Physical Education), 275.
 Hyphens, course numbers connected by, 180.
 Incidental fee, 46.
 Incomplete, definition of, 59.
 Infirmary, University, 51.
 Intelligence test, 44.
 Italian (Romanic Languages), 290.
 Jaggard Prize, 55.
 Journalism, School of, 33, 121; admission, 122; curriculum, 124; courses, 236.
 Judge Alfred Battle Prize, 55.
 Laboratories, 31.
 Late registration, 43; fee, 44, 47.
 Latin (Classical Languages), 197.
 Law, School of, 33, 39, 139; admission, 39, 129; degrees and requirements, 130; courses, 238.
 Law and science course (combined), 130; law and liberal arts, 130.
 Leave of absence, 58 (rule 22).
 Lehn and Fink Medal, 55.
 Liberal Arts, College of, 33, 133; admission, 133; curricula, 138; degrees, 137; courses, see Departments of Instruction.
 Liberal Arts, courses, 241; combined with library, education, law, journalism, 138-144.
 Library, facilities, 72; law library, 128; journalism library, 30; fee, 46.
 Library School, 34, 145; admission, 145; curricula, 147; courses, 241.
 Library privileges, 54 (rules 15c).
 Library work with children, courses in, 241; requirements, 147.
 Life diplomas, 80.
 Literature courses, 216.
 Loan funds, 56; library, 145.
 Locker fee, 47.
 Low scholarship report, 58.
 Lower division, requirements of, 34.
 Map of the University Grounds, 3.
 Mars fellowship, 53.
 Master's degree, 119.
 Mathematics, courses, 243; curriculum 162.
 Mechanical engineering, 94; curriculum, 99; courses 245.
 Medical examinations, 44.
 Medical Lectures, 303.
 Memorial Library (Frederick Churchill), 121.
 Men's Personnel Office, 56.
 Mentors, 73.
 Metallurgy, 250.
 Military and Naval Uniforms, 47.
 Military science, rules on, 57; prizes for, 55; courses, 247; curriculum, 163.
 Military Science Prize, 55.
 Mine Safety Station, 31, 149.
 Mines, College of, 34, 148; admission, 150; curricula, 150; courses, 250.
 Mining Institute, 149.
 Mining and metallurgical fellowships, 53.
 Museum, 30.
 Music, courses, 254; curricula, 101.
 Naval aviation ground school, 263.
 Naval R.O.T.C. requirements, 37.

- Naval Science, rules on, 57; courses, 262; curriculum, 163.
 Non-resident tuition fee, 45.
 Normal diplomas, 78.
 Normal school graduates, admission of, 39; education requirements for, 39.
 Normal and extra work, 44 (rules 3-8).
 Northwest Experiment Station, Bureau of Mines, 31, 149.
 Nursing education, courses, 363; curricula, 171; extension course, 303.
 Nurse's fee, 46.
 Oceanographic Laboratories, 164, 301; fee, 46, 302; curriculum, 164; courses, 266.
 Officers of Administration, 11.
 Omicron Nu Prize, 55.
 Organization of the University, 33.
 Organization of the student body, 72.
 Oriental Studies, 267.
 Outside work, 44 (rule 7).
 Painting, Sculpture and Design, courses, 269; curricula, 106.
 Pharmacy in Washington, requirements for registration, 152.
 Pharmacy, College of, 34, 152; admission, 154; curricula, 154; degrees, 154; courses, 272.
 Philo Sherman Bennett Prize, 55.
 Philosophy, courses, 273.
 Physical Education and Hygiene, 57; courses for men, 275; courses for women, 276; curricula, 175.
 Physical examinations, 44.
 Physics, courses 279; curriculum, 166.
 Physiology, 297.
 Political Science, 281.
 Prizes, 55.
 Pre-medical curricula, 177.
 President's Medal, 55.
 Probation, 59.
 Psychology, courses, 285.
 Public Health Nursing, curriculum leading to, 173.
 Public speaking and debate (see speech), 214.
 Publications, University (Cover); student, 121.
 Registration, 43.
 Regulations for withdrawals, 58.
 Reinstatement, of dismissed students, 59.
 Requirements, for bachelor's degree, 51 (rules 9-14); entrance, 36; scholarship, 37.
 Resident tuition fee, 45.
 Romanic Languages, 90, 287.
 Rules and regulations, on absence, leave of, 58; activities, students, 56; athletics for women, 57; auditors, 42; change of grade, 59; completion of courses, 58; degrees, application for, 51; degrees, two at the same time, 52; eligibility, 60; examinations, 44; housing 50; miscellaneous, 60; residence defined, 45; scholarship standing, 58; senior year, work of, 51; senior scholars, 54; theses, 52; withdrawals, 58; work unsatisfactory, 59.
 Ruth Nettelton Award, 55.
 Saturday classes, 76.
 Scandinavian, 292.
 Scholarship requirements, 37; standing, 58.
 Scholarships, Beecher Kiefer Memorial, 54; Rhodes, 53; Gamma Phi Beta, 54; Graduate, 53; Isabella Austin, 54; Mu Phi Epsilon, 54; P.E.O., 54; Paul Karshner Memorial, 54; A. F. Venino, 54; Fontainebleau, 54; William Mackay, 54;
 School, definition of, 33.
 School music piano courses, 258.
 Schools, secondary, 38.
 Science, College of, 157; admission, 157; curricula, 157; degrees, 157; courses (see Departments of Instruction).
 Science and law course combined, 167.
 Science and library science combined, 167.
 Science, general curriculum, 157.
 Sculpture, 269.
 Senior scholars, 54.
 Sociology, 293.
 Spanish (Romanic Languages), 290.
 Special Examination Fee, 47.
 Special students, 41.
 Speech, courses, 84, 214.
 Standing, special student, 41; advanced undergraduate, 38; graduate, 40.
 Student fee (see Expenses), 46.
 Student loan funds, 56.
 Student help, 56.
 Student publications, 121.
 Student welfare, 56.
 Summary of degrees, 304.
 Summary of enrollment, 306.
 Summer quarter, 299; registration, 43; admission, 299; fees, 46.
 System of grades, 59.
 Theses, 52, (rule 14), 118; fee 115.

- Transcript fee, 47.
- Transfer students, 134.
- Tuition (see Expenses), 45.
- Unit, definition of, 34.
- University Commons, 50.
- U. S. Bureau of Mines Northwest Experiment Station, 31, 149.
- Upper division, requirements of, 135.
- Vocational guidance, 56.
- Warned list, 58.
- Washington Mutual Savings Bank Prizes, 55.
- Work, unsatisfactory, 58 (rule 23); extra, 44 (rules 3-8).
- Withdrawal, 58.
- Zoology, courses, 296; laboratory, 44.