

UNIVERSITY OF WASHINGTON



CATALOGUE NUMBER

For 1931-1932 Sessions

UNIVERSITY OF WASHINGTON



SEATTLE, WASHINGTON

June, 1931

Seattle
University of Washington Press
1931

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 at any time.

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THE UNIVERSITY CALENDAR 1931-1932

AUTUMN QUARTER

Registration dates....May 11 to June 5; June 29 to August 27, Sept. 24 to 28, inclusive.
 Latest day for securing reserved sections by payment of fees....Monday, September 14.
 Latest day for registration without penalty.....Monday, September 28.
 Freshman Week.....Begins Tuesday, Sept. 29, 8 a.m.; ends Wednesday, Sept. 30, 9 p.m.
 Instruction begins.....Thursday, October 1, 8 a.m.
 President's Annual Address.....Friday, October 2, 11 a.m.
 Regular meeting of Faculty.....Tuesday, October 27, 4 p.m.
 Latest day for receiving W's without grade.....Wednesday, October 28, 4:30 p.m.
 Thanksgiving recess begins.....Wednesday, November 25, 6 p.m.
 Thanksgiving recess ends.....Monday, November 30, 8 a.m.
 Regular meeting of Faculty.....Tuesday, December 8, 4 p.m.
 Instruction ends.....Friday, December 18, 6 p.m.

WINTER QUARTER

Registration dates for students in residence.....November 2 to December 18.
 Registration dates for students not in residence.....November 2 to January 2.
 Latest day for securing reserved sections by payment of fees for students who
 preregister.....Tuesday, December 29.
 Latest day for registration without penalty.....Saturday, January 2, 12 m.
 Instruction begins.....Monday, January 4, 8 a.m.
 Regular meeting of Faculty.....Tuesday, January 26, 4 p.m.
 Latest day for receiving W's without grade.....Saturday, January 30, 12 m.
 Washington's birthday (holiday).....Monday, February 22.
 Regular meeting of Faculty.....Tuesday, March 8, 4 p.m.
 Instruction ends.....Friday, March 18, 6 p.m.

SPRING QUARTER

Registration dates for students in residence.....February 8 to March 18.
 Registration dates for students not in residence.....February 8 to March 26.
 Latest day for securing reserved sections by payment of fees for students who
 preregister.....Wednesday, March 23.
 Latest day for registration without penalty.....Saturday, March 26, 12 m.
 Instruction begins.....Monday, March 28, 8 a.m.
 Regular meeting of Faculty.....Tuesday, April 19, 4 p.m.
 Latest day for receiving W's without grade.....Saturday, April 23, 12 m.
 Campus Day.....Friday, April 22
 Memorial Day (holiday).....Monday, May 30.
 Regular meeting of Faculty.....Tuesday, May 31, 4 p.m.
 Instruction ends.....Friday, June 10, 6 p.m.
 Class Day and Alumni Day.....Saturday, June 11.
 Baccalaureate Sunday.....Sunday, June 12.
 Commencement.....Monday, June 13.

SUMMER QUARTER

1932

Registration dates.....April 25 to June 11, 12 m.
 Latest day for securing reserved sections by payment of fees for students who
 preregister (first term).....Saturday, June 11, 12 m.
 Special registration day.....Tuesday, June 14.
 Instruction begins.....Wednesday, June 15, 8 a.m.
 Latest day for receiving W's without grade (first term)....Tuesday, June 28, 4:30 p.m.
 Independence Day (holiday).....Monday, July 4.
 Latest day for receiving W's without grade (full quarter)..Tuesday, July 12, 4:30 p.m.
 First term ends.....Friday, July 22, 6 p.m.
 Latest day for securing reserved sections by payment of fees
 (second term).....Friday, July 22.
 Second term begins.....Monday, July 25, 8 a.m.
 Latest day for receiving W's without grade (second term)....Saturday, August 6, 12 m.
 Instruction ends.....Thursday, August 25, 6 p.m.

BOARD OF REGENTS

PAUL H. JOHNS, President.....	Tacoma
	Term ends March, 1932
JAMES V. PATERSON, Vice-President.....	Seattle
	Term ends March, 1934
J. D. FARRELL.....	Seattle
	Term ends March, 1935
ROSCOE A. BALCH.....	Spokane
	Term ends March, 1933
J. M. PERRY.....	Yakima
	Term ends March, 1932

WILLIAM NEAL WINTER, Secretary to the Board

COMMITTEES OF THE BOARD OF REGENTS

Oceanographic Laboratories.....	_____, Perry, Paterson
Co-operation.....	Perry, _____, Paterson
Student Welfare.....	_____, Balch, Perry
Buildings and Grounds.....	_____, Farrell, Paterson
Finance.....	Johns, Farrell, Balch
Lands.....	Balch, Johns, _____
Metropolitan Lease.....	Farrell, _____, Johns

OFFICERS OF ADMINISTRATION

THE UNIVERSITY

MATTHEW LYLE SPENCER, Ph.D., LL.D.....	President of the University Education Hall
DAVID THOMSON, B.A.....	Vice-President Education Hall
FREDERICK MORGAN PADELFORD, Ph.D.....	Assistant Vice-President Education Hall
WILLIAM NEAL WINTER.....	Business Manager Education Hall
EDWIN BICKNELL STEVENS, M.A.....	Registrar Education Hall
HERBERT THOMAS CONDON, LL.B.....	Dean of Men Education Hall
WINNIFRED SUNDERLIN HAGGETT, M.A.....	Dean of Women Education Hall
WILLIAM R. WILSON, Ph.D.....	Director, Administrative Research Philosophy Hall

THE COLLEGES AND SCHOOLS

SHIRLEY J. COON, Ph.D.....	Dean of the College of Business Administration Commerce Hall
WILLIS LEMON UHL, Ph.D.....	Dean of the School of Education Education Hall
FREDERICK ELMER BOLTON, Ph.D.....	Dean Emeritus of the School of Education Education Hall
RICHARD GAINES TYLER, S.B. (C.E.).....	Dean of the College of Engineering Guggenheim Hall
WALTER F. ISAACS, B.S. (F.A.).....	Acting Dean of the College of Fine Arts Education Hall
HUGO WINKENWERDER, M.F.....	Dean of the College of Forestry Anderson Hall
FREDERICK MORGAN PADELFORD, Ph.D.....	Dean of the Graduate School Denny Hall
VERNON McKENZIE, M.A.....	Dean of the School of Journalism Commerce Hall
HAROLD SHEPHERD, J.D.....	Dean of the School of Law Commerce Hall
DUDLEY DAVID GRIFFITH, Ph.D.....	Dean of the College of Liberal Arts Denny Hall
RUTH WORDEN, B.A.....	Acting Dean of the Library School Library
MILNOR ROBERTS, B.A.....	Dean of the College of Mines Mines Laboratory
CHARLES WILLIS JOHNSON, Ph.C., Ph.D.....	Dean of the College of Pharmacy Bagley Hall
HENRY LANDES, M.A.....	Dean of the College of Science Johnson Hall

THE SUMMER QUARTER

HENRY ALFRED BURD, Ph.D.....	Director Education Hall
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THE EXTENSION SERVICE

HARRY EDWIN SMITH, Ph.D.....	Director Education Hall
------------------------------	----------------------------

THE UNIVERSITY FACULTY

Spencer, Matthew Lyle.....*President of the University*
Thomson, David*Vice-President*
Padelford, Frederick Morgan.....*Assistant Vice-President*
Stevens, Edwin Bicknell.....*Secretary to the Faculty*

The University faculty, consisting of deans, all teachers of professorial rank, lecturers, instructors, and associates, follows:

FACULTY IN THE ORDER OF ACADEMIC SENIORITY

For alphabetical list with academic histories, see page 15

COLLEGE DEANS, ADMINISTRATIVE DEANS, AND DIRECTORS

Landes, Henry	Griffith, Dudley David
Roberts, Milnor	Isaacs, Walter F.
Johnson, Charles Willis	Shepherd, Harold
Winkenwerder, Hugo	Coon, Shirley Jay
Bolton, Frederick Elmer (Emeritus)	Worden, Ruth
Henry, William E. (Emeritus)	Haggett, Winnifred Sunderlin
McKenzie, Vernon	Condon, Herbert T.
Uhl, Willis Lemon	Burd, Henry Alfred
Tyler, Richard G.	Smith, Harry Edwin

PROFESSORS

Meany, Edmond Stephen	Worcester, John Locke
Kincaid, Trevor	Preston, Howard Hall
Osborn, Frederick Arthur	Loew, Edgar Allen
Savery, William	Daniels, Joseph
Frein, Pierre Joseph	Kirsten, Friedrich Kurt
Frye, Theodore Christian	Cox, William E.
Moritz, Robert Edouard	Cory, Herbert Ellsworth
Magnusson, Carl Edward	Dakan, Carl Spencer
Lantz, Harvey	Wilson, George Samuel
Eastwood, Everett Owen	Harris, Charles William
Hall, David Connolly	Martin, Charles Emanuel
Gowen, Herbert Henry	Winger, Roy Martin
Richardson, Oliver Huntington (Emeritus)	Smith, Charles Wesley
Goodner, Ivan Wilbur	Carpenter, Allen Fuller
More, Charles Church	Cox, Edward Godfrey
Benson, Henry Kreitzer	Thomas, Harlan
Weinzirl, John	Sidey, Thomas Kay
Vickner, Edwin Johan	McMahon, Edward
Raitt, Effie Isabel	O'Bryan, Joseph Grattan
Smith, Stevenson	Winslow, Arthur Melvin
Bissett, Clark Prescott (Emeritus)	Tartar, Herman Vance
Benham, Allen Rogers	Nottelmann, Rudolph H.
Ayer, Leslie James	Matthews, Harry Thomas
Dehn, William Maurice	Rigg, George Burton
Woolston, Howard B.	Rosen, Moritz
Smith, George McPhail	Venino, Albert Franz
Gould, James Edward	Wood, Carl Paige
Weaver, Charles Edwin	Skinner, Macy Milmore
Umphrey, George Wallace	Lynn, Eldin V.
	Langenhan, Henry August

Guthrie, Edwin R.
 Wilson, Hewitt
 Orr, Frederick W.
 Patzer, Otto
 Grondal, Bror Leonard
 McMahon, Theresa Schmid
 Thompson, Thomas Gordon
 Bishop, Eugene A.
 McCormack, Harvey William
 Mecham, Frank Lawrence
 Taylor, Edward Ayres

Wilson, William R.
 May, Charles Culbertson
 Cole, Thomas R.
 Guberlet, John E.
 Hughes, Glenn
 Thompson, W. F.
 Barnes, Donald G.
 Harris, Joseph Pratt
 Corson, Willis R.
 Steiner, Jesse Frederick
 Jeffers, Dwight S.

ASSOCIATE PROFESSORS

Milliman, Loren Douglas
 Brakel, Henry Louis
 Goggio, Charles
 Jones, Robert William
 Denny, Grace Goldena
 Gross, Mary Emma
 Newenham, Frances Dickey
 Harrison, Joseph Barlow
 Jessup, John H.
 Gavett, G. Irving
 Eckelman, Ernest Otto
 Lucas, Henry S.
 Esper, Erwin A.
 Renner, George T.
 Stone, Edward N.
 Smith, E. Victor
 Dertsmore, Harvey
 Hotson, John W.
 Goodspeed, George E.
 Williams, Curtis T.
 de Vries, Louis P.
 Gregory, Homer E.
 Wilcox, Elgin Roscoe
 Corey, Clarence Raymond
 Helmlinge, Charles Louis

Shuck, Gordon Russell
 Schaller, Gilbert Simon
 Dvorak, August
 Goodrich, Forest Jackson
 Herrman, Arthur Phillip
 Gowen, Lancelot Edward
 Warner, Frank Melville
 Miller, Alfred Lawrence
 Moore, John Brooks
 Demmery, Joseph
 Draper, Edgar Marion
 Ballantine, John Perry
 Foster, Henry M.
 Hall, James K.
 Hayner, Norman S.
 McIntyre, Harry J.
 Cole, Kenneth Carey
 Mander, Linden A.
 Martin, Howard Hanna
 Rowntree, Jennie Irene
 Utterback, Clinton L.
 Wilson, Francis G.
 Mills, Russell
 Soule, Elizabeth
 Lynch, James E.

ASSISTANT PROFESSORS

Neikirk, Lewis Irving
 Collier, Ira Leonard
 Van Ogle, Louise
 Bliss, Addie Jeanette
 Hoffstadt, Rachel Emilie
 Miller, Robert Cunningham
 Beuschlein, Warren Lord
 Pratt, Dudley
 Powell, Sargent
 McMinn, Bryan Towne
 Edmonds, Robert Harold G.
 Hoard, George Lisle
 Smith, George Sherman
 Lawrence, Charles Wilson
 Creer, Leland Hargrave

Worden, Ruth
 Dresslar, Martha E.
 Miller, John W.
 Alexander, J. L.
 Hill, Raymond
 Read, William A.
 Payne, Blanche
 Rivers, Elizabeth
 Hatch, Melville H.
 McFarlan, Lee A.
 McKay, George
 Benson, Edna
 Luce, Dean
 Norris, Earl R.
 Groth, J. H.

Chessex, Jean C. W.
 Rahskopf, Horace
 de Vries, Mary Aid
 Mullemeister, Hermance
 Foote, Hope Lucile
 McGownd, Matilda Jane
 Hawthorn, George E.
 Van Horn, Robert B.
 Winther, Sophus Keith
 Garcia-Prada, Carlos
 Farquharson, Frederick Burt
 Patterson, Ambrose
 Rhodes, Helen Neilson
 Cramlet, Clyde Myron
 Alfonso, Marie
 Crim, Lemuel P.
 de Rohan, Frederick J.
 Milner, Fred C.
 Priest, Harold R.
 Young, Courtney P.
 Cooper, James G., Jr.
 Kelley, Frank H.
 Whittlesey, Walter Bell
 Quainton, Cecil Eden
 Lindblom, Roy Eric
 Eastman, Austin V.
 Christian, Byron
 Dahlin, Ebba
 Jerbert, Arthur Rudolph
 Farwell, Raymond Forrest
 Frazer, William D.
 Henderson, Joseph E.

Munro, Kathleen
 Brown, Stephen Darden
 Conway, John A.
 Corbally, John E.
 Eby, Edwin H.
 Fuller, Richard E.
 Gundlach, Ralph
 Hall, R. A.
 Miller, Charles J.
 Powers, Francis F.
 Rader, Melvin M.
 Seeman, Albert L.
 Tortorich, D. J.
 Wilkinson, Madge
 Wilson, Florence Bergh
 Wiltamuth, Ralph
 Belshaw, Roland
 Cheadle, J. Kennard
 Nelson, Everett
 James, Burton W.
 James, Florence B.
 Smith, Harriett
 Earle, Frances M.
 Ganzert, Frederic William
 Leahy, Kathleen
 Loughridge, Donald H.
 McGrew, J. Fred
 Nielson, Henry S.
 Pollard, Robert T.
 Richards, John W.
 Ritchie, John III
 Tiemroth, Harold H.

LECTURERS

McConahey, James
 Davis, Pearce Crane
 Draper, Oscar Eldridge
 Sperlin, Ottis Bedney
 Truax, Arthur
 Beardsley, Arthur S.

Meisnest, Frederick
 Wade, Arthur E.
 Alden, Charles
 Hauan, Merlin
 Balle, Alfred L.
 Hall, John F.

INSTRUCTORS

Kirchner, George
 Chittenden, Hiram Martin, Jr.
 Dobie, Edith
 Sivertz, Victorian
 Markey, Helen Buck
 Smith, Frederick Charnley
 Hamilton, Malcolm
 Littell, Roland B.
 Dunlap, Clarence E.
 Van de Walker, Frank C.
 Windesheim, Karl A.
 Wilson, William C. E.

Calhoun, Charles E.
 Bird, Winfred
 Simpson, Lurline
 Pearce, Richard J.
 Schultz, Leonard P.
 Terrell, Margaret E.
 Moritz, Harold K.
 Rowlands, T. McKee
 Newbury, Kirsten Larsson
 Jacobs, Melville
 Byers, Maryhelen
 King, Joseph C.

Robinson, Rex J.
 Wintermute, Edwin H.
 Penington, Ruth
 Cornu, Donald
 Cain, Russell
 Mackenzie, Donald H.
 Gunther, Erna
 McCreery, Ruth Allen
 Welke, Walter
 Kenworthy, Ray W.
 Brown, Robert Quixote
 Eastman, Frederick S.
 Sergev, Sergius I.
 Tymstra, Sybren Ruurd
 Andrews, Siri
 Wilson, Clotilde

Evans, Claire
 O'Keefe, Jessie
 Oliver, Louise Benton
 Terry, Miriam
 Torney, John
 Woodcock, Edith
 Harsch, Alfred E.
 Rhodes, Fred Harold, Jr.
 Higgs, Paul
 Kunde, Norman
 Demetracapoulou, Dorothea
 Hall, Helen M.
 Kobe, Kenneth A.
 Olcott, Virginia
 Reed, Florence

ASSOCIATES

Worman, Eugenie
 Radford, Ethel Sanderson
 Kerrigan, Sylvia Finlay
 Vickner, Bertha Almen
 Edmundson, Clarence
 Hamilton, Rachel Elizabeth
 Graves, Dorsett
 Lawson, Jane Sorrie
 Bogardus, Alice Coleman
 Putnam, Marguerite
 Hall, Amy Violet
 Wesner, Elenora
 Brown, Lois Eula
 Wagenknecht, Edward C.
 Hamack, Frank Hartmond
 Rulifson, Leone Helmich
 Terzieff, Otilie
 Davis, Erma Nelson
 Ballaine, Genevieve Knight
 Ankele, Felicie C.
 Ulbrickson, Alvin
 Goodsell, Julia
 Nix, Martha
 Glover, Harriet F.
 Hermans, Thomas G.
 Coventry, Edwin J.
 Maydahl, Bergete
 Davidson, Lucy W.

Butterworth, Joseph
 Haas, Harold Milburn
 Wheeler, Bayard O.
 Walters, Margaret
 Martin, Robert R.
 Kahin, Helen
 Phelan, James
 Lamont, D. J.
 Collins, Edward
 Welch, Ralph
 Wilcox, Chester
 Phillips, Herbert Joseph
 Reed, Florence
 Atkinson, Dorothy
 Childs, Herbert
 Okerlund, Gerda
 Pellegrini, Angelo
 Zillman, Lawrence
 Puymbroeck, Lea
 Woerner, William
 Roscoe, Harriet
 Carlson, John A.
 Geoghegan, J. Herbert
 Haller, Mary Elizabeth
 Herington, George B.
 Meyer, Dorothy
 Schertel, Max
 Seeley, Harriet

ASSISTANTS FOR 1930-31

Anthropology

Walters, Velpha, B.A.

Bacteriology

Borden, Alice, B.S.
 Gamble, Genevieve, B.S.
 Hirschman, Joy, B.S.
 Van Leuven, Ray, B.S.

Business Administration

Capen, Ellery, B.B.A.
 Happ, Howell, B.B.A.
 Lamont, Ralph H., B.B.A.
 Maxwell, R. A., B.A.

English

Anderson, Victoria, B.A., M.A.
 Beal, Maud L., B.A., M.A.
 Burgess, Jennie P., B.A., M.A.
 Kuhn, Bertha M., B.A., M.A.
 Mark, Sara Norris, B.A., M.A.
 Stirling, Brents, B.A., LL.B.
 Weinstein, Sophie Rosenstein,
 B.A., M.A.
 Windhusen, Anne, B.A.

History

Jensen, Merrill, B.A.

Home Economics

Crum, Jeannette, B.S.

Mathematics

Carpenter, Philip N., B.S.
 Copenhagen, Helen M., B.S.
 Jensen, Myra, B.A.
 Knox, Kenneth E., B.A.
 Muyskens, Henry, B.S., M.S.

Music

Anderson, Iris Canfield, B.M.
 Hinman, Isla, M.A.

Oriental Studies

Cutts, Elmer, B.A.

Physical Education for Women

Shapley, Elizabeth, B.S.

Romanic Languages

Giunttoni, Julius, B.A., M.A.
 Vargas, Anibal, B.A., M.A.

Sociology

Geoghegan, Herbert, B.A., M.A.

TEACHING FELLOWS FOR 1930-31

Anatomy

Kingston, George R., B.S.

Botany

Harrison, Charles H., B.S.
 Lamphere, Will M., B.S.
 Schenk, Elizabeth, B.S.

Business Administration

Johnston, Betty, B.A.
 Refling, Norman, B.A.
 Tuttle, Valgene, B.A.
 Wardall, Cedric, B.B.A.

Chemistry

Anderson, Lucile, B.S., M.S.
 Baldwin, Maynard, B.S.
 Ballard, Donald A., B.S.
 Barnes, Clifford A., B.S.
 Bremner, Ray W., B.S.
 Christensen, Bert E., B.S.
 Churchward, Ruth Lawless, B.S.
 Conrad, Frank H., B.S.
 Garman, Ralph, B.S.
 Hicks, J. F. G., Jr., B.S.
 Houlton, Harold G., B.S.
 McClain, Herbert Kenneth, B.S.
 Peterson, Marjorie Whipple, M.S.
 Rice, Maude Ruth, B.S., M.S.
 Schimke, Harold S., B.S.
 Seymour, Keith M., B.S., M.S.

Shinn, Helen R., B.A.

Taylor, Jean Howard, B.S.

Thomas, Bertram D., B.S.

Todd, Seldon P., B.S., M.S.

Wilson, Thomas L., B.S.

Wirth, Henry E., B.S.

Education

Van Tilborg, Paul W., B.A.

English

Blomquist, Roberta, B.A.

Burns, Harry, B.A.

Crockett, Arline, B.A., M.A.

Hewitt, Margaret C., B.A.

Koon, Maxine, B.A.

MacLean, James B., B.A.

Person, Henry A., B.A.

Ranson, Herbert R., B.A., M.A.

Savage, George M., Jr., B.A.,
 M.A.

Soper, Paul, B.A.

St. Clair, Laura, M.A.

Strother, Charles R., B.A.

Forestry

Ramsey, Guy R., B.S.F.

Geology and Geography

Bravinder, Kenneth M., B.A.

Chappell, Walter M., B.A.

Coombs, Howard, B.S.

Mathematics

Carlson, John A., B.S.
Haller, Mary E., B.A.
Stucky, Phillip P., B.S.

Mines

Page, George A., B.S.
Taylor, James A., B.S.
Wilcox, H. G., B.S.
Zane, Rudolf, B.S.

Nursing Education

Olcott, Virginia, B.S.

Pharmacy

Cox, Cliveden, Ph. C., B.S., M.S.
Johnson, Carl H., B.S.
Jones, Ivor, B.S.
Jorgensen, Paul S., B.S., M.S.
Kelly, Edgar A., Ph. C., B.S.,
M.S.

Poole, Abigail B., B.S., M.S.

Physical Education for Women

Wright, Monica, B.S.

Physics

Badgley, Ralph E., B.A.
Boyle, J. W., B.S.
Dahlstrom, R. K., B.S.
Gideon, Edith, B.S.
McKay, John, B.S.
Van Arkel, G. Harvey, B.S.

Williams, Allan, B.A.

Young, R. W., B.S.

Political Science

Barthell, Russell, M.A.
Clyde, Winona, M.A.
Holloway, William V., M.A.
White, Ivan B., M.A.

Psychology

Chopson, E. W., B.A.
Harrington, G. B., B.A.

Romantic Languages

Aiken, Mary Louise, B.A.
Beatie, Alfred W., B.S.
Becker, George, M.A.
Guley, Hazel, B.A.
Hiersch, Wilhelmina, B.A.
Moe, Myrtle, M.A.
Povey, Kathleen, B.A.
Shields, Agnes, B.A.
Stair, Ninabelle, B.A.
Wetherell, Russell, B.A.

Zoology

Johnson, Martin, B.S.
Jones, Mildred, B.S.
Lloyd, Lowell, B.S.
Scheffer, Victor, B.S.
Thompson, Katherine, B.S.

ALPHABETICAL LIST OF THE UNIVERSITY FACULTY 1931-32

- Spencer, Matthew Lyle.....*President of the University*
B.A., Kentucky Wesleyan, 1903; M.A., 1904, Northwestern, 1905; Ph.D., Chicago, 1910; LL.D., Northwestern, 1928.
-
- Adams, Henrietta....*Assistant Professor of Nursing Education and Director of Nursing Education at Harborview Hospital*
B.S., Washington, 1926.
- Alden, Charles.....*Lecturer in Architecture*
B.S., Massachusetts Institute of Technology, 1890.
- Alexander, James Lindsey.....*Assistant Professor of Forestry*
B.Sc.F., Toronto, 1921.
- Alfonso, Marie.....*Assistant Professor of Library Science*
B.A., Nebraska, 1913; B.L.S., Washington, 1921.
- Andrews, Siri.....*Instructor in Library Science*
B.S. (L.S.), Washington, 1930.
- Ankele, Felicie Charlotte.....*Associate in Germanic Languages*
B.A., Washington, 1925; M.A., 1926.
- Ayer, Leslie James.....*Professor of Law*
B.S., Upper Iowa, 1899; J.D., Chicago, 1906.
- Ballaine, Genevieve Knight.....*Associate in Latin*
B.A., Olivet College, 1897.
- Ballantine, John Perry.....*Associate Professor of Mathematics*
B.A., Harvard, 1918; Ph.D., Chicago, 1923.
- Ballard, Arthur C.....*Research Associate in Anthropology*
B.A., Washington, 1899.
- Balle, Alfred L.....*Lecturer in Bacteriology*
B.S., Washington, 1924; M.D., Oregon Medical School, 1928.
- Barnes, Donald G.....*Professor of History*
B.A., Nebraska, 1915; M.A., Harvard, 1917; Ph.D., 1924.
- Beardsley, Arthur Sydney.....*Law Librarian; Lecturer in Law*
LL.B., Washington, 1918; B.S., 1924; M.A., 1925; Ph.D., 1928.
- Belshaw, Roland.....*Assistant Professor of Physical Education for Men*
B.A., Oregon, 1927; M.A., Columbia, 1930.
- Benham, Allen Rogers.....*Professor of English*
B.A., Minnesota, 1900; M.A., 1901; Ph.D., Yale, 1905.
- Benson, Edna.....*Assistant Professor of Design*
B.A., Iowa, 1909; Diploma, Chicago Academy of Fine Arts, 1915; M.A., Columbia, 1923.
- ¹Benson, Henry Kreitzer.....*Professor of Chemical Engineering*
B.A., Franklin and Marshall, 1899; M.A., 1902; D.Sci., 1926; Ph.D., Columbia, 1907.
- Beuschlein, Warren Lord.....*Assistant Professor of Chemical Engineering*
B.S. (Ch.E.), California Institute of Technology, 1920; M.S. (Ch.E.), Washington, 1925.
- Bird, Winfred Wylam.....*Instructor in English*
B.A., Lawrence College, 1926; M.A., Washington, 1928.
- Bishop, Eugene A.....*Professor of Education*
B.A. York College, 1911; Ph.D., Columbia, 1927.
- Bissett, Clark Prescott.....*Professor Emeritus of Law*
B.A., Hobart College, 1896; LL.D., Jesuit College, 1898; LL.D., Minnesota, 1909; Lit.D., Lincoln Memorial University, 1926; LL.D., Knox, 1926.

¹ On leave, 1931-32.

- Bliss, Addie Jeanette.....*Assistant Professor of Home Economics*
B.A., Washington, 1906; M.A., Columbia, 1917.
- Bogardus, Alice Coleman.....*Associate in Music*
B.L., Mills, 1913.
- Bolton, Frederick Elmer, *Professor of Education; Dean Emeritus of the School of Education*
B.S., Wisconsin, 1893; M.S., 1896; Ph.D., Clark, 1898.
- Bostwick, Irene Neilson.....*Instructor in Music*
B.M., Washington, 1922.
- Brakel, Henry Louis.....*Associate Professor of Engineering Physics*
B.A., Olivet, 1902; M.A., Washington, 1905; Ph.D., Cornell, 1912.
- Brown, Lois Eula.....*Associate in English*
B.A., Washington, 1920; M.A., 1924.
- Brown, Robert Quixote.....*Instructor in General Engineering*
B.S. (E.E.), Washington, 1916.
- Brown, Stephen Darden....*Assistant Professor of Business Administration*
LL.B., Washington, 1925.
- Burd, Henry Alfred, *Professor of Business Administration; Director of the Summer Quarter*
B.S., Illinois Wesleyan, 1910; M.A., Illinois, 1911; Ph.D., 1915.
- Butterbaugh, Grant I.....*Assistant Professor of Business Administration*
B.A., Wisconsin, 1916; M.B.A., Washington, 1923.
- Butterworth, Joseph.....*Associate in English*
B.A., Brown, 1919; M.A., 1921.
- Byers, Maryhelen.....*Instructor in Painting*
B.F.A., Washington, 1923; M.A., Columbia, 1924.
- Cain, Russell.....*Instructor in Pharmacy*
Ph.C., Washington, 1924; B.S., 1925
- Calhoun, Charles E.....*Instructor in Business Administration*
B.A., Washington, 1925; M.A., 1928.
- Carlson, John A.,.....*Associate in Mathematics*
B.S., Washington, 1925; M.S., 1931.
- Carpenter, Allen Fuller.....*Professor of Mathematics*
B.A., Hastings, 1901; M.A., Nebraska, 1909; Ph.D., Chicago, 1915.
- Cheadle, J. Kennard.....*Assistant Professor of Law*
Ph.B., Chicago, 1927; J.D., 1929; LL.M., Harvard, 1930.
- Chessex, Jean Charles William..*Assistant Professor of Romanic Languages*
B.A., Lausanne, 1923; M.A., 1925.
- Childs, Herbert Ellsworth.....*Associate in English*
B.A., Oberlin, 1926.
- Chittenden, Hiram Martin.....*Instructor in Civil Engineering*
B.S. (C.E.), Washington, 1920.
- Christian, Byron Hunter.....*Assistant Professor of Journalism*
B.A., Washington, 1921; M.A., 1929.
- Cole, Kenneth Cary.....*Associate Professor of Political Science*
B.Lit., St. John's College, Oxford, 1924; Ph. D., Harvard, 1930.
- Cole, Thomas Raymond.....*Professor of Education*
M.A., Upper Iowa, 1902; Ph.B., DePauw, 1904.

- Collier, Ira Leonard.....*Assistant Professor of Civil Engineering*
B.S. (C.E.), Washington, 1913; C.E., 1917.
- Conrad, Frank H.....*Associate in Chemical Engineering*
B.S., Washington, 1923.
- Conway, John Ashby.....*Assistant Professor of Dramatic Art*
B.A., Carnegie Institute of Technology, 1927.
- Coon, Shirley Jay.....*Professor of Economics and Business Administration;*
Dean of the College of Business Administration
B.A., Beloit College, 1909; M.A., Ohio State, 1915; Ph.D., Chicago, 1926.
- Cooper, James G., Jr., Captain, Infantry.....*Assistant Professor of Military*
Science and Tactics
Washington.
- Corbally, John E.....*Assistant Professor of Education*
B.A., Whitworth, 1918; M.A., Washington, 1925; Ph.D., 1929.
- Corey, Clarence Raymond, *Associate Professor of Mining Engineering and*
Metallurgy
E.M., Montana State School of Mines, 1905; M.A., Columbia, 1915.
- Cornu, Donald.....*Instructor in English*
LL.B., Washington, 1922; M.A., 1926; Ph.D., 1928.
- Cory, Herbert Ellsworth.....*Professor of Liberal Arts*
B.A., Brown, 1906; Ph.D., Harvard, 1910.
- Corson, Willis R.....*Physician in Charge of Medical Education at*
Harborview Hospital
M.D., Cooper Medical, 1905.
- Coventry, Edwin J.....*Associate in Sociology*
B.A., Washington, 1924.
- Cox, Edward Godfrey.....*Professor of English*
B.A., Wabash, 1899; M.A., Cornell, 1901; Ph.D., 1906.
- Cox, William Edward.....*Professor of Economics*
B.A., Texas, 1909; M.A., 1910.
- Cramlet, Clyde Myron.....*Assistant Professor of Mathematics*
B.A., Walla Walla College, 1915; M.S., Washington, 1920; Ph.D., 1926.
- Creer, Leland Hargrave.....*Assistant Professor of History*
B.A., Utah, 1916; M.A., 1920; Ph.D., California, 1926.
- Crim, Lemuel P., Captain, Ordnance, *Assistant Professor of Military Science*
and Tactics
B.S., Washington, 1908.
- Dahlin, Ebba.....*Assistant Professor of History*
B.A., Washington, 1919; M.A., 1922; Ph.D., Stanford, 1927.
- Dakan, Carl Spencer.....*Professor of Business Administration*
B.S., Missouri, 1909.
- Daniels, Joseph.....*Professor of Mining Engineering and Metallurgy*
S.B., Massachusetts Institute of Technology, 1905; M.S., Lehigh, 1908.
- Davidson, Lucy W.....*Assistant Professor of Physical Education for Women*
B.A., Wisconsin, 1919; M.A., Columbia, 1923.
- Davis, Erma Nelson.....*Associate in History*
B.A., University of Denver, 1918; M.A., Utah, 1924.
- Davis, Pearce Crane.....*Lecturer in Accounting*
C.P.A., 1914.

- Dehn, William Maurice.....*Professor of Organic Chemistry*
B.A., Hope, 1893; M.A., 1896; Ph.D., Illinois, 1903.
- Demetracapoulou, Dorothea.....*Instructor in Anthropology*
B.A., Vassar, 1927; Ph.D., California, 1931.
- Demmery, Joseph.....*Associate Professor of Business Administration*
Ph.B., Chicago, 1920; M.A., 1924.
- Denny, Grace Goldena.....*Associate Professor of Home Economics*
B.A., Nebraska, 1907; M.A., Columbia, 1919.
- Densmore, Harvey Bruce.....*Associate Professor of Greek*
B.A., Oxford, 1907.
- deRohan, Frederick J., Major, Infantry.....*Assistant Professor of Military Science and Tactics*
- de Vries, Louis Peter.....*Associate Professor of French*
M.A., Wisconsin, 1911; Ph.D., 1913.
- de Vries, Mary Aid...*Assistant Professor of Physical Education for Women*
B.A., Wisconsin, 1920.
- Dobie, Edith.....*Instructor in History*
B.A., Syracuse, 1914; M.A., Chicago, 1922; Ph.D., Stanford, 1925.
- Draper, Edgar Marion.....*Associate Professor of Education*
B.A., Washington, 1916; M.A., 1925; Ph.D., 1927.
- Draper, Oscar Eldridge.....*Lecturer in Business Administration*
M.Acct., Vories Business College.
- Dresslar, Martha Estella.....*Assistant Professor of Home Economics*
B.A., Southern California, 1913; B.S., Washington, 1917; M.S., Columbia, 1918.
- Dunlap, Clarence E.....*Instructor in Naval Science and Tactics*
- Dvorak, August.....*Associate Professor of Education*
B.A., Minnesota, 1920; Ph.D., 1923.
- Earle, Frances M.....*Acting Assistant Professor of Geography*
B.A., Winthrop College, 1919; M.S., Columbia, 1926; Ph.D., George Washington, 1929.
- Eastman, Austin Vitruvius....*Assistant Professor of Electrical Engineering*
B.S. (E.E.), Washington, 1922; M.S., 1929.
- Eastman, Fred S.....*Instructor in Aeronautical Engineering*
B.S. (E.E.), Washington, 1925; M.S., Massachusetts Institute of Technology, 1929.
- Eastwood, Everett Owen, *Professor of Mechanical Engineering; Consulting Engineer; Director of Guggenheim Laboratories*
C.E., Virginia, 1896; B.A., 1897; M.A., 1899; S.B., Massachusetts Institute of Technology, 1902.
- Eby, Edwin Harold.....*Assistant Professor of English*
Ph.B., Chicago, 1923; Ph.D., Washington, 1927.
- Eckelman, Ernest Otto.....*Associate Professor of Germanic Languages*
B.A., Northwestern (Watertown, Wis.), 1897; B.L., Wisconsin, 1898; Ph.D., Heidelberg, 1906.
- Edmonds, Robert Harold Gray.....*Assistant Professor of Mechanical Engineering*
B.S., Whitman, 1915; B.S. (M.E.), Washington, 1922; M.S. (M.E.), 1926; M.E., 1931.
- Edmundson, Clarence.....*Associate in Physical Education for Men*
B.S., Idaho, 1910.

- Esper, Erwin Allen.....*Associate Professor of Psychology*
B.A., Ohio State, 1917; M.A., 1920; Ph.D., 1923.
- Evans, Claire.....*Instructor in Pharmacy*
Ph.C., Washington, 1926; B.S. in Pharmacy, 1927; M.S. in Pharmacy, 1928.
- Farquharson, Frederick Burt.....*Assistant Professor of Civil Engineering*
B.S. (M.E.), Washington, 1923; M.E., 1927.
- Farwell, Raymond Forrest.....*Assistant Professor of Business Administration*
B.A., California, 1920; M.A., Washington, 1926.
- Fawcett, John.....*Personnel Officer*
B.A., Princeton, 1921.
- Fischer, Louis.....*Assistant State Chemist*
Ph.C., Washington, 1925; B.S., 1926; M.S., 1928.
- Foote, Ernest A., Lieutenant, U.S. Navy.....*Assistant Professor of Naval Science and Tactics*
Graduate, U.S. Naval Academy, 1918.
- Foote, Hope Lucile.....*Assistant Professor of Interior Design*
B.A., Iowa State Teachers College, 1920; M.A., Columbia, 1923.
- Foster, Henry Melville.....*Associate Professor and Director of Physical Education for Men*
B.S., Oregon, 1924; M.A., Columbia, 1926.
- Frazer, William D., Major, C.A.C.....*Assistant Professor of Military Science and Tactics*
B.S. (C.E.), Michigan State College, 1909.
- Frein, Pierre Joseph.....*Professor of Romanic Languages*
B.A., Williams, 1892; Ph.D., Johns Hopkins, 1899.
- Frye, Theodore Christian.....*Professor of Botany*
B.S., Illinois, 1894; Ph.D., Chicago, 1902.
- Fuller, Richard E.....*Assistant Professor of Geology on Research Appointment*
B.S., Washington, 1924; M.S., 1925; Ph.D., 1930.
- Ganzert, Frederic William.....*Acting Assistant Professor of Political Science*
B.A., California, 1926; M.A., 1927.
- Garcia-Prada, Carlos.....*Assistant Professor of Spanish*
B.A., Colegio del Rosario, 1918; M.A., Michigan, 1924; Ph.D., Bogata, 1929.
- Gavett, George Irving.....*Associate Professor of Mathematics*
B.S. (C.E.), Michigan, 1893.
- Geoghegan, J. Herbert.....*Associate in Geology*
B.A., Washington, 1922; M.A., 1923.
- Gillette, Aletta Maria.....*Associate in English*
B.A., Smith, 1907; M.A., Washington, 1911.
- Glover, Harriet F.....*Associate in Physical Education for Women*
B.S. in Edu., Washington, 1929.
- Goggio, Charles.....*Associate Professor of Romanic Languages*
B.A., Harvard, 1910; M.A., Wisconsin, 1914; Ph.D., 1919.
- Goodner, Ivan Wilbur.....*Professor of Law*
LL.B., Nebraska, 1897.
- Goodrich, Forest Jackson.....*Associate Professor of Pharmacy and Materia Medica*
Ph.C., Washington, 1913; B.S., 1914; M.S., 1917; Ph.D., 1926.
- Goodsell, Julia.....*Associate in Zoology*
B.S., Washington, 1927; M.S., 1928.

- Goodspeed, George Edward.....*Associate Professor of Geology*
B.S. (Min.E.), Massachusetts Institute of Technology, 1910.
- Gould, James Edward.....*Professor of Maritime Commerce*
B.Ph., Washington, 1896; B.Pd., 1898; M.A., Harvard, 1907.
- Gowen, Herbert Henry.....*Professor of Oriental Studies*
St. Augustine's College (Canterbury): D.D., Whitman College, 1912.
- Gowen, Lancelot.....*Associate Professor of Architecture*
B.A., California, 1916; M.A. (Arch.), 1921.
- Graves, Dorsett.....*Associate in Physical Education for Men*
Missouri.
- Gregory, Homer Ewart.....*Associate Professor of Business Administration*
B.A., Washington State College, 1914; M.A., Chicago, 1917.
- Griffith, Dudley David.....*Professor of English; Dean of the College of Liberal Arts*
B.A., Simpson College, 1903; Ph.D., Chicago, 1916.
- Grondal, Bror Leonard.....*Professor of Forestry*
B.A., Bethany (Kansas), 1910; M.S.F., Washington, 1913.
- Gross, Mary Emma.....*Associate Professor and Director of Physical Education for Women*
B.A., Goucher College, 1912; M.A., Columbia, 1915.
- ¹Groth, John Henry.....*Assistant Professor of German*
B.A., Wartburg College, 1912; M.A., Washington, 1926; Ph.D., Columbia, 1928.
- Guberlet, John Earl.....*Professor of Zoology*
B.A., Bethany, 1909; M.A., Illinois, 1911; Ph.D., 1914.
- Gundlach, Ralph.....*Assistant Professor of Psychology*
B.A., Washington, 1924; M.A., 1925; Ph.D., Illinois, 1927.
- Gunther, Erna.....*Instructor in Anthropology; Director of the Museum*
B.A., Barnard, 1919; M.A., Columbia, 1920; Ph.D., 1926.
- Guthrie, Edwin Ray.....*Professor of Psychology*
B.A., Nebraska, 1907; M.A., 1910; Ph.D., Pennsylvania, 1912.
- Guthrie, Elton.....*Associate in Sociology*
B.A., Washington, 1926.
- Haas, Harold Milburn.....*Instructor in Business Administration*
B.S. (M.E.), Purdue, 1911; M.B.A., Washington, 1931.
- Haggett, Winnifred Sunderlin.....*Dean of Women*
B.A., Olivet, 1897; M.A., Michigan, 1898.
- Hall, Amy Violet.....*Associate in English*
B.Ed., Washington, 1920; M.A., 1923.
- Hall, David Connolly.....*Professor of Hygiene; University Health Officer*
Ph.B., Brown, 1901; Sc.M., Chicago, 1903; M.D., Rush Medical College, 1907.
- Hall, Helen.....*Instructor in Music*
B.M., Washington, 1925.
- Hall, James Kendall.....*Associate Professor of Business Administration*
B.A., Oregon, 1925; M.A., 1926; Ph.D., Stanford, 1929.
- Hall, John F.....*Lecturer in Sociology*
- Hall, R. A., Lieutenant Commander, U.S.N.....*Assistant Professor of Naval Science and Tactics*

¹On leave, 1931-32.

- Haller, Mary Elizabeth.....*Associate in Mathematics*
B.A. in Edu., Washington, 1924; M.S., 1931.
- Hamack, Frank Hartmond.....*Associate and Advisor in Business Administration*
LL.B., Georgetown, 1916.
- Hamilton, Malcolm.....*Instructor in Naval Science and Tactics*
- Hamilton, Rachel Elizabeth.....*Associate in French*
B.L., Whitman, 1910; M.A., Washington, 1924.
- Harris, Charles William.....*Professor of Hydraulic Engineering*
B.S. (C.E.), Washington, 1903; C.E., Cornell, 1905.
- Harris, Joseph Pratt.....*Professor of Political Science*
B.A., Kansas, 1918; Ph.D., Chicago, 1923.
- Harrison, Joseph Barlow.....*Associate Professor of English*
B.A., Washington, 1910; B.A., Oxford, 1913.
- Harsch, Alfred E.....*Instructor in Business Administration*
B.A., Washington, 1926; LL.B., 1928.
- Hatch, Melville H.....*Assistant Professor of Zoology*
B.A., Michigan, 1919; M.A., 1921; Ph.D., 1925.
- Hauan, Merlin James.....*Lecturer in Civil Engineering*
B.S. (E.E.), Washington, 1925.
- Hawthorn, George Edward.....*Assistant Professor of Civil Engineering*
B.S. (C.E.), Washington, 1915; C.E., 1926.
- Hayner, Norman Sylvester.....*Associate Professor of Sociology*
B.A., Washington, 1920; M.A., Chicago, 1921; Ph.D., 1923.
- Helmlinge, Charles Louis.....*Associate Professor of Romanic Languages*
B.Ph., Wallace College (Ohio), 1911; M.A., Washington, 1915.
- Henderson, Joseph E.....*Assistant Professor of Physics*
B.S., Wooster, 1922; Ph.D., Yale, 1928.
- Henry, William Elmer.....*Librarian Emeritus; Dean Emeritus of the Library School*
B.A., Indiana, 1891; M.A., 1892.
- Herington, George B.....*Associate in Psychology*
B.A., Reed, 1930; M.A., Washington, 1931.
- Hermans, Thomas G.....*Associate in Psychology*
B.S., Washington, 1923; M.A., 1927.
- Herrman, Arthur Philip.....*Associate Professor of Architecture*
B.A. (Arch.), Carnegie Institute of Technology, 1920.
- Higgs, Paul McClellan.....*Instructor in Physics*
B.S., Washington, 1919.
- Hill, Raymond L.....*Assistant Professor of Painting*
Rhode Island School of Design, 1913; California School of Fine Arts, 1915.
- Hoard, George Lisle.....*Assistant Professor of Electrical Engineering*
B.S. (E.E.), Washington, 1917; M.S. (E.E.), 1926.
- Hoffstadt, Rachel Emilie.....*Assistant Professor of Bacteriology*
B.S., Hanover, 1908; M.S., Chicago, 1913; Ph.D., 1915; D.Sc., Johns Hopkins, 1921.
- Hotson, John William.....*Associate Professor of Botany*
B.A., McMaster, 1901; M.A., 1902; Ph.D., Harvard, 1913.

- Houston, Frances.....*Assistant Health Officer*
B.S., Chicago, 1914; M.D., Rush Medical College, 1917.
- Hughes, Glenn.....*Professor of English*
B.A., Stanford, 1916; M.A., Washington, 1921.
- Isaacs, Walter F.....*Professor of Fine Arts; Acting Dean of the College of Fine Arts*
B.S. (F.A.), James Millikin, 1909; Academie Colorossi and Academie Moderne, Paris.
- Jacobs, Melville.....*Instructor in Anthropology*
B.A., College of the City of New York, 1922; M.A., Columbia, 1923; Ph.D., 1931.
- Jacobsen, Philip A.....*Instructor in General Engineering*
B.S., Washington, 1926.
- Jacobsen, Theodore Siegmundt.....*Assistant Professor of Astronomy and Mathematics*
B.A., Stanford, 1922; Ph.D., California, 1926.
- James, Burton Wakeley.....*Assistant Professor of English*
Emerson College, 1912-13.
- James, Florence B.....*Assistant Professor of English*
Emerson College, 1914.
- Jeffers, Dwight S.....*Professor of Forestry*
B.A., Illinois Wesleyan, 1906; M.F., Yale, 1911.
- Jensen, Alfred.....*Instructor in General Engineering*
B.S. in C.E., Washington, 1925.
- Jerbert, Arthur Rudolph.....*Assistant Professor of Mathematics*
B.S., Washington, 1916; M.S., 1923; Ph.D., 1928.
- ¹Jessup, John H.....*Associate Professor of Education*
B.A., Earlham College, 1920; M.A., Iowa, 1924.
- Johnson, Arlien.....*Lecturer in Sociology*
B.A., Reed College, 1917; M.A., Columbia, 1923; Diploma, New York School of Social Work, 1922.
- Johnson, Charles Willis.....*Professor of Pharmaceutical Chemistry; Dean of the College of Pharmacy*
Ph.C., Michigan, 1896; B.S., 1900; Ph.D., 1903.
- Jones, Robert William.....*Associate Professor of Journalism*
B.A., Missouri, 1906; LL.B., 1913; M.A., South Dakota, 1918.
- Kahin, Helen.....*Associate in English*
B.A., Wilson College, 1909; M.A., Indiana, 1911.
- Kelley, Frank H., Lieutenant Commander, U.S.N., *Assistant Professor of Naval Science and Tactics*
Graduate, U.S. Naval Academy, 1907.
- Kennedy, Fred Washington.....*Director of the Journalism Laboratories*
- Kenworthy, Ray W.....*Instructor in Physics*
B.A., Iowa, 1924; M.S., 1925.
- Kerrigan, Sylvia Finlay.....*Associate in English*
B.A., Washington, 1919; M.A., 1923.
- Kincaid, Trevor.....*Professor of Zoology*
B.S., Washington, 1899; M.A., 1901.
- King, Joseph C.....*Instructor in Naval Science and Tactics*

¹ On leave, 1931-32.

- Kirchner, George.....*Instructor in Music*
Leipzig.
- Kirsten, Friedrich Kurt.....*Professor of Aeronautical Engineering*
B.S., Washington, 1909; E.E., 1914.
- Kobe, Kenneth Albert.....*Instructor in Chemical Engineering*
B.S. in Chemical Engineering, Minnesota, 1926; M.S., 1928; Ph.D., 1930.
- Kunde, Norman Frederich.....*Instructor in Physical Education for Men*
B.S. (Edu.), Washington, 1928.
- Lamont, D. J.....*Associate in Physical Education for Men*
LL.B., Loyola University, 1925.
- Lamson, Joseph Voris.....*Instructor in General Engineering*
B.S. (E.E.), Washington, 1926.
- Landes, Henry.....*Professor of Geology and Mineralogy; Dean of the College of Science*
B.A., Indiana, 1892; B.A., Harvard, 1892; M.A., 1893.
- Langenhan, Henry August.....*Professor of Pharmacy*
Ph.G., Illinois, 1908; Ph.C., 1909; B.S., Wisconsin, 1913; M.S., 1915; Ph.D., 1918.
- Lantz, Harvey.....*Professor of Law*
Ph.B., DePauw, 1888; M.A., 1891; LL.B., Kent Law School, 1893.
- Lawrence, Charles Wilson.....*Assistant Professor of Music*
B.Mus., Oberlin, 1918.
- Lawson, Jane Sorrie.....*Associate in English*
M.A., St. Andrews (Scotland), 1906.
- Leahy, Kathleen M.....*Assistant Professor of Nursing Education*
B.A., Oregon, 1926.
- Lindblom, Roy Eric.....*Assistant Professor of Electrical Engineering*
B.S. (E.E.), Washington, 1922; M.S. (E.E.), 1929.
- Littell, Roland B.....*Instructor in Naval Science and Tactics*
- Loew, Edgar Allen.....*Professor of Electrical Engineering*
B.S. (E.E.), Wisconsin, 1906; E.E., 1922.
- Loughridge, Donald H.....*Assistant Professor of Physics*
B.S., California Institute of Technology, 1923; Ph.D., 1927.
- Lucas, Henry Stephen.....*Associate Professor of History*
B.A., Olivet, 1913; M.A., Indiana, 1915; Ph.D., Michigan, 1921.
- Luce, Dean, First Lieutenant, C.A.C.....*Assistant Professor of Military Science and Tactics*
Graduate, U.S. Military Academy, 1918.
- Lynch, James E.....*Associate Professor of Fisheries*
B.A., Nebraska, 1917; M.A., 1921; Ph.D., California, 1929.
- Lynn, Eldin Verne.....*Professor of Pharmacology and Chemistry*
B.A., Washington, 1909; M.A., Wisconsin, 1910; Ph.D., 1918.
- McConahay, James.....*Lecturer in Business Administration*
B.S., Washington and Jefferson, 1896; M.S., 1899; LL.B., Northwestern, 1899; C.F.A., 1916.
- McCormack, Harvey William, Commander, U.S.N.....*Professor of Naval Science and Tactics*
Graduate, U.S. Naval Academy, 1907; M.A., Columbia, 1915; Graduate, Naval War College, 1927.
- McCreery, Ruth Allen.....*Instructor in Music*
B.M., Washington, 1924.

- McFarlan, Lee Horace.....*Assistant Professor of Mathematics*
B.S. (Edu.), Kansas State Teachers College, 1917; M.A., Missouri, 1921;
Ph.D., 1924.
- McGownd, Matilda Jane.....*Assistant Professor of Physical Education
for Women*
B.S., Columbia, 1915; M.A., 1923.
- McGrew, J. Fred.....*Assistant Professor of English*
B.A., Willamette, 1922; M.A., Wisconsin, 1926.
- McIntyre, Harry John.....*Associate Professor of Mechanical Engineering*
B.S. (M.E.), Washington, 1915; M.B.A., 1923.
- McKay, George F.....*Assistant Professor of Music*
B.Mus., Rochester, 1923.
- McKenzie, Vernon.....*Professor of Journalism; Dean of the
School of Journalism*
B.A., Toronto, 1909; M.A., Harvard, 1914.
- McMahon, Edward.....*Professor of American History*
Ph.B., Washington, 1898; M.A., Wisconsin, 1907.
- McMahon, Theresa Schmid.....*Professor of Economics*
B.A., Washington, 1899; M.A., 1901; Ph.D., Wisconsin, 1909.
- McMinn, Bryan Towne.....*Assistant Professor of Mechanical Engineering*
B.S., Oregon Agricultural College, 1918; M.S. (M.E.), Washington, 1926;
M.E., 1931.
- Mackenzie, Donald H.....*Instructor in Business Administration*
B.B.A., M.B.A., Washington, 1925.
- Magnusson, Carl Edward.....*Professor of Electrical Engineering; Director
of Engineering Experiment Station*
B.E.E., Minnesota, 1896; M.S., 1897; E.E., 1905; Ph.D., Wisconsin, 1900.
- Mander, Linden A.....*Associate Professor of Political Science*
M.A., Adelaide, 1921.
- Markey, Helen Buck.....*Instructor in Design*
B.A. (Edu.), Washington, 1929.
- Martin, Charles Emanuel.....*Professor of Political Science*
B.L., California, 1914; M.A., 1915; Ph.D., Columbia, 1917.
- ¹Martin, Howard Hanna.....*Associate Professor of Geography*
B.S., Pennsylvania, 1922; M.A., George Washington, 1923; Ph.D., 1929.
- Martin, Robert.....*Associate in Sociology*
B.A., Washington, 1928; M.A., 1929.
- Matthews, Harry Thomas, Colonel, U.S. Army, Retired.....*Professor of
Military Science and Tactics*
LL.B., Washington University, 1888.
- May, Charles Culbertson...*Professor of Civil Engineering and Architecture;
Superintendent of Buildings and Grounds*
B.S. (C.E.), Washington, 1910.
- Maydahl, Bergete.....*Associate in Physical Education for Women*
B.S. (P.E.), Washington, 1927.
- Meany, Edmond Stephen.....*Professor of History*
B.S., Washington, 1885; M.S., 1899; M.L., Wisconsin, 1901; LL.D., College
of Puget Sound, 1926.
- Mechem, Frank Lawrence.....*Professor of Law*
LL.B., Chicago, 1924; Ph.B., 1926.

¹ On leave, 1931-32.

- Mehan, Lucille Turnacliffe.....*Assistant State Chemist*
Ph.C., Washington, 1921; B.S., 1923.
- Meisnest, Frederick William.....*Lecturer in German*
B.S., Wisconsin, 1893; Ph.D., 1904.
- Meyer, Dorothy.....*Associate in Sociology*
B.A., Wisconsin, 1923.
- Miller, Alfred Lawrence.....*Associate Professor of Civil Engineering*
B.S. (C.E.), Washington, 1920; C.E., 1926.
- Miller, Charles John.....*Assistant Professor of Business Administration*
B.B.A., Washington, 1922; M.B.A., 1927.
- Miller, John William.....*Assistant Professor of Aeronautical Engineering*
B.S. (C.E.), Nebraska, 1905; C.E., 1928.
- Miller, Robert Cunningham.....*Associate Professor of Zoology*
B.A., Greenville, 1920; M.A., California, 1921; Ph.D., 1923.
- Milliman, Loren Douglas.....*Associate Professor of English*
B.A., Michigan, 1890.
- Mills, Russell.....*Associate Professor of Forestry*
B.S. in Forestry, Washington, 1922.
- Milner, Fred C., Captain, Infantry.....*Assistant Professor of Military Science and Tactics*
- Mitchell, Thomas G.....*Assistant Health Officer*
M.D., Michigan, 1925.
- Moore, John Brooks.....*Associate Professor of English*
B.A., Harvard, 1914; M.A., Washington, 1916; Ph.D., Wisconsin, 1923.
- More, Charles Church.....*Professor of Structural Engineering*
C.E., Lafayette, 1898; M.C.E., Cornell, 1899; M.S., Lafayette, 1901.
- Moritz, Harold Kennedy.....*Instructor in Civil Engineering*
B.S. (M.E.), Massachusetts Institute of Technology, 1921.
- Moritz, Robert Edouard.....*Professor of Mathematics*
B.S., Hastings, 1892; Ph.M., Chicago, 1896; Ph.D., Nebraska, 1901; Ph.D., Strassburg, 1902.
- Mullemeister, Hermance.....*Assistant Professor of Mathematics*
Ph.D., Royal University of Utrecht, Holland, 1913.
- Munro, Kathleen.....*Assistant Professor of Music*
B.M., Washington, 1924; M.A., Columbia, 1929.
- Neikirk, Lewis Irving.....*Assistant Professor of Mathematics*
B.S., Colorado, 1898; M.S., 1901; Ph.D., Pennsylvania, 1903.
- Nielson, Henry S., Lieutenant (J.G.), U.S.N.....*Assistant Professor of Naval Science and Tactics*
Graduate, U.S. Naval Academy, 1920.
- Nelson, Everett.....*Assistant Professor of Philosophy*
B.A., Washington, 1923; M.A., 1925; M.A., Harvard, 1928; Ph.D., 1929.
- Newbury, Kirsten Larssen.....*Instructor in Physics*
B.S., Washington, 1919; M.S., 1924; Ph.D., Minnesota, 1928.
- Newenham, Frances Dickey.....*Associate Professor of Music*
Graduate, Iowa State Teachers' College, 1901; B.S., Columbia, 1912; M.A., 1913.
- Nix, Martha J.....*Associate in English*
B.A., Washington, 1922; M.A., 1925.

- Norris, Earl R.....*Assistant Professor of Chemistry*
B.A., Montana State College, 1919; Ph.D., Columbia, 1924.
- Nottelmann, Rudolph H.....*Professor of Law*
B.A., Monmouth College, 1912; M.A., Illinois, 1913; LL.B., Yale, 1922.
- O'Bryan, Joseph Grattan.....*Professor of Law*
B.A., Jesuit College (Denver), 1893; LL.D., Regis College, 1928.
- O'Keefe, Jessie.....*Instructor in Home Economics*
B.S., Washington, 1927; M.S., 1928.
- Olcott, Virginia.....*Instructor in Clinical Practice for Harborview Hospital*
B.S., Washington, 1927; M.S., 1931.
- O'Leary, Keith.....*Associate in Botany*
B.S., Washington, 1929.
- Oliver, Louise Benton.....*Instructor in Music*
B.M., Washington, 1919.
- Orr, Frederick Wesley.....*Professor of English*
B.L., Drury College, 1901; G.C.D., Boston School of Expression, 1905;
M.A., Lawrence College, 1925.
- Osborn, Frederick Arthur.....*Professor of Physics*
Ph.B., Michigan, 1896; Ph.D., 1907.
- Padelford, Frederick Morgan.....*Professor of English; Dean of the
Graduate School; Assistant Vice-President*
B.A., Colby, 1896; M.A., 1899; Ph.D., Yale, 1899.
- Patterson, Ambrose.....*Assistant Professor of Painting*
Melbourne National Gallery, Victoria, Australia; Julien, Colorossi and Delocluse
Academies, Europe.
- Patzner, Otto.....*Professor of French*
B.L., Wisconsin, 1898; M.L., 1899; Ph.D., 1907.
- Payne, Blanche.....*Assistant Professor of Home Economics*
B.S., Kansas State Teachers' College, 1916; M.A., Columbia, 1927.
- Pearce, Richard J.....*Instructor in Architecture*
B.A. (Arch.), Washington, 1926; M.A., Harvard, 1928.
- Pellegrini, Angelo.....*Associate in English*
B.A., Washington, 1927.
- Penington, Ruth.....*Instructor in Painting*
B.F.A., Washington, 1927.
- Phelan, James.....*Associate in Physical Education for Men*
B.A., Notre Dame, 1917.
- Phifer, Lyman D.....*Assistant Director of Oceanographic Laboratories*
B.S., Washington, 1928; M.S., 1929.
- Phillips, Herbert Joseph.....*Associate in Philosophy*
B.A., Washington, 1920.
- Pollard, Robert Thomas.....*Assistant Professor of Oriental Studies*
B.A., Ohio, 1922; M.A., 1923; Ph.D., Minnesota, 1931.
- Powell, Sargent.....*Assistant Professor of Chemistry*
B.S., M.S., Washington, 1916; Ph.D., Illinois, 1919.
- Powers, Francis Fountain.....*Assistant Professor of Education*
B.A., Washington, 1922; M.A., Oregon, 1927; Ph.D., Washington, 1928.
- Pratt, Dudley.....*Assistant Professor of Sculpture*
B.A., Yale, 1919.
- Preston, Howard Hall.....*Professor of Business Administration*
B.S., Coe, 1911; M.A., Iowa, 1914; Ph.D., 1920.
- Pries, Lionel Henry.....*Instructor in Architecture*
B.A., California, 1920; M.Arch., Pennsylvania, 1921.

- Priest, Harold Ragan, Captain, Infantry.....*Assistant Professor of Military Science and Tactics*
Washington.
- Putnam, Marguerite....*Associate in Library Science; Acquisitions Librarian*
B.A., Washington, 1921; B.S. (L.S.), 1923.
- Puymbroeck, Lea.....*Associate in Design*
B.F.A., Washington, 1924.
- Quainton, Cecil Eden.....*Assistant Professor of History*
B.A., Manitoba, 1918; B.A., Cambridge, 1924.
- Rader, Melvin Miller.....*Assistant Professor of Philosophy*
B.A., Washington, 1925; M.A. 1927; Ph.D., 1929.
- Radford, Ethel Sanderson.....*Associate in Chemistry*
B.A., McGill, 1895.
- Rahskopf, Horace G.....*Assistant Professor of English*
B.A., Willamette, 1920; M.A., Iowa, 1927.
- Raitt, Effie Isabel.....*Professor of Home Economics*
B.S., Columbia, 1912; M.A., 1919.
- Read, William Merritt.....*Assistant Professor of Classical Languages*
B.A., DePauw, 1923; M.A., 1924; Ph.D., Michigan, 1926.
- Reed, Florence.....*Instructor in Physical Education for Women*
B.A., Iowa State Teachers' College, 1927; M.A., Teachers' College, Columbia, 1930.
- Renner, George Thomas, Jr.....*Associate Professor of Geography*
B.A., Cornell, 1922; M.A., Columbia, 1924; Ph.D., 1927.
- Rhodes, Fred H., Jr.....*Instructor in Civil Engineering*
B.S. (M.E.), B.S. (C.E.), Washington, 1926.
- Rhodes, Helen Neilson.....*Assistant Professor of Design*
National Academy of Design; Columbia; B.A., Washington, 1927.
- Richards, John W.....*Assistant Professor of Law*
B.A., Wisconsin, 1923; LL.B., Harvard, 1926; LL.M., 1930; J.S.D., 1931.
- Richardson, Oliver Huntington....*Professor Emeritus of European History*
B.A., Yale, 1889; M.A., Ph.D., Heidelberg, 1897.
- Rigg, George Burton.....*Professor of Botany*
B.S., Iowa, 1896; B.Di., 1899; M.A., Washington, 1909; Ph.D., Chicago, 1914.
- Ritchie, John III.....*Assistant Professor of Law*
B.S., Virginia, 1925; LL.B., 1927; J.S.D., Yale, 1931.
- Rivers, Elizabeth Anne.....*Assistant Professor of Home Economics*
B.S., Minnesota, 1916; M.A., Columbia, 1927.
- Roberts, Milnor.....*Professor of Mining Engineering and Metallurgy; Dean of the College of Mines*
B.A., Stanford, 1899.
- Robinson, Rex J.....*Instructor in Analytical Chemistry*
B.A., De Pauw, 1925; M.A., Wisconsin, 1927.
- Rosen, Moritz.....*Professor of Music*
Graduate, Warsaw Conservatory, Russia.
- Rowlands, Thomas McKie.....*Instructor in General Engineering*
B.S. (Nav. Arch. and Marine Engr.), Massachusetts Institute of Technology, 1926.
- Rowntree, Jennie Irene.....*Associate Professor of Home Economics*
B.S., Wisconsin, 1918; M.S., Chicago, 1925; Ph.D., Iowa, 1929.

- Rulifson, Leone Helmich.....*Associate in Physical Education for Women*
B.S., Washington, 1922.
- Savery, William.....*Professor of Philosophy*
B.A., Brown, 1896; M.A., Harvard, 1897; Ph.D., 1899.
- Schaller, Gilbert Simon.....*Associate Professor of Shop Engineering*
B.S., Illinois, 1916; M.B.A., Washington, 1925.
- Schertel, Max.....*Associate in German*
B.A., Washington, 1923; M.A., 1929.
- Schultz, Leonard Peter.....*Instructor in Fisheries*
B.A., Albion College, 1924; M.S., Michigan, 1926.
- Seeley, Harriet.....*Associate in Sociology*
B.A. (L.S.), Washington, 1918.
- Seeman, Albert L.....*Assistant Professor of Geography*
B.A., Morningside, 1921; M.B.A., Northwestern, 1922.
- Sergev, Sergius I.....*Instructor in Civil Engineering*
B.S. (M.E.), Washington, 1923; M.E., 1931.
- Shepherd, Harold.....*Professor of Law; Dean of the School of Law*
B.A., Stanford, 1919; J.D., 1922.
- Shuck, Gordon Russell.....*Associate Professor of Electrical Engineering*
E.E., Minnesota, 1906.
- Sidey, Thomas Kay.....*Professor of Latin and Greek*
B.A., Toronto, 1891; Ph.D., Chicago, 1900.
- Simpson, Lurline Violet.....*Instructor in French*
B.A., Washington, 1920; M.A., 1924; Ph.D., 1928.
- Sivertz, Victorian.....*Instructor in Chemistry*
B.S., Washington, 1922; M.S., West Virginia, 1924; Ph.D., McGill, 1926.
- Skinner, Macy Milmore.....*Professor of Business Administration*
B.A., Harvard, 1894; M.A., 1895; Ph.D., 1897.
- Smith, Charles Wesley.....*Librarian; Professor of Library Science*
B.A., Illinois, 1903; B.L.S., 1905.
- Smith, Eli Victor.....*Associate Professor of Zoology*
Ph.B., Illinois Wesleyan, 1907; M.A., Washington, 1909; Ph.D., Northwestern, 1911.
- Smith, Frederick Charnley.....*Instructor in General Engineering*
B.S. (C.E.), Washington, 1926; C.E., 1929.
- Smith, George McPhail.....*Professor of Inorganic Chemistry*
B.S., Vanderbilt, 1900; Ph.D., Freiburg, 1903.
- Smith, George Sherman.....*Assistant Professor of Electrical Engineering*
B.S. (E.E.), Washington, 1916; E.E., 1924.
- Smith, Harriett.....*Assistant Professor of Nursing Education*
B.A., Mount Holyoke, 1918.
- Smith, Harry Edwin.....*Professor of Business Administration;
Director of the Extension Service*
B.A., DePauw, 1906; Ph.D., Cornell, 1912.
- Smith, Stevenson.....*Professor of Psychology; Director of the
Gatzert Foundation*
B.A., Pennsylvania, 1904; Ph.D., 1909.
- Soule, Elizabeth.....*Associate Professor of Nursing Education*
Graduate, Malden, Massachusetts, Hospital School of Nursing, 1907; B.A., Washington, 1926; M.A., 1931.

- Southard, Lloyd C.....*Associate in Botany*
B.S. (Botany), Washington, 1928.
- Sperlin, Ottis Bedney.....*Lecturer in English*
B.A., Indiana University, 1903; Ph.M., Chicago, 1908.
- Steiner, Jesse Frederick.....*Professor of Sociology*
B.A., Heidelberg (Tiffin, Ohio), 1901; M.A., Harvard, 1913; Ph.D., Chicago, 1915.
- Stone, Edward Noble.....*Associate Professor of Classical Languages*
B.A., Olivet College, 1891; M.A., 1893.
- Tartar, Herman Vance.....*Professor of Chemistry*
B.S., Oregon Agricultural College, 1902; Ph.D., Chicago, 1920.
- Taylor, Edward Ayres.....*Professor of English*
B.A., Denver, 1915; M.A., Chicago, 1918; Ph.D., 1925.
- Terrell, Margaret Elma.....*Instructor in Home Economics; Director of
Dining Halls and Dormitories*
B.A., Penn College, 1923; M.A., Chicago, 1927.
- Terry, Miriam.....*Instructor in Music*
B.M., Washington, 1926.
- Terzieff, Otilie.....*Associate in German*
B.A., Illinois, 1923; M.A., Washington, 1926.
- Thomas, Harlan.....*Professor of Architecture*
B.S., State Agricultural College of Colorado, 1894.
- Thompson, Thomas Gordon.....*Professor of Chemistry and Director of
Oceanographic Laboratories*
B.A., Clark, 1914; M.S., Washington, 1915; Ph.D., 1918.
- Thompson, William F.....*Professor of Fisheries*
B.A., Stanford, 1911; Ph.D., 1931.
- Thomson, David.....*Professor of Latin; Vice-President*
B.A., Toronto, 1892.
- Tiemroth, Harold G., Lieutenant (J.G.), U.S.N.....*Assistant Professor of
Naval Science and Tactics*
Graduate, U.S. Naval Academy, 1924.
- Torney, John F.....*Instructor in Physical Education for Men*
B.S., Washington, 1928; M.A., Columbia, 1930.
- Tortorich, D. J., Lieutenant (J.G.), U.S.N.....*Assistant Professor of
Naval Science and Tactics*
- Truax, Arthur.....*Lecturer in Business Administration*
- Tyler, Richard G.....*Professor of Sanitary Engineering; Dean of the
College of Engineering*
C.E., Texas, 1908; B.S. (C.E.), Massachusetts Institute of Technology, 1910.
- Tymstra, Sybren Ruurd.....*Instructor in General Engineering*
M.E., Zwickau (Germany).
- Uhl, Willis Lemon.....*Professor of Education; Dean of the
School of Education*
B.A., Northwestern, 1911; Ph.D., Chicago, 1921.
- Ulbrickson, Alvin.....*Associate in Physical Education for Men*
B.B.A., Washington, 1927.
- Umphrey, George Wallace.....*Professor of Romanic Languages*
B.A., Toronto, 1899; M.A., Harvard, 1901; Ph.D., 1905.
- Utterback, Clinton Louis.....*Associate Professor of Physics*
B.S., Purdue, 1908; M.S., Washington, 1918; Ph.D., Wisconsin, 1926.

- Van de Walker, Frank Chester.....*Instructor in Business Administration*
B.A., Whitworth, 1917; M.B.A., Washington, 1923.
- Van Horn, Robert B.....*Assistant Professor of Civil Engineering*
B.S. (C.E.), Washington, 1916; C.E., 1926.
- Van Ogle, Louise.....*Assistant 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*
B.A., Gustavus Adolphus, 1910; M.A., Washington, 1917.
- Vickner, Edwin John.....*Professor of Scandinavian Languages*
B.A., Minnesota, 1901; M.A., 1902; Ph.D., 1905.
- Wade, Arthur E.....*Lecturer in Home Economics*
B.S., Cornell College, Iowa, 1902; M.D., Sioux City College of Medicine, 1905.
- Wagenknecht, Edward Charles.....*Associate in English*
B.T., Union Theological College, 1921; Ph.B., Chicago, 1923; M.A., 1924.
- Walters, Margaret C.....*Associate in English*
B.A., Mills College, 1917; M.A., Yale, 1919.
- Warner, Frank Melville.....*Associate Professor of Engineering Drawing*
B.S. (M.E.), Wisconsin, 1907.
- Weaver, Charles Edwin.....*Professor of Paleontology*
B.S., California, 1904; Ph.D., 1907.
- Weinzirl, John.....*Professor of Bacteriology*
B.S., Wisconsin, 1896; M.S., 1899; Ph.D., 1906; Dr.P.H., Harvard, 1918.
- Welch, Ralph.....*Associate in Physical Education for Men*
- Welke, Walter.....*Instructor in Music*
B.M. (Edu.), Michigan, 1927.
- Wesner, Elenora.....*Associate in German*
B.A., Chicago, 1915; M.A., Northwestern, 1923.
- Wheeler, Bayard O.....*Instructor in Business Administration*
B.A., California, 1928.
- Whittlesey, Walter Bell.....*Assistant Professor of French*
B.A., Washington, 1907; M.A., 1909.
- Wilcox, Chester.....*Associate in Physical Education for Men*
B.S. (C.E.), Purdue, 1928.
- Wilcox, Elgin Roscoe.....*Associate Professor of General Engineering*
B.S., Washington, 1915; Met.E., 1919.
- Wilkinson, Madge Watson.....*Assistant Professor of Psychology; Assistant
Director of the Gatzert Foundation*
B.A., Washington, 1918; M.S., 1921; Ph.D., 1927.
- Williams, Curtis Talmadge.....*Associate Professor of Education*
B.A., Kansas State Normal, 1913; M.A., Clark, 1914; Ph.D., 1917.
- Wilson, Clotilde.....*Instructor in Romanic Languages*
B.A., Washington, 1926; M.A., 1927.
- Wilson, Florence Bergh.....*Assistant Professor of Music*
B.M., Washington, 1917; B.A., 1924; M.A., Columbia, 1925.

- ¹Wilson, Francis Graham.....*Associate Professor of Political Science*
B.A., Texas, 1923; M.A., 1924; Ph.D., Stanford, 1928.
- Wilson, George Samuel.....*Professor of Mechanical Engineering;*
Consulting Engineer
B.S., Nebraska, 1906.
- Wilson, Hewitt.....*Professor of Ceramics*
Cer.Engr., Ohio State University, 1913.
- Wilson, William Charles Eade.....*Assistant Professor of Spanish*
B.A., Montana, 1922; M.A., Washington, 1925; Ph.D., 1928.
- Wilson, William R.....*Professor of Psychology; Director of Administrative*
Research
B.A., Washington, 1917; M.S., 1920; Ph.D., 1925.
- Wiltamuth, Ralph, Captain, Infantry.....*Assistant Professor of Military*
Science and Tactics
- Windesheim, Karl A.....*Instructor in English*
B.A., Lawrence College, 1923; M.A., Washington, 1927.
- Winger, Roy Martin.....*Professor of Mathematics*
B.A., Baker, 1906; Ph.D., Johns Hopkins, 1912.
- Winkenwerder, Hugo.....*Professor of Forestry; Dean of the College of*
Forestry
B.S., Wisconsin, 1902; M.F., Yale, 1907.
- Winslow, Arthur Melvin.....*Professor of Mechanical Engineering*
Ph.B., Brown, 1903; B.S., Massachusetts Institute of Technology, 1906.
- Wintermute, Edwin H.....*Instructor in Journalism*
B.A., Brown, 1927.
- Winther, Sophus Keith.....*Assistant Professor of English*
B.A., Oregon, 1918; M.A., 1919; Ph.D., Washington, 1926.
- Woerner, William.....*Associate in Physical Education for Men*
M.E., Purdue, 1929.
- Wood, Carl Paige.....*Professor of Music*
B.A., Harvard, 1906; M.A., 1907.
- Woodcock, Edith.....*Instructor in Music*
B.M., Rochester, 1925.
- Woolston, Howard B.....*Professor of Sociology*
B.A., Yale, 1898; S.T.B., Chicago, 1901; M.A., Harvard, 1902; Ph.D., Columbia,
1909.
- Worcester, John Locke.....*Professor of Anatomy*
M.D., Birmingham School of Medicine, Alabama, 1900.
- Worden, Ruth.....*Assistant Professor of Library Science; Acting*
Dean of the Library School
B.A., Wellesley, 1911.
- Worman, Eugenie.....*Associate in Design*
Pratt Institute.
- Young, Courtney P., First Lieutenant, C.A.C.....*Assistant Professor of*
Military Science and Tactics
Graduate, U.S. Military Academy, 1920.
- Zillman, Lawrence.....*Associate in English*
B.A., Washington, 1928.

¹ On leave, 1931-32.

LIBRARY STAFF

UNIVERSITY LIBRARY

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Tucker, Lena Lucile, B.S. (L.S.), M.A.,	<i>Senior Assistant, Catalogue Division</i>
Betts, Rachel Mary, B.S., B.S. (L.S.),	<i>Senior Assistant, Circulation Division</i>
Cavitt, Mary, B.A., B.S. (L.S.).....	<i>Senior Assistant, Circulation Division</i>
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Gilchrist, Madeline, B.A., B.S. (L.S.)....	<i>Senior Assistant, Reference Division</i>
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Kittel, George Henry, B.A., B.S. (L.S.).....	<i>Senior Assistant, Reference Division</i>
Todd, John Ronald, B.A., B.S. (L.S.)....	<i>Senior Assistant, Reference Division</i>
Johnston, Iris Francelle, B.S. (L.S.)....	<i>Junior Assistant, Reference Division</i>
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UNITED STATES ARMY RESERVE OFFICERS' TRAINING CORPS

Matthews, Harry Thomas.....	Colonel, U.S. Army Retd.
Frazer, William D.....	Major, C.A.C. (DOL)
de Rohan, Frederick J.....	Major, Infantry (DOL)
Milner, Fred C.....	Captain, Infantry (DOL)
Crim, Lemuel P.....	Captain, Ordnance (DOL)
Priest, Harold R.....	Captain, Infantry (DOL)
Cooper, James G., Jr.....	Captain, Infantry (DOL)
Wiltamuth, Ralph.....	Captain, Infantry (DOL)
Luce, Dean.....	First Lieutenant, C.A.C. (DOL)
Young, Courtney P.....	First Lieutenant, C.A.C. (DOL)
Lang, Walter.....	Master Sergeant, U.S.A., Retd.
Compton, William F.....	Staff Sergeant, D.E.M.L.
Bailey, Ray A.....	Staff Sergeant, D.E.M.L.
Hogwood, Joseph L.....	Sergeant, D.E.M.L.
Collins, Floyd.....	Sergeant, D.E.M.L.
Freeman, Charles E.....	Private First Class, D.E.M.L.
Whitchurch, Roy B.....	Private First Class, D.E.M.L.
Roberts, John O.....	Private First Class, D.E.M.L.

UNITED STATES NAVAL RESERVE OFFICERS'
TRAINING CORPS

McCormack, Harvey William.....	Commander, U.S. Navy
Kelley, Frank H.....	Commander, U.S. Navy
Hall, R. A.....	Lieutenant Commander, U.S. Navy
Nielson, Henry S.....	Lieutenant, U.S. Navy
Tortorich, Dominic J.....	Lieutenant, (J.G.), U.S. Navy
Tiemroth, Harold H.....	Lieutenant, (J.G.), U.S. Navy
Hamilton, Malcolm.....	Chief Gunner's Mate, U.S.N.R.
Littell, Roland B.....	Chief Yeoman, U.S.N.R.
King, Joseph E.....	Chief Turret Captain, U.S.N.R.
Dunlap, Clarence E.....	Chief Signalman, U.S.N.R.

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Willix, Douglas.....	Assistant Secretary to the President
Ward, May, M.A.....	Assistant Dean of Women
Bash, Mary Lola, B.A.....	Assistant Dean of Women
Westmoreland, Harriett.....	Publications Editor
Wentworth, Lois J., B.A.....	Secretary to the Dean of the Graduate School
Limbach, Roberta W.....	Secretary, Bureau of Appointments

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Winter, William Neal.....	Business Manager
Allen, Henry Coburn.....	Assistant Business Manager
May, Charles C., B.S. (C.E.).....	Superintendent of Buildings and Grounds
Hipkoe, Max.....	Purchasing Agent
Terrell, Margaret E., M.A.....	Director of Dormitories and Dining Halls
Thomas, Irene E., B.A.....	Manager of the Mimeographing Department
Kennedy, Fred W.....	Manager of the University Press

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Stevens, Edwin Bicknell, M.A.....	<i>Registrar</i>
Ollis, Alice M.....	<i>Assistant to the Registrar</i>
Ewell, Frances M.....	<i>Assistant for Schedules and Secretary to the Registrar</i>
Willard, Frances, B.A.....	<i>Credentials Assistant</i>
Whicker, Meta, B.A.....	<i>Registration Assistant</i>
Brugger, Minnie Kraus, B.A.....	<i>Graduation Assistant</i>
Pepper, Leah H.....	<i>Recording Assistant</i>

THE MUSEUM

Gunther, Erna, Ph.D.....	<i>Director of the Museum</i>
Rathbun, Samuel F.....	<i>Honorary Curator of Birds</i>
Flahaut, Martha Reekie, B.A.....	<i>Assistant in Biology</i>

THE HENRY ART GALLERY

Isaacs, Walter F., B.S. (F.A.).....	<i>Director of the Gallery</i>
Savery, Halley	<i>Curator</i>

ENGINEERING EXPERIMENT STATION

Magnusson, Carl Edward, Ph.D., E.E.....	<i>Director</i>
Roberts, Milnor, B.A.....	<i>Mining and Metallurgy</i>
Grondal, Bror Leonard, B.A., M.S.F.....	<i>Forest Products</i>
Kirsten, Frederick Kurt, B.S., E.E.....	<i>Aeronautical Engineering</i>
Benson, Henry Kreitzer, Ph. D.....	<i>Chemical Engineering</i>
Harris, Charles William, B.S., C.E.....	<i>Civil Engineering</i>
Loew, Edgar Allan, B.S., E.E.....	<i>Electrical Engineering</i>
Wilson, George Samuel, B.S.....	<i>Mechanical Engineering</i>
Osborn, Frederick Arthur, Ph.D.....	<i>Physics Standards and Tests</i>

OCEANOGRAPHIC LABORATORIES

Thompson, Thomas Gordon, Ph.D.....	<i>Director</i>
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STATE CHEMIST

Johnson, Charles Willis, Ph.C., Ph.D.....	<i>Director</i>
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NORTHWEST EXPERIMENT STATION, UNITED STATES
BUREAU OF MINES

Yancey, Harry Fagan, Ph.D.....	<i>Acting Supervising Engineer</i>
Johnson, Kenneth Alexander, B.S.....	<i>Junior Chemist</i>
Schoning, John G.....	<i>Senior Foreman Miner, Mine Safety Station</i>
Keating, Henry T.....	<i>Principal Clerk</i>
Towle, Harriett E.....	<i>Clerk</i>
Lance, William E.....	<i>Mill Mechanic</i>

UNIVERSITY HEALTH SERVICE

Hall, David Connolly, M.D.....	<i>University Health Officer</i>
Mitchell, Thomas G., M.D.....	<i>Assistant Health Officer</i>
Houston, Frances, M.D.....	<i>Assistant Health Officer</i>
Reeder, Maude, R.N.....	<i>Superintendent, Infirmary</i>

*BOARDS AND COMMITTEES

1931-1932

ADMINISTRATIVE BOARDS

- Admissions*.....The Board of College Deans
Board of Deans—Thomson, Burd, Condon, Coon, Griffith, Haggett, Isaacs, Johnson, Landes, McKenzie, Padelford, Roberts, Shepherd, H. E. Smith, Stevens, Tyler, Uhl, Winkenwerder, Worden.
Buildings—May (1933), Stevens (1933), Thomas (1932), Thomson (1934), Winter (1934).
Schedule and Registration—Stevens (1933), Fitzgerald (1934), Carpenter (1932), Cox, W. E. (1932), Newenham (1934), Winther (1934), G. S. Wilson (1932).
Student Discipline—R. W. Jones (1933), Guthrie (1932), Ayer (1934), Bishop (1934), Raitt (1932).
Summer Quarter—Burd (1933), Winter (1932), Landes (1934), Padelford (1934), Griffith (1932), Uhl (1933).

COMMITTEES OF THE FACULTY

- Art*.....Isaacs (1933), Pries (1934), H. Savery (1932).
Athletics—McIntyre (1934), O. E. Draper (1934), Dehn (1933), Winger (1932), Griffith (1932).
Curriculum—Loew (1934), and chairmen of the college curriculum committees, together with a representative from each college or school having no curriculum committee.
Educational Research—Griffith (1932), Powell (1933), Coon (1934), Padelford (1934), Wilcox (1933), Quainton (1933), Isaacs (1932), W. R. Wilson (1933), Uhl (1932).
Graduation—Goodspeed (1932), Cornu (1932), Skinner (1933), A. L. Miller (1934), Rhodes (1934), Stevens (1933).
Honors—Densmore (1934), Dahlin (1933), Fawcett (1932), Hawthorne (1933), Read (1932), C. E. Martin (1934).
Library—C. W. Smith (1933), Coon (1933), Guberlet (1932), Loew (1933), Padelford (1934), J. P. Harris (1934), Powell (1932), Thomson (1932).
Public Exercises—Daniels (1933), Conway (1932), D. C. Hall (1932), Welke (1934).
Relations with Secondary Schools and Colleges—Bolton (1934), T. R. Cole (1933), Creer (1932), Frein (1934), Jessup (1932), Sperlin (1932), Stevens (1934), Utterback (1933), Uhl (1934), Warner (1932).

*The president is ex-officio a member of all University boards and committees.

Rhodes Scholarships—Densmore (1933), K. Cole (1934), Harrison (1934), Quainton (1932).

Rules—Goodner (1934), Meisnest (1932), Stevens (1934), Condon (1932), Ward (1933).

Student Affairs—Dakan (1933), Creer (1933), E. M. Draper (1932), Dreslar (1932), Haggett (1934), Fawcett (1934).

Student Publications—McKenzie (1933), Rigg (1934), Campbell (1932), Osborn (1932).

Student Welfare and Loans—Gould (1933), Bash (1932), Condon (1932), D. C. Hall (1932), Mrs. McMahon (1934).

THE UNIVERSITY

HISTORY

The foundation for establishment of the University of Washington was laid in 1854, when Governor Isaac Ingalls Stevens, in his message to the first legislature, recommended that Congress be memorialized to appropriate land for a university. Two townships subsequently were granted and in January, 1861, the legislature finally located the Territorial University at Seattle.

On February 22 (Washington's Birthday), the Reverend Daniel Bagley, John Webster and Edmund Carr, composing the Board of University Commissioners, met and organized for work. Ten acres of land were donated by Hon. Arthur A. Denny, Charles C. Terry and Edward Lander from their adjoining farms, and on May 21, 1861, the cornerstone of the main building was laid. The building was completed in specified time and on November 4, 1861, classes were opened for students.

For thirty-four years the University occupied the original tract but in the later eighties it became apparent that the campus eventually would be outgrown. By 1890 the growth both of the University and of Seattle's business district evinced the necessity of more ample grounds.

To meet this need, the legislature passed a bill on March 7, 1893, providing for the relocation, construction and maintenance of the University of Washington. A fractional section of land consisting of 355 acres between Lakes Washington and Union, the present site of the University, was purchased, and on the completion of Denny Hall and some minor buildings the University moved to its present location in September, 1895.

GOVERNMENT

Under the constitution and laws of the State of Washington, 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 the state. As yet the property belonging to the institution as an endowment yields comparatively little revenue. The income from this property in years to come will greatly help to support the institution.

The legislature of 1925 increased the millage rate for operation from 1.10 of a mill to 1.47, but based this rate on the then assessed valuation of \$1,158,026,676.00. This now yields annually \$1,702,300.00, which augmented by sundry property receipts, interest and a portion of tuitions should yield approximately \$1,919,000.00 annually.

The property of the University includes:

The two townships of land granted by Congress in 1854. There remains of this old grant some 3,000 acres.

The old university site, consisting of the tract of 8.32 acres donated in 1861 by Arthur A. Denny and wife, and 1.67 acres donated by C. C. Terry and wife and Edward Lander. This "ten-acre tract" is situated in the very heart of Seattle and is under a forty-seven year lease to the Metropolitan Building Company bearing date of 1907. By the provisions of the act of the

Legislature of 1915, the income from this lease (at present \$80,000 a year), together with a portion of tuition fees, goes into the "University of Washington Building Fund." The following table will show the terms of the lease, giving the period and the annual rental:

Period	Annual Rent
1907-1912	\$ 15,000.00
1912-1922	40,000.00
1922-1932	80,000.00
1932-1942	100,000.00
1942-1954	140,000.00

One hundred thousand acres of land segregated by the state March 14, 1893.

BEQUESTS

The Board of Regents of the University of Washington is authorized by law to receive such bequests or gratuities as may be given or granted to the University, and to invest or expend the same according to the terms of such bequests or gratuities. The Board of Regents has adopted rules to govern and protect the principal of such gifts and the income therefrom so that the same will be forever applied to the purposes designated by the donors of the gifts.

Those who desire to aid the work of the University of Washington by means of gifts *inter vivos* or by wills may do so, feeling assured that their wishes as outlined in the deed of gift or will are to be carried into effect as provided by law.

A simple statement in a will, such as the following, will be sufficient:

"I give, devise, and bequeath to the Board of Regents of the University of Washington the sum of.....dollars *In Trust, However*, for the following uses and purposes to be invested in securities to be approved by said Board and the interest therefrom to be expended in the maintenance of" (scholarship or fellowship fund named).

These bequests may be applied to the maintenance of scholarships and fellowships in any subject desired by the donor which meets the approval of the Board of Regents.

EQUIPMENT

GROUNDS

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

PLAN OF THE CAMPUS

The plan for grouping the buildings of the University of Washington was prepared by direction of the Board of Regents, and with the supervision of the Faculty Committee. It was officially adopted May, 1915. The scheme is developed upon three major quadrangles, the Science Group about the axis of Rainier Vista, the Administration or Library Group with Meany Hall enclosing the west side, and the Liberal Arts Group about an axis at right angles with the walk in front of Denny Hall.

The plan provides for foot traffic only within the quadrangles. Automobile and service roads are provided to give access to the various groups, and scenic driveways encircle the campus. The ground to the east of Mont-

lake Boulevard is reserved for athletics and the Stadium seating 30,000 persons has been built in this section of the campus by the Associated Students of the University of Washington.

Denny Field already has been changed to conform to the plan which provides for a Women's Group in the northeast section of the campus, including a women's dormitory and women's gymnasium.

The section of the campus to the east of Stevens Way is reserved for men's dormitories.

Memorial Way enters from the north as the continuation of University Boulevard.

Since the adoption of the group plan, four buildings have been erected on the Liberal Arts Quadrangle. Locations for two additional buildings are provided to complete this group. The Library building, facing Meany Hall, defines the east line of the Library grouping.

The men's gymnasium and pavilion and the women's gymnasium make ample provision for the physical education requirements of the University.

Physics Hall, the first unit of the Science group, was completed during 1928 and was occupied first at the opening of the autumn quarter. Guggenheim Hall, the second unit, was completed in January, 1930. The third unit, the O. B. Johnson Biological Laboratory, was finished in August, 1930. The four buildings adjacent to the Science group are Hydraulics, Forest Products, Mines Laboratories and Anderson Hall.

BUILDINGS

The buildings now in use on the University 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 Buildings, 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, Parrington Hall, Pharmacy Building, Philosophy Hall, Physics Hall, Power House, Practice Cottage, R.O.T.C. Armory and Headquarters Buildings.

LIBRARY FACILITIES

The general book collection of the University Library has been built to meet the needs of students in all lines of undergraduate instruction. A stock of the more fundamental publications needed in advanced research is quite rapidly accumulating, and special collections are being formed in a few fields. The number of bound volumes is 219,809.

The library is open on week days from 7:50 A.M. to 10 P.M. except on Saturday, when it closes at 5 P.M. The Law School Library containing 53,526 volumes is separately administered by the Law School. These libraries are freely accessible to all who care to use them. In addition to the libraries on the campus, the Seattle Public Library containing 476,327 volumes is also available.

MUSEUM

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

lations. It serves as a state museum in preserving and exhibiting these collections for the public, and as a university museum in providing opportunities for research.

The museum is temporarily housed in the former Washington State building of the Alaska-Yukon-Pacific Exposition. Much of the material bearing on ethnology, mineralogy, conchology, insects and birds is now on exhibition. The staff is actively engaged in expanding the collections, in connection with their research in the various scientific fields.

The collections contain systematic series of birds, marine fauna, minerals, and articles illustrating the life of the Indians of the northwest coast. Other units of the collection represent the Eskimo, Oceanic natives, Chinese, and the archaeology of the Columbia River valley. The reserve or study series includes a herbarium of over 35,000 specimens of northwest flora; collections of birds, eggs, and nests, particularly from Washington; mammalian osteological material; and extensive material relating to North American Indians, especially those of the Northwest.

Research opportunities are provided for university students, and others especially qualified, in the use of collections in anthropology, zoology, botany and geology. Coöperation is maintained with the public school systems and local museums in the state.

HORACE C. HENRY GALLERY

The Horace C. Henry Gallery was completed in December, 1926. This building with its collection of nineteenth century paintings is the gift of the late Horace C. Henry of Seattle.

The collection includes work by two hundred representative painters, which will be invaluable to the College of Fine Arts in the teaching of painting and art appreciation. The United States is represented by such names as Beckwith, Blakelock, Chase, Cox, Guerin, Hassam, Homer, Inness, Martin, Melchers, Murphy, Ranger, Weir, Wyant. French painting is represented by Bonheur, Cazin, Corot, Daubigny, Delacroix, Diaz, Dupre, Jacque, Rousseau, Troyon, and others. Representative work of the schools of England, Spain, Holland, Germany and Sweden is also included. To supplement the permanent collection traveling exhibitions are shown during the college year from October to June.

LABORATORIES

The University of Washington has laboratories fully equipped for work in anatomy, astronomy, botany, chemistry, (including separate laboratories devoted to general chemistry, analytical chemistry, food inspection and analysis, physiological, industrial and pharmaceutical chemistry), geology, psychology, physics and zoology.

ENGINEERING LABORATORIES

Aeronautical Engineering. The new aeronautical laboratories are located in Guggenheim Hall, which is a gift from the Daniel Guggenheim Fund for the Promotion of Aeronautics. They include an aircraft room, containing a variety of engines, wing specimens, fusilage parts and miscellaneous models. A machine shop, wood shop and tool room are especially equipped for aircraft work. Two small wind tunnels are available for student research in aerodynamics. One of these is especially equipped for experiments in propulsion. The four-foot Boeing wind tunnel is housed in a separate building and is used both for experimental and commercial investigations.

A display room houses three airplanes of different types, completely assembled, which have been assigned to the department of aeronautics by the

United States navy. A complete equipment of smaller instruments and apparatus offers special opportunity for research in the various phases of aeronautics.

Chemical Engineering. A modern fire-proof building houses the chemical laboratories. Fully equipped separate laboratories are devoted to general chemistry, analytical chemistry, food inspection and analysis, organic chemistry, physiological chemistry, industrial chemistry, and pharmaceutical chemistry. All laboratories are equipped with hoods with forced drafts, water, gas, distilled water and air pressure. The chemical engineering laboratories are equipped with the fundamental types of apparatus used in manufacturing processes, such as filter press, hydraulic press, stills, grinding apparatus, heating furnaces and vacuo-drying oven. A separate building is used for research in chemical engineering.

Civil Engineering. The *hydraulic laboratory* is housed in a laboratory building adjacent to Lake Union, where facilities are available for both medium and high-head experiments. For medium-head, a free water surface, one acre in extent, is provided 100 feet above the laboratory floor. The high-head supply is furnished by centrifugal pumps having a combined capacity of 2,500 gallons per minute under heads of 0 to 400 feet. The laboratory is equipped for the usual tests of orifices, weirs, flow in pipe lines and open channels, and for testing turbines.

The *materials testing laboratory* contains five universal testing machines with capacities from 30,000 to 300,000 pounds, one beam testing machine, and two impact machines with various hammers ranging in weight from 550 to 1,500 pounds, with the necessary auxiliary apparatus for general materials testing.

The *cement laboratory* is equipped for making all of the ordinary tests on Portland cement as specified by the American Society for Testing Materials.

The *highway laboratory* is equipped for testing materials used in the construction of roads. The machines for the abrasion and toughness test are of the standard designs adopted by the American Society for Testing Materials; other machines are similar to those used by the United States Bureau of Public Roads.

The *sanitary engineering laboratory* is equipped with the apparatus needed for making the routine chemical, bacteriological and microscopic examinations of water and sewage.

The surveying equipment consists of all the necessary instruments for plane and topographic surveying.

Electrical Engineering. The dynamo laboratory contains twenty-seven alternating and forty-five direct current generators and motors. The machines are of modern design and have a combined capacity of 415 kilowatts in direct current machines and 347 kilowatts in alternating current machines. Most of the machines are of five- or ten-kilowatt capacity. The 26 power transformers range in voltage from 110 to 55,000. Power from two storage batteries of 60 cells each is available at a separate switch-board in the dynamo laboratory. The University power house, containing three steam-driven units of 400, 200, and 100 kilowatts, serves as a commercial laboratory for testing purposes.

Ten smaller rooms are used for the following purposes: (a) Instrument calibrating and repairing, (b) laboratory shop and repair room, (c) instrument and stock room, (d) telephone laboratory, (e) electrolysis and special thesis problems, (f) storage battery rooms, (g) dark rooms for photometry work, (h) radio laboratory, (i) transmission line laboratory, (j) transients laboratory. The instrument room contains 364 standard indicating and record-

ing ammeters, voltmeters and wattmeters, four three-element G.E. oscillographs, Dufour Cathoderay oscillograph, General Electric Surge recorder, a G.E. (Tirrel) A.C. regulator, a Fahy fluxometer, a klydonograph, a Tinsley A.C. potentiometer and a large collection of rheostats, tachometers, circuit breakers, instrument transformers and accessory apparatus.

A high-tension laboratory is being equipped and will be available for research and advanced instruction in high-tension phenomena.

Engineering Shops. The shops are organized into three major divisions, viz., foundry, forge and machine. The foundry division is equipped with cupola, electric arc and crucible melting furnaces, together with five types of molding machines and sand conditioning and casting cleaning equipment. Equipment is also available for pattern-making and flask repair. The forge division contains, in addition to the regular forging equipment, four heat treating furnaces, Brinell hardness testing machine, oxy-acetylene welding and cutting equipment and an electric arc welder. The machine division contains a complete range of basic machine tools in which engine lathes predominate. This division maintains a complete tool crib including two sets of standard gages.

Mechanical Engineering. The steam and experimental laboratory is fully equipped with steam apparatus including engines aggregating 1,000 H.P., simple and compound, high speed and Corliss types; steam turbines; jet and surface condensers; injector; centrifugal pumps; steam calorimeters; indicators; calibrating appliances; oil testing machine; gas engines of stationary and automobile types; a semi-Diesel 2-cylinder oil engine; a Diesel 3-cylinder oil engine; Sprague electric dynamometer; Webster radiator testing outfit for vacuum systems of heating; ventilation fan equipment for tests; Nash vacuum pump; equipment for automobile testing; belt and pulley testing machine; gas producer plant; refrigerating apparatus; compressed air machinery for two stage compression and Westinghouse full train equipment; fuel testing facilities, including Maher Bomb, Junkers and other calorimeters, with accessories for determining heating value and analysis of solid, liquid and gaseous fuels.

FISHERIES LABORATORIES

Ichthyology Laboratory. The ichthyology laboratory contains an extensive collection of fishes, particularly rich in species from Puget Sound and Alaska. All necessary equipment is available for the study of the anatomy, embryology, classification, and the study of early and later life histories of fishes.

Much of the instruction in ichthyology is given in the field, necessitating frequent excursions to nearby hatcheries, fishing grounds, oyster beds, and rocky reefs. The varied fishery apparatus used is owned by the department of fisheries. The expense of such excursions is comparatively small.

Fish Diseases Laboratory. The laboratory for fish diseases is fully equipped with hatching troughs, aquaria, and all other essential apparatus for the study of the life histories of parasites of aquatic animals.

Research Laboratories. The research laboratories are equipped with apparatus for carrying on investigations of fishes in histology, embryology, anatomy, physiology, early and later life histories, feeding experiments, and culture. Projection, drawing, and chemical apparatus are available, as well as a fully equipped photographic dark room. The location of the research laboratories, close to both salt and fresh water, adds to the usefulness of the laboratories for carrying on investigations of fishes.

Collection of Fishes. A collection of fishes is being built up for research work only. This collection contains specimens from North America, Europe, Hawaii, and other waters. All species are identified, labeled, and accompanied by scientific data, making the collection invaluable for problems involving raciation, variation, and taxonomy. This collection contains many rare species and records of distribution as well as a few type specimens. It is available to graduates, advanced students, and visiting ichthyologists from other institutions.

FORESTRY AND LUMBERING LABORATORIES

Dendrology. Individual lockers. A large herbarium and extensive collections of tree seeds, cones, bark specimens. An arboretum of 200 acres is under way.

Logging. Logging camps in the vicinity of Seattle afford unequalled opportunities for field work. Collections of logging equipment, such as wire rope, axes, saws, hooks, blocks, special appliances for donkey engines, a working model of a steam yarding engine and models of high lead yarding. A Dolbeer and a single drum donkey engine are installed in the logging engineering laboratory. New material is constantly being added to these collections.

Milling. Field trips to the sawmills in and near Seattle. Extensive collections of lumber showing patterns and grades, shingles, saws, planer knives, belting, chain and other sawmill equipment. Additions to these collections are now being made very rapidly.

Mensuration. Equipment selected to show principal types of instruments in use. Those adapted for use in the northwest are provided in quantities sufficient for all practice work in cruising, surveying, volume, growth and yield studies.

Silviculture. Forests around Seattle offer wide opportunities for practical studies and demonstrations. The extensive forest tree nursery of the College of Forestry affords excellent opportunity for practice in modern nursery methods. A three weeks' trip in the spring quarter of the sophomore year covers principal forest types of the Pacific Coast.

Timber Physics. This laboratory is magnificently equipped with seven large testing machines for static and impact loading, circular and band saws, planer and other shop equipment for wood-working, and forms the first completely equipped unit of the Forest Products Laboratory.

Wood Technology. Individual lockers, gas, water, compound microscopes and all apparatus for preparing and sectioning wood for microscopic study are provided. Hand specimens and planks of domestic and foreign commercial timbers are provided in large quantities. These include extensive collections of South American, Australian, Philippine, Japanese, Indo-Malayan, Indian and other foreign hardwoods. Microscopic slides of nearly all American woods are kept on hand for check specimens.

Forest Products Laboratories. The Forest Products Laboratory will in the future house all research work in forest products, and has been planned with special provisions for an extensive pulp and paper laboratory, a wood preservation laboratory and special laboratories for research in wood technology, pathology, wood chemistry and wood utilization. The laboratories for work in forest products now ready on the campus consist of three distinct units, as follows:

1. General Laboratory. Equipped with special wood sectioning and plain sliding microtomes, binocular research microscopes with me-

chanical stage and microscopes of usual pattern, special illuminating devices for microscopic studies, micro-projection apparatus, water-baths, large and small gas and electric drying ovens, platform scales, analytical and pulp balances, all apparatus necessary for the technical examination of wood preservatives, standardized thermometers, enlarging and reducing camera, standard horizontal photo-micrographic apparatus, dark room, and all incidental apparatus required in the detailed study of woody tissues.

2. Pulp and Paper Laboratory. A 100-pound capacity digester and a beating engine of equivalent capacity are provided for research in the pulping of wood.

3. Plywood Laboratory. Special machines for testing the strength of plywood, a glue mixer, hydraulic press and all apparatus for the detailed study of plywood are provided.

Commercial Plants. Plants for manufacture of paper, wood pipe, cooperage, excelsior, wood conduit, veneers, furniture, boxes, and numerous other secondary wood products are available for study. Four large creosoting plants and several smaller preservative plants are also available.

The Charles Lathrop Pack Forest. This is a tract of approximately 2000 acres located at LaGrande, Washington, adjoining the Rainier National Park highway. The tract is used as an experiment station and as a public demonstration forest, the idea being to place forestry on display in show window fashion so that the public may learn of the various methods of scientific forestry. It is admirably adapted for this purpose, having a frontage of about two miles on the highway and presenting a wide range of conditions.

The tract contains approximately twenty-five million feet of timber. In addition to this there are areas of second-growth forests of varying ages, some logged-off lands, and some burned over areas, making the tract well adapted for experimental and demonstration purposes. The money for the purchase of the forest and for putting it in shape was provided from the Charles Lathrop Pack Forestry Trust and by Doctor Pack himself.

JOURNALISM LABORATORY

The journalism laboratory is equipped with everything necessary to teach students how to dress a newspaper. For students interested in advertising, special equipment is provided. A laboratory library of publications from supply houses is available, containing information on type, paper, engravings and all equipment of the publishing and allied trades.

MINING, METALLURGICAL AND CERAMIC LABORATORIES

The headquarters of the College of Mines are in Mines Laboratory, which has an area of 57 by 162 feet and a height of 58 feet, with four full floors and mezzanine decks. The building is of steel-frame and concrete construction, faced with polychrome face brick, and designed in the Tudor-Gothic style of architecture adopted for the University buildings. A permanent brick store-house built in the same style and measuring 22 by 42 feet, two stories high, stands in the rear of the main building. Mines Laboratory contains the offices, classrooms, laboratories, and library of the departments of mining, metallurgy, and ceramics, and the offices of the Mine Safety Station and the Northwest Experiment Station of the United States Bureau of Mines, which make joint use of the College of Mines equipment. The whole building has service of water under both high and low pressures, hot water, steam, gas, electric current in three forms, and compressed air under

both high and low pressures. An electric freight elevator serves the coal washing laboratory, while the ore dressing laboratory is served by a hydraulic lift.

Mining. The mining equipment may be divided into three groups, as follows: exhibits designed for purposes of study, laboratory apparatus for experiment and practice, and field equipment. Numerous exhibits are on hand, notably a full-size Trenton aerial tramway terminal, several models of mines and mining construction, 1700 lantern slides and portable lantern, several thousand photographs, maps, blue prints, and drawings, sets of mine lamps, and extensive collections of ores and minerals from prominent mining districts.

The drilling equipment consists of single and two-stage Ingersoll-Rand air compressors with receivers, four of the newest types of rock-drills of different makes, two piston drills, column mountings and tripods, a Sullivan power-driven diamond drill complete, an Empire placer drill, sets of drill steel of several sections, forges, sharpening tools, a drill press, grinding wheels, tools and accessories. Practice with the air drills and the diamond drill is had in a special shed built in the form of a mine drift, where deep holes can be drilled in all directions. For studies in mine ventilation, blowers and fans connecting with both metal and canvas pipes are in service; an anemometer, gages, air meter, safety lamps, and the most recent equipment for testing mine gases are provided. A turbinair portable hoist is used for moving heavy apparatus.

The varied deposits of glacial drift on the University campus afford good practice ground; blasting experiments are carried on in the hard morainal clays where results can be clearly seen, and the testing of gold-bearing placer ground is illustrated by boring test-holes with an Empire drill. Practice in methods of saving placer gold is given with standard sluices provided with several forms of riffles; placer gold of various sizes of grain is added to the gravel and its recovery is checked.

Ore Dressing. The new laboratory was designed for testing not only ores but also non-metallic mineral substances, which are of great importance in Washington and the Northwest. The equipment is new and complete. The crushing machinery, placed on the ground floor, consists of a 7x10-inch Blake breaker, a 4x6-inch Dodge, a Traylor gyratory, a pair of 18x10-inch, and a pair of 8x5-inch highspeed Sturtevant rolls, small crushers and disc pulverizers. A hydraulic elevator lifts the crushed ore to the third floor where Locke and shaking feeders start it on its progress through the mill. The grinding mills consist of a 3x2-foot Marcy ballmill, a 2x4-foot and a 1x2-foot Marcy ball or rodmill, a Hardinge 20x5-inch mill, and smaller grinding mills. A Dorr bowl-classifier, a Dorr thickener, an Akins classifier, a Fahrenwald, a Bird, and several Richards classifiers are in service, and four jigs. The concentrating tables include a Wilfley sand-table and a Deister-Overstrom slimer of full size, a Plat-O of half size, and three smaller Wilfleys.

For testing magnetic ores and sands a Dings magnetic separator of Rowland-Wetherill type with both high and low intensity, a Davis tubetester, and an electro-magnet are provided. A 3-stamp battery fed by a challenge feeder delivers pulp to silvered copper plates and a Pierce amalgamator, thence to the concentrating tables. The flotation laboratory contains ten different cells of the most recent types. The screening equipment includes Hummer, Leahy, Newaygo, Ro-Tap, and other types. A Dorrco pump and a Wilfley sand-pump can be used to elevate pulp. Among the items of special equipment are a Chance sand-flotation apparatus, an Oliver filter, and a form of Leitz microscope designed for studying mill products. The accessory equipment such as feeders, launders, samplers, settlers, dry-

ers, scales, and trucks is complete. A Davis magnetic log washer is available for wet magnetic testing. Abundant water is provided in the mill under both high and low heads.

Metallurgy. The fourth floor of the new building is devoted to metallurgy proper. Separate laboratories are provided for general metallurgy, fire assaying, wet analysis, fuels, electrolytic work, research, and metallography, besides the balance rooms, dark room and stock room. The furnaces consist of four standard-size, single-muffle Denver oil burners, also gas-fired, gasoline-fired, and electric muffle furnaces, and a Hoskins 12.5 KW electric melting furnace. Pyrometers and three types of calorimeters are provided. Among the new pieces of special apparatus may be noted a Leitz complete photo-micrographic apparatus, a set of microscopes for metallography, an Orsat gas-analysis apparatus, Parr's total-carbon apparatus for coal, Brinnell and scleroscope machines for testing hardness. Four large models of reverberatory furnaces, donated by the American Smelting and Refining Company, are used for purposes of instruction, the models being made with removable parts.

Coal Washing. The coal section of Mines Laboratory occupies an area of 54x57 feet and a height of 58 feet, including four stories and a sub-basement, connected by electric elevator. Coal for testing is received on the ground floor, in lots up to thirty tons, and is screened to remove large sizes. Smaller sizes pass into a concrete bin from which they are drawn to a bucket elevator for transportation to screens on the fourth floor, the screened products falling into bins on the third floor. From the bins, gravity flow delivers the screened sizes to the second floor, where classifiers, jigs, tables, and other forms of washing equipment are located. Products from these machines may flow to a sludge tank on the lower floor for settling and dewatering. An Arms pneumatic table fully equipped with blower and suction fan is provided for dry-cleaning.

The building also contains fuel and analytical laboratories for the College of Mines and the U.S. Bureau of Mines, a room for conducting float-and-sink tests, a sampling room, a coal crushing and grinding room for the preparation of samples, a large sludge tank with automatic rakes, and two compressors, each two-stage, which supply air for the whole building.

Ceramics. The ceramics equipment, offices and class rooms are housed in Mines Laboratory. The apparatus may be used for washing, purifying, and preparing ceramic and non-metallic raw materials, and for manufacturing and testing ceramic products. The heavy-clay-product equipment consists of a 4-foot Crossley dry and wet pan, two Mueller auger machines with cutting tables, an American dry press and a roofing-tile press. Pottery machinery includes a clay-washing outfit with blunger, settling and concentrating tanks, screens, filter press, rotary-spray evaporator and electrophoresis machine for dewatering, dryers, auger machine, jolly wheel, throwing wheel, small hand press for electrical insulators, plaster molds for jollying and casting ware. The terra cotta equipment consists of pressing molds, a De Vilbiss spraying apparatus, engobe and glaze materials, humidity dryer and glaze-grinding pebble mills. Firing apparatus include an oxygen-acetylene cone-fusion furnace, a high-temperature, load-test kiln, a 10x7-foot downdraft open kiln, an electrically heated Hoskins furnace with automatic temperature control, and two smaller oil-fired kilns. The kilns are equipped with thermo-couple, radiation and optical pyrometers, Orton cones for temperature measurements, and with a Brown, recording carbon-dioxide apparatus. Other equipment consists of strength, volume, and absorption apparatus for testing clays; apparatus for colorimetric and electrical hydrogen-ion determination; an autoclave for high pressure testing, a petrographic microscope, and samples of products and materials from all parts of the country.

PHARMACY, MATERIA MEDICA AND CHEMISTRY LABORATORIES

Rooms devoted to pharmacy, materia medica and chemistry are located in Bagley Hall, a three-story fireproof building, and in the Pharmacy Annex. Special sections are provided for pharmacy students in general, organic and qualitative chemistry. Work in prescription practice receives special attention in the Pharmacy Annex. This building contains one large room arranged and equipped as a model prescription pharmacy; a second but smaller room equipped with optimum fixtures donated by Stewart and Holmes Drug Company, arranged and equipped as a sales room. The prescription room contains displays of pharmaceuticals from many of the leading pharmaceutical houses.

PHYSICS LABORATORIES

In addition to its general laboratories the department of physics is rapidly equipping the Bureau of Testing to meet the demands for accurate calibration and testing of scientific instruments. Standards of the bureau will be calibrated by the National Bureau of Standards at Washington, D.C. The bureau is prepared to calibrate direct and alternating current instruments, determine candle power of lamps, measure temperature, both high and low, and to a limited extent, to standardize weights. Persons desiring to have work done should address the director.

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 headquarters of the station, from which all operations in this territory are directed, are in Mines Laboratory. At present the principal investigations being conducted by the station are in the treatment and uses of coal and of other non-metallic substances. A staff of technical experts carries on the research program in co-operation with members of the faculty of the College of Mines and holders of graduate fellowships.

Mine Safety Station. The Mine Safety Station of the United States Bureau of Mines is housed in a separate building located near Mines Laboratory. The purposes of the station are to train miners, firemen, mining students in the University, and others in the use of oxygen helmets and other forms of apparatus, in rescue methods, and in safety principles; also to give emergency aid in cases of fires, explosions, or accidents at mines or elsewhere. First-aid instruction is also given. For these purposes a complete equipment of various types of oxygen rescue and resuscitation apparatus is kept on hand for practice as well as for use in mine rescue work. Training is carried on in the University and in the field. 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 at the University is carried on in a room filled with gas which cannot be breathed without immediate danger, 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 cartrack, overcast, timbers and brick. 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 in readiness for emergency calls, forms part of the equipment of the Safety Station.

ENGINEERING EXPERIMENT STATION

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

The scope of the work is two-fold:

(a) 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.

(b) To undertake extended research and to publish reports on engineering and scientific problems.

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 solution of engineering problems. Every effort will be made to co-operate effectively with professional engineers and the industrial organizations of 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.

The control of the Engineering Experiment Station is vested in an administrative staff consisting of the president of the University, the director, and eight members of the faculty.

For administrative purposes, the work of the station is organized into eight divisions: (1) forest products, (2) mining and metallurgy, (3) aeronautical engineering, (4) chemical engineering and industrial chemistry, (5) civil engineering, (6) electrical engineering, (7) mechanical engineering, (8) physics standards and tests. Inquiries in regard to the work of the Experiment Station should be addressed to the director.

BAILEY AND BABETTE GATZERT FOUNDATION FOR CHILD WELFARE

On December 21, 1910, this foundation was established by a gift to the University of \$30,000 made by Sigmund Schwabacher and by the executor of the will of the late Abraham Schwabacher. The purpose of the foundation is (1) to conduct a laboratory for the mental and physical examination of children in order to determine their individual defects and aptitudes and, in accordance with the results of the examination, to suggest the best means of education and treatment; (2) to assist in establishing child welfare agencies and child study laboratories throughout the state, and (3) to carry on research in child psychology.

In December, 1915, the Department of Child Welfare was established and the Gatzert Foundation was placed under its administrative control.

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 the standard of approved law schools for admission to the bar of this state. For admission the student must have junior standing from the College of Liberal Arts or the College of Science, or its equivalent. The curriculum of the school covers nine quarters, leading to the degree of bachelor of laws. The degree of master of arts also is given. Students may carry on work in liberal arts or science and law concurrently, taking both bachelors' degrees in six years, or 18 quarters. Beginning with the academic year 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 engineering, geology and mining, metallurgical engineering, coal mining 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. The University is placing increased emphasis upon its graduate 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 nursing and public health 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. This flexible plan is of especial advantage to the University of Washington because the absence of extremes in climatic conditions is favorable to mental work at all times of the year.

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. 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, 1931, 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 twelve years of instruction may be held for additional high school work.

ENTRANCE REQUIREMENTS

1. Units Required. A student having graduated from an accredited high school, is required to present twelve *units of work done entirely in the 10th, 11th and 12th grades. Of the twelve units, not more than four may be in courses primarily designed for ninth grade students. The twelve units shall be distributed as follows:

(a) Not more than four units in non-academic subjects (except for the College of Business Administration, as noted below).

(b) At least eight units from academic groups (English, mathematics, natural science, social science, foreign language) so chosen as to include two units of English. (For the exception in the case of the College of Business Administration, see below.) Less than one unit will not be counted in physics, chemistry or a foreign language.

(c) The specific requirements of the college to which admission is sought, must be met. These are as follows:

LIBERAL ARTS: A second unit† of one foreign language, and one unit of geometry.

SCIENCE: A second unit of one foreign language, and one unit of geometry.

BUS. ADMIN.: One unit of plane geometry or advanced algebra. A maximum of six non-academic units may be offered, but if more than four are offered, at least three must be in commercial subjects.

ENGINEERING: Solid geometry, advanced algebra, one unit of physics, and one unit of plane geometry.

FINE ARTS: Two units of foreign language, one of which may be taken in the ninth grade; for architecture, one unit of plane geometry, in addition to the language requirement.

FORESTRY: Advanced algebra, one unit of plane geometry.

MINES: One unit of plane geometry, solid geometry, advanced algebra, and one unit of physics.

PHARMACY: No specific requirements.

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.

*A "unit" is applied to work taken in the high school. 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.

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

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

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.

2. *Scholarship Required.* A minimum of eleven units 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.

3. *Recommending Grades.* 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.

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 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 117 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 private fitting 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 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, beginning with the autumn quarter of 1933, 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 one year's record in the college, 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. 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, covering all prescriptions for admission to upper division standing in the College of Liberal Arts, and ten 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 ten 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 10 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 145 credits, including 10 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 180 plus 10 credits required 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 B.A. and B.S. degrees and satisfy the requirements in French and German.

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 duplicate in the registrar's office.

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 bulletin.

ADMISSION BY EXAMINATION

1. Certificates 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 College Entrance Board 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.

COLLEGE ENTRANCE EXAMINATION BOARD

Examinations of June 15-20, 1931

The College Entrance Examination Board will hold examinations in June, 1931, at nearly 400 points in the United States and abroad.

A list of places at which examinations will be held is published about March 1. 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.

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 City. 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, 1931, 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 25, 1931

In the United States west of the Mississippi River or in
Canada..... May 18, 1931

Outside of the United States and Canada, except in Asia.. May 4, 1931

In China or elsewhere in the Orient..... April 20, 1931

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 to all examinations except the scholastic aptitude test 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, to learn their examination numbers, 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. An examination will close for candidates admitted late at the same time as for other candidates. The examinations will be held in accordance with the time, standard time, or daylight saving time, observed in the local schools.

No candidate will be admitted to the scholastic aptitude test late, that is, after 9:00 a.m.

The scholastic aptitude test, which will be held on the morning of Saturday, June 20, 1931, may be taken upon the completion of the school course or at the end of the third year of secondary school work. Each candidate desiring to take this test, even though he is to take no other examination, must file with the secretary of the College Entrance Examination Board the usual application for examination. Application blanks will be sent to any teacher or candidate upon request by mail to the board. If the scholastic aptitude test is taken in connection with other examinations no additional fee is required; if taken alone the fee is \$10.

A week or more in advance of the scholastic aptitude test each candidate who is to take the test will receive a booklet containing, with explanations and instructions, a specimen test, the blank spaces of which are to be filled in by the candidate. In order to secure admission to the test the candidate must present not only his ticket of admission but also this booklet with the spaces filled in as requested. The supervisor will admit no candidate to the examination room without this booklet.

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. An examination will be required by the registrar on these supplementary points.

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.

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.

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.

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 \$10 a 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.

REGISTRATION

Registration for all students for the autumn quarter will take place prior to Monday, September 28, at 4:30 p.m.; for the winter quarter, prior to Saturday, January 2, 1932, at 12 m.; for the spring quarter, prior to Saturday, March 26, 1932, at 12 m.; and for the summer quarter, prior to Tuesday, June 14, 1932.

Registration is complete when the election blank has been signed by all required registering officers and the student, when all required fees have been paid, and when all blanks have been left in the registrar's office or other place designated by the registrar. 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 noted above. 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 during the first week of instruction. After the first week no student will be permitted to register 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.)

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

A student desiring to change his registration shall secure a change of registration card from his registering office.

He shall satisfy his dean as to the reasons for the change.

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, showing receipt for his tuition and fees at this time.

He shall pay a fee of \$1 at the comptroller's office for each change made and get a receipt for same. One change may be considered the withdrawal from or addition of one course at one time. No fee is charged when the change is made on the initiative of the University authorities.

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 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.

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 training), 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 students entering the University for the first time are required to pass a medical examination as a part of their 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.

A student failing to take the test at either date specified during his first quarter in residence shall be refused admission for the following quarter.

EXPENSES

Tuition and Fees. By authority of the Legislature of the State of Washington, Chapter 48 Session Laws of 1931, the following tuitions and fees will be collected:

GENERAL TUITION FEES

Resident Tuition. A general tuition fee of fifteen dollars (\$15) per quarter from each person domiciled in this state or the Territory of Alaska, for the period of one year prior to registration; *provided*, that the children of persons engaged in the military, naval, lighthouse or national park service of the United States within the State of Washington, shall be considered as domiciled within the meaning of this section, and not subject to the time limit of such domicile.

Non-Resident Tuition. Fifty dollars (\$50) tuition per regular academic quarter from each student who has not been domiciled in the State of Washington or the Territory of Alaska for the 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 legal principles governing this question of resident or 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, until changed by a duly appointed legal guardian.

Non-resident status is determined from information furnished upon the entrance application. Appeal from non-residence status, so determined, may be made to the authority duly appointed by the board of regents.

Exemptions. All honorably discharged service men or women who served in the military or naval service of the United States during the late world war; and all honorably discharged service men who served in the military or naval services of any of the governments associated with the United States during the said war, provided they were citizens of the United States at the time of their enlistment and who are again citizens at the time of their registration in the University may on application and showing that such fee will be an individual expense be exempted from the payment of general tuition fee provided they have been domiciled in the State of Washington or Territory of Alaska for the period of one year prior to the date of registration. If any such service men have not been domiciled in the State of Washington or Territory of Alaska for one year prior to registration they are exempt up to twenty-five dollars (\$25) per quarter. This exemption does not apply to the summer quarter.

Tuition Notes. Deserving students (domiciled in the state of Washington or the territory of Alaska) who, after a quarter in residence have shown a marked capacity for the work done by them in school, in lieu of paying the general tuition fee, above provided for, may give their promissory notes with interest at the rate of four per cent per annum. All applications for this concession must be presented at the comptroller's office accompanied by a statement from the registrar's office of their grades for the past quarter.

ADDITIONAL FEES PAYABLE BY ALL STUDENTS

Associated Students Fee. An associated student membership fee of ten dollars (\$10) for the year (exclusive of summer quarter) is collected of all regularly enrolled undergraduate students upon registration. This fee is optional with graduate students, part-time students and cadet teachers. The A.S.U.W. fee for the summer session registration is \$1 for all registered students. This does not include auditors.

Incidental Fee. Five dollars (\$5.00) a quarter (except in summer quarter) incidental fee from each regularly enrolled student, special student, part-time student and auditor. Each regularly enrolled student in the law school will pay a fee of five dollars (\$5.00) in addition to the said general incidental fee, making a total incidental fee of ten dollars (\$10.00) for each regularly enrolled student in the law school.

Health Service Fee. One dollar (\$1.00) per quarter (except in summer quarter) from each student except full-time instructors or cadet teachers.

Library Fee. One dollar (\$1.00) per quarter (except in summer quarter) from each student except full-time instructors or cadet teachers.

FEES PER QUARTER FOR VARIOUS TYPES OF REGISTRATION :

Full Time Resident. Tuition \$15, A.S.U.W. \$10 (per year), incidental fee \$5, library \$1, health service \$1, laboratory fees depending upon courses taken.

Full Time Non-Resident. Tuition \$50, A.S.U.W. \$10 (per year), incidental fee \$5, library \$1, health service \$1, laboratory fees depending upon courses taken.

Part Time Resident. (Courses not exceeding 6-hour load; non-credit courses count as part of load.) Tuition \$10, A.S.U.W. \$10 (per year) optional with student, incidental fee \$5, library \$1, health service \$1, laboratory fees depending upon courses taken.

Part Time Non-Resident. (Courses not exceeding 6-hour load; non-credit courses count as part of load.) Tuition \$25, A.S.U.W. \$10 (per year) optional with student, incidental fee \$5, library \$1, health service \$1, laboratory fees depending upon courses taken.

Graduate Students. The fees are the same as for undergraduate students, with the exception that graduate students have the option of A.S.U.W. membership at \$10 per year, except in summer quarter when they pay regular fees including \$1 for A.S.U.W.

Auditors. Tuition \$10, no A.S.U.W. membership, incidental fee, \$5, library \$1, health service \$1, no laboratory fees. For auditors the regular summer quarter fee applies. This does not include A.S.U.W. membership.

Cadet Teachers. No tuition, A.S.U.W. optional, no incidental fee, no library, no health service fee, but laboratory fees depending upon courses taken.

Part Time Instructors and Graduate Readers. Tuition \$1 per credit hour, A.S.U.W. \$10 (per year) optional, library \$1, health service \$1, laboratory fees depending upon courses taken.

Full Time Instructors. No tuition, A.S.U.W. optional, no library, no health service fee, but laboratory fees depending upon courses taken.

Summer Quarter. Tuition \$25, A.S.U.W. \$1, no incidental fee, no library, no health service fee, but laboratory fees depending upon courses taken. This includes graduate students.

Oceanographic Laboratory at Friday Harbor. Tuition \$20, laboratory \$5.

Nurses' Short Course. Tuition \$20, no A.S.U.W., no incidental fee, no library fee, no health service fee, laboratory fees for courses taken.

Nurses' Four-Year Curriculum. This course is for nurses in residence at Harborview Hospital. Tuition \$5.00, no A.S.U.W., no incidental fee, no library fee, no health service fee.

All Other Short Courses. Tuition \$20, no other fees.

Law School Students. Special law library fee of \$10 from each student registering in law is charged in addition to regular general tuition, A.S.U.W., incidental fee, and infirmary fees. The regular \$1 fee for general library is omitted. Students other than majors in law taking work in the School of Law will pay \$1 for each credit hour of law work elected up to a maximum of \$10 per quarter. This will be in addition to the regular \$1 general library fee.

Ex-Service Men:

Full Time Resident. No tuition, no incidental fee, A.S.U.W. \$10 (per year), library \$1, health service \$1, laboratory fees depending upon courses taken.

Full Time Non-Resident. Tuition \$25, no incidental fee, A.S.U.W. \$10 (per year), library \$1, health service \$1, laboratory fees depending upon courses taken.

Part Time. No tuition, A.S.U.W. optional, library \$1, health service \$1, laboratory fees depending upon courses taken.

PAYMENT OF FEES:

Fees may be paid by mail or in person at any time after registration but must, in any event, be paid by the date indicated on the fee statement and the announcements of the comptroller's office. Failure to observe this requirement will automatically cancel the student's registration and necessitate re-establishment of sections at the registrar's office. Payment of a late registration fee of \$2 for the first day, and \$1 per day additional thereafter up to a maximum of \$7 will be made for all re-registrations. If fees are paid by mail, put fee statement number on remittance, make remittance for full amount of statement payable to the University of Washington, and mail to the comptroller's office. Checks must be mailed in time to reach the comptroller's office on or before the last day for payment.

REFUND OF FEES:

General Tuition. One-half of the general tuition may be refunded within the first thirty days after the first day of instruction if withdrawal is caused by conditions beyond control of the student. *Upon reduction of schedule from full-time to part-time, one-half the difference between the tuition rate for full-time and that for part-time may be refunded within the first thirty days after the first day of instruction, but nothing thereafter.*

Incidental Fee. One-half of the incidental fee may be refunded within the first thirty days after first day of instruction, if withdrawal is caused by conditions beyond control of student.

Laboratory Fees. All of the laboratory fees may be refunded up to fifteen days after first day of instruction and one-half refunded between fifteen and thirty days after first day of instruction. Refunds during the first two weeks of the quarter must be authorized by department heads in the departments of anatomy, chemistry, home economics, pharmacy, and physics. Refunds in music at option of instructors.

Library Fee and Health Service Fee. All of these fees may be refunded up to fifteen days, and one-half between fifteen and thirty days after the first day of instruction.

Low Library Fee. Same as general tuition.

A.S.U.W. Fee. All students withdrawing must turn in their A.S.U.W. tickets at the A.S.U.W. office for refund.

FINANCIAL DELINQUENCIES:

Promptness on the part of students in the adjustment of financial delinquencies to the University is insisted upon. The University reserves the right to exclude from classes students who fail to report to the comptroller's office when requested to do so.

LABORATORY FEES AND DEPOSITS

The following laboratory fees and deposits will be collected quarterly during the ensuing year 1931-1932. With few exceptions, these fees are not returnable in whole or in part, and in no case can any rebate be allowed after 30 days from the first day of the quarter: (Fees and deposits listed below

apply individually to each numbered course as segregated under the various subjects).

Aeronautical Engineering—101	\$2.00
Anatomy—25, 110, 111, 112.....	1.00
101, 102, 103, 104, 105, 106, 107, 108.....	3.00
Architecture—40, 41, 42, 112, 113.....	1.00
All architectural design courses, as 54, 55, 56, 104, 105, 106, 107, 154 155, 156, 157, 160, 161, 162, for the year.....	7.50
Bacteriology—103	1.00
107	2.00
101, 102	5.00
104, 105, 106, 110, 111, 112.....	6.00
Botany—1, 2, 3, 11, 13, 14, 90, 104, 111, 199, 233, 271, 272, 273.....	2.00
92, 105, 106, 107, 115, 116, 117, 119, 129, 130, 140, 141, 142, 143, 144, 145, 180, 181, 182, 220, 247, 250, 251, 279, 280, 281.....	3.00
Ceramics—110	5.00
121, 122, 123.....	10.00
Chemistry—1, 2, 7, 8, 9, 10, 21, 22, 23, 37, 38, 39, 101, 109, 110, 111, 121, 122, 123, 128, 129, 131, 132, 133, 135, 136, 144, 161, 162, 171, 172, 181, 182, 183.....	6.50
45, 55, 56, 104, 118, 119, 140, 141, 150, 156, 163, 166, 176, 177, 178, 195, 205, 206, 207, 211, 212, 224, 225, 226, 227, 228, 230, 236, 250 per credit hour.....	1.00
Breakage Ticket	5.00
Civil Engineering—53, 54, 55, 56, 57, 59, 142, 143, 158, 162, 163, 171....	2.00
150	3.00
Drama—51, 52, 53, 121, 122, 123.....	1.00
114, 115, 116.....	2.00
104, 105, 106.....	3.00
Economics and Business Administration—1, 2, 7, 62, 63, 64, 137, 138, 139. .50	
117, 118	10.00
Education—All courses except those listed below.....	.50
60, 62	1.00
290	1.50
90, 191	3.00
71	4.00
Electrical Engineering—104, 124, 132, 141, 181, 183, 196, 198.....	2.00
102, 110, 112, 122, 162, 164.....	4.00
Engineering Shops—54, 55, 105, 106, 107.....	2.00
53, 104	3.00
English—Speech—41, 43, 47, 48, 187, 188.....	.50
214, 215, 216.....	1.00
Fisheries—101, 102, 103, 105, 106, 107, 125, 126, 127, 154, 157, 158, 159..	4.00
165, 166, 167, 201, 202, 203, per credit hour.....	1.00
Forestry—1a, 1b, 1c.....	.50
10-11, 60, 61, 123.....	1.00
104, 140, 190.....	2.00
187, 188, 189, 196, 197.....	3.00
62	4.00
160, 161, 162, 213, 214, 215....Fees arranged according to material required	

General Engineering—1, 7.....	1.00
21	2.00
Geography—1, 11, 101, 103, 104, 111.....	1.00
Geology—1	1.00
5, 6, 7, 105, 106, 107, 113, 121, 123, 124, 125, 130, 132.....	2.00
126, per credit hour.....	1.00
Home Economics—25, 26, 45, 46, 101, 102, 113, 114, 190.....	2.00
47, 119, 121, 133, 160, 161, 188, 191.....	3.00
116, 200	4.00
9, 105, 106, 107, 108, 117, 120.....	6.00
112 (3 hours credit).....	2.00
112 (5 hours credit).....	3.00
115 (3 hours credit).....	2.00
115 (5 hours credit).....	6.00
207, 208, 209, per credit hour.....	1.00
204, 205, 206, per credit hour.....	2.00
Journalism—1, 2, 61, 90, 91, 92, 135, 145.....	1.00
3, 51, 101, 120, 125, 130, 131, 133, 136, 138, 140, 142, 150, 225, 226, 227.....	2.00
171, 172, 173, 174, 175, 195, 196, 197.....	4.00
(Maximum fee for any one student \$4 a quarter.)	
Law—Students registered in Law School, maximum of.....	10.00
Students in other colleges, per credit hour.....	1.00
Library Science—Text book fee, one or more courses per quarter.....	1.50
Mathematics—13	1.00
Mechanical Engineering—83, 151, 152, 153, 167.....	2.00
Metallurgy—103, 163	5.00
102	10.00
153, 160	12.00
101	20.00
Military Science—Each first and second year course.....	.25
Mining—101, 151, 191, 192, 193, 194.....	5.00
152, 176	10.00
Music, 10, 11, 25, 26, 28, 29, 40, 41, 42, 65, 66, 140, 141, 142.....	1.00
1, 2, 3, 7, 8, 9, 18, 19, 20, 68, 69, 70, 118, 119, 120, 168, 169, 170 as listed below:	
Oliver (One lesson a week).....	18.00
Venino, Van Ogle, Bogardus, Lawrence, Rosen, Wood, Kirchner (One lesson a week).....	25.00
McCreery, Anderson, Welke (One lesson a week).....	20.00
Piano Practice Room. An hour a day for a quarter.....	3.00
Key Deposit	1.00
Organ Practice Room. An hour a day for a quarter.....	12.50
Key Deposit	1.00
Violin Practice Room	1.50
Nursing—5	1.00
50	2.00
Painting, Sculpture and Design—105, 106, 163, 164, 165.....	.50
5, 6, 7, 9, 10, 11, 56, 57, 58, 62, 65, 66, 67, 101, 102, 129, 136, 137, 138, 151, 152, 166, 167, 169, 170, 171, 179, 180, 181, 263, 264, 265...	1.00

32, 33, 34, 53, 54, 55, 80, 81, 82, 110, 111, 112, 157, 158, 159, 172, 173, 174	2.00
107, 108, 109, 160, 161, 162, 175, 176, 177, 207, 208, 209, 260, 261, 262..	3.00
72, 73, 74, 103, 104, 122, 123, 124, 130, 132, 133, 134.....	4.00
Pharmacy—1, 2, 3, 7, 8, 9, 10, 11, 104, 105.....	3.00
1 combined with Chemistry 8.....	7.50
2 combined with Chemistry 9.....	7.50
3 combined with Chemistry 10.....	7.50
5 combined with Chemistry 37.....	7.50
6 combined with Chemistry 38.....	7.50
7 and 8 combined with Chemistry 39.....	7.50
5, 6, 113, 114, 115, 195, 196, 197.....	6.50
191, 192, 193, 201, 202, 203, 204, 205, per credit hour.....	1.00
Breakage Ticket	5.00
Physical Education for Men—For each P.E. (Men) class except those listed below.....	.50
80, 90, 115, 135, 136, 145.....	No Fee
175	1.50
Locker fee per quarter (where needed).....	1.00
Physical Education for Women—Each P.E. (Women) activity class or combination of P.E. activity classes (not including courses numbered 200 or over), other than those listed below.....	1.50
95, 96, 97	1.00
87, 88	3.50
94, 98	12.00
4-5, 6-7, 8-9 (Lecture courses).....	1.00
10 (Lecture course).....	1.50
100, 101, 102, 111, 112, 113, 122, 131, 132, 133, 134, 152, 153, 162, 163, 164, 181 .....	.50
Physics—1, 2, 3, 4, 5, 6, 50, 51, 89, 90, 97, 98, 99, 105, 113.....	2.50
54, 109, 154, 160, 195, 196.....	4.00
(Architecture majors taking Physics 1 or 4, 4 hours credit).....	No fee
Psychology—1	1.50
Sociology—55, 62, 142.....	2.00
Zoology and Physiology—20.....	1.50
1, 2, 3, 4, 5, 50, 101, 102, 106, 107, 108, 111, 112, 121, 155, 156, 157... 6, 7	2.00
125, 126, 127, 128.....	3.00
53, 54, 115, 163.....	3.50
151, 152, 153.....	4.00
201, 202, 203, per credit hour.....	5.00
213, 214, 215 .....	.50
	3.00

OTHER CHARGES

Changes of Registration. A fee of \$1 will be charged for changes in courses, including additions or withdrawal from individual courses after completion of registration. This fee is assessed by the registrar and collected by the comptroller.

Late Registration. A fine of \$2 for the first day's delay in registering and \$1 per day additional thereafter up to the close of the week during which registration is permitted is imposed upon all undergraduate students. This fine is imposed for re-establishment of sections when cancelled for non-pay-

ment of fees. This fee is assessed by the registrar and collected by the comptroller.

Special Examinations. A fee of \$1 per course will be charged for all examinations outside the regular schedule. This also applies to the examination for foreign language sight-reading required of all liberal arts students before graduation.

Grade Book Fee. One grade book is furnished the student without charge; a fee of \$.50 is charged for each additional book.

Graduation Fee. Each graduate receiving a baccalaureate or higher degree, or a diploma in pharmacy is required to pay a diploma fee of \$5. The fee for a five year normal or life diploma is \$2.50. The fee for other professional certificates is \$1. The teacher's diploma fee does not include the legal registration fee of \$1 paid to the county school superintendent who first registers a teacher's diploma or the Bureau of Appointments registration fee of \$2.50.

Transcript Fee. One transcript of record is furnished the student without charge; a fee of \$1 is charged for each additional transcript.

Locker Fee. (Men). A fee of \$1 per quarter is payable when registering by all men taking physical education courses requiring lockers. Lockers may be obtained by faculty members and students not registering for physical education at \$1 per quarter. Locker tickets must be obtained at comptroller's office.

Military Uniform Deposits. 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 approximately \$25, the uniform being the property of the student. The Government pays commutation to the students at the rate of \$10 for each of the first two required years of drill. Advanced students purchase a new uniform and are allowed \$30 the first advanced year and \$10 the second.

In the naval unit no uniform deposit is required. The uniform is furnished by the Government and remains 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 upon graduation.

BOARD AND ROOM

The University dormitories consist of Lewis Hall and Clark Hall for women, and Lander Hall for men. During the ensuing year \$32 a month will be charged for room and board at Lewis Hall and Clark Hall and \$37.50 a month at Lander 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. In the residence halls located on the campus, an additional five dollar (\$5) damage deposit is required. This is refunded at the termination of residence, provided the students have taken normal care of the buildings and equipment.

All remittances should be made in favor of the University of Washington and addressed to the Comptroller 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 \$38 to \$45 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 increase 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 two dollars a day is made. It has been determined over a number of years that the average duration of a student's illness is four and one-half days at any one time. Students confined to the infirmary are permitted to ask for the services of any licensed medical practitioner at their own expense.

Patients with scarlet fever or small pox are removed to Firlands Sanatorium and are cared for by the City of Seattle, free of charge.

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. Outside calls by Health Service physicians, except in emergencies, are discouraged. When an outside call is inevitable a charge of one dollar for each call is made.

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 afield 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 84).

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 regu-

lar 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.

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 cooperative 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 twelve 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 eleven months to the testing of textiles for the Bon Marche.

The Skagit Valley Goldenseal Farm Fellowship in Pharmacy. A research fellowship of \$500 is offered annually to a graduate student in drug plant cultivation.

Nakata Research Fellowship in Oriental Studies. Through the generosity of a public-spirited resident of Seattle, Mr. M. Nakata, an annual fellowship of \$300 is available for a graduate student in the department of Oriental studies who is a candidate for an advanced degree and is preparing for teaching or research on the Orient or for other professional activity in which knowledge of that field is useful. Graduates of recognized colleges or universities are eligible. For further information application should be made to the Dean of the Graduate School.

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.

Carl Schurz Memorial Fellowship. A fellowship of \$600 is offered by the Seattle Henry L. Yessler Unit of the Steuben Society of America, and is awarded on the basis of scholastic excellence and general merit, but only

to those who need financial assistance. Application for the fellowship should be made on blanks supplied by the Dean of the Graduate School, and submitted to the Chairman of the Department of Germanic Languages and Literature at the University of Washington by March 15 of the academic year preceding the year for which the fellowship is to be granted.

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.

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. Applications 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 Phi Mu Gamma Scholarship. Zeta Chapter of Phi Mu Gamma offers a scholarship of \$100 annually to that man or woman in the department of dramatic art who most nearly fulfills the following conditions: high scholarship at the end of the junior year, strength of personality, activity in campus affairs, and financial need.

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.

Phi Sigma Biological Research Award. Psi Chapter of Phi Sigma, national biological society, offers annually an award of \$50 to an outstanding student in biology, the award to be used to facilitate research or publications.

HONOR AWARDS AND SENIOR SCHOLARS

RULE 15. (a) Students of the Colleges of Liberal Arts, Science, Fine Arts, Business Administration, and of the School of Education and Library School 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. Senior scholars shall be elected by the faculty, upon recommendation of the Committee on Honors, in the June preceding their senior year and their election shall be announced at Commencement and published in the catalogue. Ordinarily the number of scholars shall not exceed ten per cent of the class. Students of the above mentioned colleges, who, in the course of their senior year, show fitness therefor may be recommended and elected to 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.

PRIZES

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 American Institute of Architects Prize. The American Institute of Architects offers annually a silver medal and a book to the graduating senior with the most distinguished record in design for the entire course.

The Frank Buty Prize. The Frank Buty prize of \$20 is offered annually for the best essay on some subject related to the Italian Language and Literature.

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 A. Merlino Prize. The A. Merlino Prize of \$25 is offered annually to the student in the College of Science who writes the best essay on "An Italian Scientific Advancement During the Year."

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 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 Helen Boetskes Prize in German. In memory of her mother, Miss Ottilie G. Boetzkes offers an annual prize of \$50 to the student in the department of Germanic Languages and Literature who writes the best essay in German on some phase of the German novel.

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 or the dean of women for full information.

STUDENT WELFARE AND VOCATIONAL GUIDANCE

DEAN OF MEN AND PERSONNEL OFFICERS

The dean of men and the personnel officers are concerned with the welfare of the men students of the University. They confer with them on all questions affecting their personal or group interests and hold consultation with them concerning scholastic work, schedules and vocational guidance.

Employment information is given students seeking part-time work.

General housing conditions are under the direction of the Faculty Committee on Student Welfare. A list of boarding places for men, however, is kept in this office.

This office is represented on various faculty committees.

DEAN OF WOMEN

The dean of women is always ready to help or advise any woman student who may need assistance. She supplies lists of approved boarding and lodging places, supervises all houses of residence, corresponds with parents or guardians who desire to make inquiry concerning their daughters or wards, gives advice regarding courses of study, offers vocational information of a general nature, handles loan funds, and acts as counselor to the officers of organizations for women.

STUDENT EMPLOYMENT

Many students who find it necessary to support themselves in part or wholly at the University have been enabled to do so through an employment bureau for men conducted by the University Y.M.C.A. and by aid of the dean of men and the personnel officers. The dean of women renders a similar service for women.

It is necessary to advise against entering the University without funds. The University cannot be responsible for finding work for students. 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 to maintain himself for a quarter. A suggested amount for this purpose is \$200. Students expecting to earn a portion of their support should not register for a full schedule.

BUREAU OF APPOINTMENTS

The Bureau of Appointments, 250 Education Hall, is maintained primarily to assist students and graduates of the University to obtain employment in educational work. The bureau tries to secure and keep on file a complete record of the education, experience and personal qualifications of each applicant for a position in educational work, to be used by prospective employers in determining whether or not the applicant is qualified for the position to be filled. The University reserves the right of refusing to extend its co-operation to applicants who apply for positions for which they are manifestly unfit.

The University makes no charge for the service it renders its graduates in securing employment for them, but there are certain incidental expenses incurred in their behalf for which the student is responsible. Recommendations must be gathered and copies made ready and sent to employers. For this reason each candidate must deposit with the comptroller of the University, *at the time of his registration or re-registration*, the sum of \$2.50. If the total charges for copying transcripts exceed the deposit of \$2.50, which covers the cost of five transcripts, an additional bill of fifty cents for each transcript, to be paid in advance, will be sent to the candidate. Fifty cents for each

transcript, to be paid in advance, will be charged candidates who are not on the active file but are applying independently for positions in the field.

Experienced teachers who desire the aid of the bureau should re-register before February. Registration after February, though permissible, seriously interferes with placement. Registration will expire February first of each year. It will be necessary for candidates to re-register if they wish to have their names on file for a longer period. The responsibility of renewing registration and compiling an accurate record of his training is placed upon the applicant.

Transcripts are seldom required when opportunities in commercial and industrial fields are referred to the Bureau of Appointments. For this reason there is no charge at present in connection with the registration of candidates who have prepared themselves in these fields.

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 annual fee is \$10. (\$1 for summer quarter.)

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.

Christian Associations. The University of Washington Young Men's Christian Association is a Christian service organization, designed to be of service to all men students and members of the faculty. It assists men students in finding acceptable homes while at college and part-time employment when needed. Students and faculty are invited to become members of the association and to assist in its service features. In co-operation with the campus Young Women's Christian Association the association publishes the "W" Book, a hand-book for students.

Eagleson Hall, home of the association, at the entrance to the campus at East Forty-second street, is designed for the use of all men of the University whether members of the organization or not. A small fee is requested for the use of the gymnasium and shower baths. The facilities of Eagleson Hall include information desk, public phone, writing materials, typewriter, magazines and daily papers, study rooms, and cafeteria.

The Young Women's Christian Association on the campus has a membership of 1300 women and maintains an active organization with headquarters at 1405 East Forty-third, telephone MEIrose 3454.

The purpose of the association is to provide for students the opportunity of applying Christian ideals to campus and community life.

The program ranges in scope from consideration of religious problems, ideals in relation to campus standards, personal problems such as the use of time and money, to study of industrial, racial, and international attitudes.

Two secretaries are employed whose services are at the disposal of any University woman.

Campus Organizations. (Activity, departmental, honorary, professional, religious and social.) In this alphabetical list are shown the active student organizations.

Ad Club, University of Washington, (activity); Alpha Delta Sigma, (national advertising professional); Alpha Kappa Delta, (sociology professional); Alpha Kappa Psi, (national commerce professional); American Institute of Civil Engineers, (departmental); American Institute of Electrical Engineers, (departmental); American Pharmaceutical Association, University of Washington branch, (departmental); American Society of Mechanical Engineers, (departmental); Ammonii Socii, (chemistry departmental); Ammonite Club, (men's geological professional); Associated Women Students, (activity); Atelier, (architecture professional); Athena Club, (debate and literary activity); Women's Athletic Association, (departmental); Attic and Easel, (art professional); Attic Players of A.W.S., (dramatic activity); Axe and Grindstone, (publications activity); Band, University of Washington, (activity); Bethany Club, Christian, (religious); Beta Alpha Psi, (national accounting professional); Beta Gamma Sigma, (commerce scholastic honor society); Big "W" Club, (activity); Business Administration Council, (departmental).

Campus Christian Council, (religious); Chako-Siyah, (Phrateres society); Christian Science Society, (religious); Circolo Italiano Universitario, (departmental); Compass and Chart, (naval departmental); Delta Theta Phi, (national legal professional); Engineering Council, (departmental); Filipino Club, (Adelphi society); Finish Club, (Adelphi society); Fir Tree, (men's activity honor society); Fo'castle Club, (social); Forest Club, (departmental); Forum Club, (Adelphi society); Fuyo-Kai Club, (Japanese women's society).

Gamma Alpha Chi, (national women's advertising professional); Gamma Epsilon Pi, (women's commerce scholastic honor society); German Club, (departmental); Glee Club, (men's activity); Glider Club, (activity); Graduate Club, (departmental); Greek Club, (departmental); Home Economics Club, (departmental); Inkwell Club, Lutheran, (religious); International Relations Club, (political science departmental); Iota Sigma Pi, (national chemistry professional); Japan Society, (social); Kappa Phi, (Methodist national sorority); Kappa Psi, (pharmacy professional); Kappa Kappa Psi, (national band professional); Kla-how-yah, (Phrateres society); Knights of Hook (national men's service activity); Lambda Rho, (women's art professional); Law Association, (departmental); Law Club, (professional); Liberal Club, Washington, (discussion); Mamook, (Phrateres society); Max Garrett Club, Protestant Episcopal, (religious); Mines Society (departmental); Minor "W" Club, (activity); Mortar Board, (women's activity honor society); Mu Phi Epsilon, (women's music professional).

Newman Club, Roman Catholic, (religious); Nurses' Club, (departmental); Omicron Nu, (home economics professional); Orchesis, (women's dance activity honorary); Order of the Coif, (scholastic honor society); Oval Club, (men's activity honor society); Orchestra and Band, (music organization); Pan Xenia, (international foreign trade professional); Peyac, (Phrateres society); Phi Alpha Delta, (national law professional); Phi Alpha Rho, Roman Catholic, (religious activity honorary); Phi Beta Kappa,

(scholastic honor society); Phi Delta Delta, (women's law professional); Phi Delta Kappa, (men's education professional); Phi Delta Phi, (international legal professional); Phi Lambda Upsilon, (national chemistry professional); Phi Mu Alpha, (national music professional); Phi Mu Gamma, (national dramatics professional for women); Phi Sigma, (national biology professional); Physical Education Club, (women's departmental); Pi Mu Chi, (men's pre-medical professional); Pi Lambda Theta, (women's national education professional); Pi Sigma Alpha, (political science professional).

Pilgrim Club, Congregational, (religious); Pre-Medic Club, (departmental); Purple Shield, (men's scholastic activity honor society); Rho Chi Society, (national pharmacy professional); Roger Williams Club, Baptist, (religious); Scabbard and Blade, (military professional); Scandinavian Club, (departmental); Sigma Eta Chi, (Congregational national sorority); Sigma Delta Chi, (national journalistic professional); Sigma Epsilon, (women's pre-medical professional); Sigma Pi Sigma, (national physics professional); Sigma Xi, (science scholastic honor society); Sororia, (adult women's society); Spanish Club, (departmental); Spiked Shoe Club, (track activity); Spurs, University of Washington Chapter of, (sophomore women's service activity); Stevens Debate Club, (debate society Adelphi); String Ensemble, (music organization); Student Council of Speech Art, (departmental).

Tah-Mah-Na-Wis, (Phrateres society); Tau Beta Pi, (engineering scholastic honor society); Tau Kappa Alpha, (forensic activity); Tau Sigma Delta, (architecture professional); Theta Sigma Phi, (women's national journalistic professional); Town Girls, (social); Twana, (Phrateres society); University Choral Society, (music organization); University Pistol Club, (activity); University Women's Vocational Club of College of Business Administration, (departmental); Varsity Boat Club, (activity); Washington Education Association, (departmental); Wesley Club, Methodist, (religious); Westminster Club, Presbyterian, (religious); Women's Ensemble, (music organization); Xi Sigma Pi, (national forestry professional); Young Men's Christian Association, (religious and social); Young Women's Christian Association, (religious and social); Zeta Mu Tau, (local mathematics professional); Zoology Journal Club, (departmental).

Debating Societies. There are two debating societies in the University, Stevens, and Athena. The first is for men, the last, for women.

Intramural debates for both men and women are held during the autumn quarter under the direction of the division of public speaking. The University National Bank trophy is awarded to the winner of the men's intramural contest. The Benton Brothers trophy is awarded to the winner of the women's intramural debates.

The women's varsity debate teams compete with teams from the University of Idaho, the University of Oregon, Oregon State College and the University of California.

The men's varsity debate teams compete with teams from Oregon, Stanford, the University of California, University of Southern California and the University of Arizona.

Musical Organizations. The musical organizations consist of the University Choral Society, men's Glee Club, women's ensemble, elementary and symphony orchestra, band and string ensemble.

Fraternities. Acacia, Alpha Delta Phi, Alpha Kappa Lambda, Alpha Sigma Phi, Alpha Tau Omega, Beta Kappa, Beta Theta Pi, Chi Phi, Chi Psi, Delta Chi, Delta Kappa Epsilon, Delta Sigma Phi, Delta Psi Delta, Delta Tau Delta, Delta Upsilon, Kappa Sigma, Lambda Chi Alpha, Phi Delta Theta, Phi Gamma Delta, Phi Kappa Psi, Phi Kappa Sigma, Phi Kappa Tau, Phi Sigma Kappa, Pi Kappa Alpha, Pi Kappa Phi, Psi Upsilon, Sigma Alpha

Epsilon, Sigma Alpha Mu, Sigma Chi, Sigma Nu, Sigma Phi Epsilon, Sigma Phi Sigma, Sigma Pi, Tau Kappa Epsilon, Tau Phi Delta, Tau Psi, Theta Delta Chi, Theta Kappa Theta, Theta Xi, Theta Chi, Zeta Beta Tau, Zeta Psi.

Adelphi (Independent Men's) House Groups. St. Michael's House, Tillicum.

Independent House Groups. Lander Hall, Terry Hall.

Sororities. Alpha Chi Omega, Alpha Delta Pi, Alpha Gamma Delta, Alpha Delta Theta, Alpha Omicron Pi, Alpha Phi, Alpha Xi Delta, Beta Phi Alpha, Chi Omega, Delta Delta Delta, Delta Gamma, Delta Zeta, Gamma Phi Beta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, Kappa Zeta, Lambda Omega, Phi Mu, Pi Beta Phi, Phi Omega Pi, Pi Sigma Gamma, Sigma Kappa, Theta Upsilon, Zeta Tau Alpha.

Phrateres. Organization of independent women consisting of the following subchapters: Chako-Siyah, Clark Hall (house group), Daughters of American Revolution (house group), Kla-how-yah, Lewis Hall (house group), Mamook, McKenny House (house group), Peyac, Tah-Mah-Na-Wis, Tolo House (house group), Twana.

Washington University State Historical Society. The Washington University State Historical Society has for its purpose the preservation of historical documents and records of the Northwest and the state of Washington, and to preserve or publish the results of all investigations.

GENERAL SCHOLASTIC REGULATIONS

STUDIES

At the beginning of each quarter, the student arranges his schedule of studies with the advice and assistance of his college registration officer or adviser. A regular course consists of 15 or 16 hours of recitation per week.

RULE 16. No person may regularly attend any course in which he has not been registered as a student or enrolled as an auditor.

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 totaling 10 credits. For specific courses see department of physical education announcement in the general catalogue.

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 here-in-after 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. Repeated courses shall be counted but once.

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.

MILITARY SCIENCE AND PHYSICAL EDUCATION

(h) In the administration of these rules military science, naval science, and physical education shall be on the same basis as so-called "academic" subjects.

(i) Any senior who has completed the required number of credits for graduation, but who has been dropped for low scholarship at the end of his last quarter in residence, shall not receive his degree until restored to good standing. In general he will not receive his degree until one or more quarters have elapsed. (For reinstatement and probation see (f) and (g) above.)

EXAMINATIONS

RULE 24. Examinations shall be held at the close of each quarter in all courses. Instructors desiring to excuse any or all students from examinations in any course shall obtain the approval of the head of the department and the dean of the college concerned. Provided, however, that a student whose name has appeared on two yearly honor lists shall be excused from final examinations in the last quarter of his senior year.

RULE 25. Examinations shall be held in each course 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. In case an instructor wishes to give an examination at other than the scheduled time, he must get the permission of the Board of Deans.

In certain courses running through two or more quarters 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.

Under "Departments of Instruction" such courses are indicated by course-numbers connected by hyphens.

RULE 26. 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.

RULE 27. A student, absent from a scheduled examination either by permission of his dean, or through sickness, or other unavoidable cause, may take another examination under the following conditions:

(a) He shall satisfy his dean as to his reasons for absence;

(b) He shall pay a fee of \$1 at the comptroller's office and get a receipt for same;

(c) He shall present this receipt to the registrar, who shall issue a card entitling student to examinations;

(d) He shall present this card to the instructors concerned and take the delayed examination at a time approved by his dean and instructor. No instructor need give more than one special examination in any one subject in any quarter.

RULE 28. Reports of all examinations of seniors must be in the registrar's office by 12 o'clock of the second Saturday preceding commencement day. If it is necessary, in order to meet the terms of this rule, the instructor is under obligation to see that the grades are delivered in person. Examination for all candidates for graduation at the end of the autumn, winter, and summer quarters shall conform to the regular examination schedule.

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 degrees 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.

TUTORING RATES

RULE 30. The maximum rates to be charged by official tutors shall be as follows:

No. in Class	
1.....	\$2.00 per student
2.....	1.20 per student
3.....	1.00 per student
4.....	.90 per student
5.....	.80 per student
6.....	.70 per student
7-15.....	5.00 per class

No class to be larger than 15.

No reduction to be made for absences.

Fees to be payable by the month, in advance.

LIBRARY RULES

RULE 31. Following are some regulations governing the use of the library:

(a) Any student may borrow books from the library for a period of two weeks; provided, however, that any book may be called in at any time.

(b) A loan may be renewed on or before the date the loan expires if there is no other demand for the book.

(c) A fine of 50 cents is charged for each book which is retained for four days after the date due. If the book is not returned seven days after due the fine amounts to \$1. The date due is stamped inside the back cover.

(d) Any reserved book may be borrowed for any period when the library is to be closed, but failure to return the book within ten minutes after the library next opens will subject the borrower to a fine of 50 cents for the first hour or any part of that hour and 5 cents for each additional hour or fraction thereof that the book is retained.

(e) Permission to borrow reference material may be granted at the discretion of the Reference Librarian. Students who fail to return such material at the time designated will be fined the same as for reserve books.

(f) A fine of 50 cents for the first day and 25 cents for each additional day or fraction thereof is charged for reference material taken from the library without permission.

(g) Fines are to be paid at the Comptroller's office as soon as notification is received.

(h) Failure to comply with (c), (d), (e), (f), or (g) shall be considered a "financial delinquency," and renders the student liable to being dropped from his classes.

FINANCIAL DELINQUENCY

The comptroller and the registrar are instructed not to record the credits of a student who, in their joint judgment, has been delinquent in meeting his financial obligations. A student whose credits have thus been withheld is in the same situation as one who has failed.

DISCIPLINE

RULE 32. (a) All charges of infraction of the rules and regulations of the University shall be referred to the faculty committee on discipline for investigation and final decision.

(b) Any conduct by a student or group of students prejudicial to University good order and discipline may be taken cognizance of by the University Discipline Committee and punished according to the nature and degree of the offense.

HOUSING

RULE 33. (a) Women students under twenty-one 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.

(b) Failure to comply with this regulation will make the student concerned subject to discipline to the extent of cancellation of registration.

(c) When there is a contract involving room or board between a householder and a student, the student will not be allowed to abandon the contract within the quarter, except for cause. The student welfare committee's representatives in the Dean of Women's office and the Men's Personnel office shall have jurisdiction over such contracts.

STUDENT PUBLICATIONS

RULE 34. Only those publications so designated by the committee on publications may make use of the good will of the University in soliciting advertising.

RULE 35. All requests for permission to issue student publications shall be referred to the committee on publications with power to act.

RULE 36. The editor of the *University of Washington Daily* and the editors of all other student publications shall be held responsible for all matter that appears in their respective publications. Correspondents of all other publications shall be held similarly responsible for all items contributed by them to their respective publications.

RULE 37. No special editions of *The Daily*, by special sets of editors, shall be allowed, except by special permission of the publications committee of the board of control.

STUDENT ACTIVITIES

RULE 38. Student activities shall be interpreted as:

- (a) Any sport or pursuit for which an A.S.U.W. emblem is granted.
- (b) Any sport or pursuit organized under an A.S.U.W. coach or a member of the faculty in preparation for (a).
- (c) Any semi-scholastic pursuit for which credit is given.
- (d) Any all-University public performance managed by students.
- (e) The editorship and business managership of all authorized student publications.
- (f) A total of eight members of the *University of Washington Daily* staff. The editor of the *Daily*, within two weeks after taking office, shall furnish the dean of women's office and the men's personnel office, with names and positions of the eight students who will hold the most responsible positions on his staff. This list shall include the editor, assistant editor, business manager, news editor, head of the copy desk and three others.
- (g) All elective offices of the A.S.U.W., head student managerships, memberships of the executive committee, and Council of the Women's Federation, Y.M.C.A., and Y.W.C.A., and class offices.

ELIGIBILITY RULES

GENERAL

RULE 39. (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 fifteen (15) Carnegie units for entrance requirements.
 - 3. Be registered for at least twelve 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.
- (b) An incomplete shall not be counted as failure or passed until adjusted.
- (c) The foregoing general rules shall apply to the editors-in-chief and business managers of all authorized student publications. Eligibility in those

cases listed under Rule 38 (e) and (f) may be relaxed to a minimum of eight credit hours within the discretion of the Dean of the School of Journalism. It shall be the duty of the Dean of the School of Journalism to ascertain eligibility and enforce this rule.

(d) All elective officers of the A.S.U.W., head student managers, members of the executive committee and council of the Associated Women Students, Y.M.C.A. and Y.W.C.A. presidents, and class officers, must possess the eligibility requirements for the offices for which they are candidates, at the time they file for election, or are nominated.

Eligibility in the cases listed under Rule 38 (g) shall be ascertained and enforced by the chairman of the Committee on Student Welfare.

(e) The current records of all students engaged in student activities as defined in Rule 38, shall be checked at the beginning of each quarter and at the end of the first six weeks of each quarter. Students not having passed successfully in ten credits the preceding quarter or not carrying successfully ten credits at the end of the first six weeks of the current quarter shall be denied participation for the quarter or for such portion of the quarter as remains.

(f) A student, to be eligible to take part in any intramural meet or game under the control of the department of physical education, must pass any physical tests set by the department of physical education, and practice at least one month before any intramural meet or game. Eligibility in these cases shall be determined by the heads of the department of physical education for men and women respectively.

SPECIAL

Group I—Athletics:

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

1. Comply with the foregoing general rules of eligibility.
2. Have been in residence for one calendar year after his matriculation. A student, all of whose college work has been done in a junior college, who transfers to a conference institution with a minimum of 36 quarter hours' credit, shall be eligible immediately to two years' varsity competition, but such transfer shall not be eligible to freshman competition.
3. Have completed thirty-six (36) quarter credits of scholastic work, and earned passing grades therefor.
4. Pass any physical tests set by the department of physical education.
5. Have registered not later than three weeks after the first day of registration in the quarter in which he desires to compete.

(b) No student shall participate in any one intercollegiate sport for more than three college seasons in the aggregate, and shall not compete in varsity competitions in more than four separate academic years.

(c) So far as applicable these regulations shall apply to freshmen. Freshmen shall not be allowed to play with varsity men on a team representing the institution in any outside competition.

(d) Athletics for women shall be limited to games and contests within the University. Such games and contests shall not be open to the public. Eligibility in these cases shall be determined by the head of the department of physical education and hygiene for women.

(e) Eligibility in athletic cases shall be determined by the chairman of the faculty athletic committee.

Group II—Dramatics, music, debate, oratory, for which credit is given.

(a) In these activities a student must comply with the foregoing general rules of eligibility before he shall be allowed to represent the University.

His eligibility shall be determined by the chairman of the Committee on Student Welfare.

(b) No student shall take part in more than one dramatic performance during a quarter unless such performance is part of a regular course for credit.

Group III—All-University public performances managed by students and not included in Groups I and II.

(a) In these activities, a student must comply with the foregoing general rules of eligibility and satisfy the chairman of the committee on student welfare before he is allowed to represent the University.

MISCELLANEOUS

RULE 49. Smoking shall not be allowed in the University recitation or laboratory buildings or on the steps thereof.

RULE 50. Push-ball contests, tie-ups, and all other forms of class conflicts are prohibited. Any forms of hazing, or of interference by any class or any members of any class with the personal dignity and liberty of any member of any class, are a breach of discipline and are prohibited.

MEETINGS AND SPEAKERS AT STUDENT CLUBS

RULE 51. (a) Student clubs and organizations connected with the work of a department or departments may have speakers address them at the University, provided the speakers are vouched for by the department concerned. They must also secure permission of the superintendent of buildings and grounds to use the University grounds or buildings.

(b) All approved student groups, not connected with the work of a department, wishing to have speakers address them in University buildings or grounds, must make advance application in writing to the public exercises committee for approval. The request must give the names of speakers and subjects, together with the date, hour, and room or space desired. If the request is approved by the committee on public exercises, the superintendent of buildings and grounds will be empowered to grant a meeting place.

The term "approved group," as used above, applies only to those groups or organizations which have received sanction from the office of the dean of faculties.

An approved group may have use of a University room for a meeting at which no outside speakers are present by making direct application to the superintendent of buildings and grounds.

It is understood that the University, in granting permission, does not sponsor or assume responsibility for such meetings, but that entire responsibility rests on the student group.

(c) All other student groups who desire the use of University buildings or grounds, or who desire to have speakers address them in University buildings, must make such requests in writing to the office of the dean of faculties.

(d) No student meeting shall be designated as an assembly without the approval of the public exercises committee.

(e) No grant of a meeting place in University buildings or grounds to any student group shall be construed to carry with it the sanction or approval of the University as to subject or speaker; such meetings must not be represented as being sponsored by the University, nor may they be advertised as University meetings. Entire responsibility for the conduct of the meeting rests upon the student group which has received permission to hold the meeting.

RULE 52. There may be three University formal social functions in any academic year, viz., the junior prom and the varsity ball, not open to freshmen, and the cadet ball, open to freshmen.

RULE 53. (a) During the first two weeks of the autumn quarter, no fraternity or sorority nor any organization or club whose membership is made up wholly of men or women shall give any social functions at which members of the opposite sex are entertained.

(b) During the college year, social functions may be held on Fridays and Saturdays only. The night before a single University holiday shall be free for social affairs, except in the case of the night before Campus Day.

(c) No social functions involving both sexes may be held within the two weeks preceding the quarter or year examinations.

(d) During the college year, picnics may be held only on Saturdays.

Joint Committee on Student Affairs administers the regulations of the University faculty dealing with all student activities except athletics and publications. For any infraction of such regulations the committee may withhold the grant of social privileges or may refer the infraction to the Faculty Discipline Committee for action. All rules of the faculty governing the Social Calendar are effective during the four quarters of the academic year and during the four vacation periods, Thanksgiving, Christmas, Easter, and the intermission at Commencement between the close of the spring and the opening of the summer quarter. Among its functions is the approval of:

(a) The date and place of formal and informal functions of all student organizations.

(b) All advertising in connection with student musical and dramatic entertainments.

(c) Price of admission to all dances, musical and dramatic entertainments.

(d) Such candidates for initiation into fraternities or sororities as shall be referred to it by the registrar.

RULES OF STUDENT AFFAIRS COMMITTEE GOVERNING THE SOCIAL CALENDAR

Registration

1. Permission for an entertainment of any kind must be received from the Joint Committee on Student Affairs, either through the chairman or at a meeting of the Committee, and the event must be registered in the social calendar kept in the office of the Dean of Women, 263 Education Hall.

2. Approval of the place of holding social functions (including house parties and picnics) must be obtained from the Committee. This also includes the use of University buildings.

3. Men entertaining University women in their group houses must provide a chaperon. Chaperons for all organized affairs must be registered in the office of the dean of women at least one week before the date of the party. Chaperons for all-University affairs must be registered at least three weeks before the date of the party.

4. Entertainment features to be put on at the parties must receive the approval of the dean of women at least three weeks before the date of the party and must be confined to University of Washington talent.

5. Each organized house is allowed one formal dance each school year. (There is no limit to the number of informals.)

6. Exchange dinners may be given on Friday and Saturday nights only and shall be registered in the social calendar.

7. The lending of chapter houses to friends for evening parties must be restricted to Fridays and Saturdays, and the event must be registered in the social calendar. Rules governing the social calendar must be observed.

All-University Affairs

8. There may be three all-University formals: the varsity ball, the junior prom, and the cadet ball.

9. The all-University informals approved by the committee are Oval Club four dances, Mortar Board, Varsity Boat Club, Knights of the Hook, engineers', Campus Day, homecoming, Stadium Day informal and fine arts ball.

Closed Dates

10. The first two weeks of the autumn quarter shall be closed to dances other than all-University affairs.

11. The last two weeks of the quarter shall be closed to all social affairs, including bazaars.

12. Parents, alumni, or other friends entertaining organizations are requested to co-operate with the University by observing these rules.

13. Dates for the following affairs shall be closed: The evening of autumn quarter mixers of the Campus Christian Council; the winter play of the dramatic art department; the night before Campus Day; the spring opera and the dance drama respectively.

Hours

14. All dancing shall cease by 12 p.m. and all parties must be over by 1 a.m. If a party is held in a women's house, men may remain in the house until 1 a.m. Organizations receiving entertainment from parents, alumni, or other friends are requested to observe this rule.

15. All student organization meetings on week nights shall be restricted to business meetings and banquets. These shall be over by 9:00 p.m. Dancing is not to be included in these programs.

Week Night Activities

16. There shall be no dancing by mixed groups on Monday, Tuesday, Wednesday, or Thursday nights except before a regularly scheduled holiday, and on the night of the A.S.U.W. elections. There shall be no dancing on Sundays.

17. Following the A.S.U.W. semi-annual election the successful candidates may hold open house until 10:00 p.m. Dancing is allowed. No other open houses may be held on school nights without the express authorization of the committee.

18. Only two college nights at the theatres are allowed by the committee. These shall be under the auspices of the A.S.U.W.

General Rules

19. There shall be no afternoon dancing between mixed groups except on Friday afternoon from 4 to 6 and Saturday afternoon.

20. Bazaars must be registered on the social calendar. They may be held only on Fridays and Saturdays and not at all within the last two weeks of the quarter.

21. Class picnics are prohibited.

22. All organization parties are restricted to Seattle with the exception of acceptable places which are within 15 miles of the University District.

23. Price of admission to all dances, musical, and dramatic entertainments must be approved by the committee. If the charge for a formal is not

more than \$2.50, for an informal \$1, or for a dramatic performance more than 50 cents to students, no special approval is required.

24. All University organizations are affected by these rules—Greek letter groups, independent houses, honoraries, departmental clubs, church clubs, etc.

FRATERNITIES AND SORORITIES

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

(b) No student having less than junior standing shall be initiated into a fraternity or sorority until he or she shall have earned 18 credits in two quarters, or 15 in one quarter, at this University; provided the required credits in physical education activity or military science shall not be counted.

(c) Any ex-service man entering the University with 15 entrance units, at least 10 academic credits, and a minimum of 10 military credits, shall be regarded as eligible for initiation into a fraternity.

(d) Any ex-service man who in addition to having 15 entrance units and a minimum of 10 military credits, shall have earned in the University a minimum of 10 credits in one quarter, shall be eligible for initiation into a fraternity; provided always that if he is registered for less than 15 credits, he must have passed in all his courses.

(e) Candidates for initiation into either fraternities or sororities shall secure from the registrar's office a certificate of eligibility.

RULE 55. The location of all fraternity and sorority houses must be approved by the president of the University.

CALENDAR RULE

The autumn quarter shall begin on October 1, except when this date falls on Friday, Saturday, or Sunday, when it shall begin the Monday following; and it shall end December 20, except when this date falls on Saturday, Sunday or Monday, when it shall end the preceding Friday.

The winter quarter shall begin on the Monday falling between January 2 and January 8, inclusive, except when January 2 falls on Monday, in which case the winter quarter shall begin on Tuesday, January 3. The winter quarter shall end on Friday falling between March 16 and March 22 inclusive, except when January 8 falls on Monday, in which case the winter quarter shall end on March 23.

The spring quarter shall begin on the Monday falling between March 26 and April 1, inclusive, except when June 15 falls on Friday, in which case the spring quarter shall begin on April 2. The spring quarter shall end on the Friday falling between June 9 and June 15, inclusive, except when March 26 falls on Monday, in which case the spring quarter shall end on June 8.

The summer quarter shall begin on the Wednesday following Commencement, and shall end on the eleventh Thursday after the opening of the quarter.

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 keen specialized training in some one major phase of business.
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 55, 63, 64.

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.

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.

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 10 credits 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 a member of the college faculty. The college requires the following courses, amounting to 93 credits:

CURRICULUM

FIRST YEAR

	<i>Credits</i>		<i>Credits</i>
B.A. 1,2. Gen. Economics.....	10	An approved Laboratory Science (10 credits), or Mathematics (10 credits), or advanced Foreign Language (10 credits).....	10
7. Economic Geography	5	Approved Electives	10
Comp. 1. Written and Oral English. 5			
Speech 37. Argumentation	5		

SECOND YEAR

	<i>Credits</i>		<i>Credits</i>
B.A. 54,55,56. Business Law.....	9	Hist. 57-58-59. Hist. of the U.S.....	9
62,63,64. Accounting	15	Approved Electives	12

THIRD YEAR

	<i>Credits</i>		<i>Credits</i>
B.A.103. Money and Banking.....	5	B.A. 106. Econ. of Mktg. & Adv., or	
105. American Labor Probs.....	5	108. Risk and Risk Bearing.....	5
115. Business Correspondence	5	Approved Electives	25

FOURTH YEAR

	<i>Credits</i>		<i>Credits</i>
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 pages 98-105 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 qualifications 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.

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 hours chosen from the following list; a minor in economics must include B.A. 1, 2, 160, and 5 additional hours selected from the following list:

<i>Credits</i>		<i>Credits</i>	
B.A. 104. Economics of Transp.....	5	B.A. 159. Adv. Money and Banking. 5	
106. Econ. of Mktg. and Adv.....	5	162. European Labor Problems... 5	
108. Risk and Risk Bearing.....	5	164. Real Estate Economics..... 5	
121. Corporation Finance	5	168. Dev. of Econ. Thought..... 5	
122. Principles of Investment.....	5	173. Internat. Commercial Policies 5	
129. Taxation	5	175. The Business Cycle..... 5	
131. Econ. of Public Utilities....	5	181. Economics of Consumption... 5	

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 144 business administration credits, together with the 10 credits of required military or naval science or physical education. To take the 144 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 144 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 144 credits and 10 credits of required military or naval science or physical education, he may enter the School of Law and there earn 36 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 36 credits in the School of Law, making a total of 190 credits for graduation in business administration. The degree of bachelor of laws will be con-

ferred upon completion of his work in the Law School. In exceptional cases where the student lacks part of the 144 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 144 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 below.

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.

The College offers opportunity for concentration in the following fields:

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

Students majoring in these fields must satisfy the general requirements of the University and the College of Business Administration, outlined on pages 94, 95.

(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 credit hours from the following list:

	Credits		Credits
B.A. 104. Econ. of Transportation..	5	B.A. 159. Adv. Money and Banking.	5
*106. Econ. of Mktg. and Adv....	5	162. European Labor Problems....	5
*108. Risk and Risk Bearing.....	5	164. Econ. of Real Estate.....	5
121. Corporation Finance	5	168. Dev. of Econ. Thought.....	5
122. Principles of Investment.....	5	173. International Com. Policies..	5
124. Public Finance	5	175. The Business Cycle.....	5
129. Taxation	5	181. Economics of Consumption...	5
131. Econ. of Public Utilities....	5		

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

- (2) Strongly urged 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

(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 have their programs approved by the professor in charge of Labor courses.

(B) ACCOUNTING

The courses in Accounting are planned to prepare students for positions in the following fields: (1) professional and industrial accounting, governmental and industrial auditing; (2) executive positions in business concerns as head accountants, treasurers, cashiers, comptrollers, and budget directors. Special emphasis is placed on training for the C.P.A. examination.

Students majoring in Accounting are:

(1) Required to take 30 credit hours as follows:

	<i>Credits</i>		<i>Credits</i>
B.A. 110,111,112. Adv. Accounting.....	15	B.A. 191. Probs. in Accounting and	
154. Cost Accounting I.....	5	Administration.....	5
156. Auditing	5		

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

(a) in accounting:

	<i>Credits</i>		<i>Credits</i>
B.A. 155. Cost Accounting II.....	5	B.A. 185. C.P.A. Problems	5
157. Income Tax Accounting.....	5		

(b) in general business subjects:

	<i>Credits</i>		<i>Credits</i>
B.A. 59. Graphic and Tabular Anal.		B.A. 126. Commercial Credit	5
of Bus. Probs.....	5	130. Industrial Management	5
102. Prin. of Office Mgmt.....	5	132. Mgmt. of Pub. Utilities.....	5
120. Business Organization	5	136. Market Analysis	5
121. Corporation Finance	5	172. Exec. Tech. and Budget. Con. 5	
122. Principles of Investment.....	5	175. The Business Cycle.....	5
124. Public Finance	5	177. Business Forecasting	5

(C) MANAGEMENT

The courses in Management are planned to provide fundamental background for those students who are looking forward to future work as personnel managers, directors of business research departments, departmental managers, factory superintendents, comptrollers or budget directors. The principles which may be applied to location, organization, management of men, purchasing and controlling materials, production and its co-ordination with sales, budgets, and the like, are essentially the same in all business organizations. The instruction covers a field of knowledge basic for all capable executives.

Students majoring in Management are:

(1) Advised to elect the mathematics option in the first year and take Math. 11 and Math. 13.

(2) Required to take 25 credits as follows:

	<i>Credits</i>		<i>Credits</i>
B.A. 130. Industrial Management....	5	B.A. 172. Executive Technique and	
167. Personnel Administration	5	Budgetary Control	5
M.E. 140. Time Study and Job Anal. 5		196. Research in Pub. Util. Mgmt. 5	

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

<i>Credits</i>		<i>Credits</i>	
B.A. 59. Graphic and Tabular Anal.		B.A. 122. Principles of Investment..	5
of Business Problems.....	5	126. Commercial Credit	5
102. Office Management	5	132. Mgmt. of Public Utilities....	5
107. Indus. Traffic Management...	5	154,155. Cost Accounting	10
110,111,112. Accounting	15	175. The Business Cycle.....	5
120. Business Organization	5	176. Investment Analysis	5
121. Corporation Finance	5	177. Business Forecasting	5

(D) 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 third quarter of the sophomore year and not 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.

(E) 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 credit hours as follows:

	Credits		Credits
B.A. 121. Corporation Finance	5	B.A. 159. Adv. Money and Banking	5
126. Commercial Credit	5	177. Business Forecasting	5
127. For. Exch. & Int. Banking..	5	189. Bank Credit Administration..	3

(2) Strongly urged 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. 59. Graphic and Tabular Anal. of Business Problems.....	5	B.A. 173. Internat. Comm. Policies..	5
104. Econ. of Transportation.....	5	176. Investment Analysis	5
*106. Econ. of Mktg. and Adv.....	5	Math. 11. Investments I.....	5
*108. Risk and Risk Bearing.....	5	12. Investments II	5
110,111,112. Adv. Accounting.....	15	13. Statistical Methods	5
120. Business Organization	5	Law 103. Property	5
122. Principles of Investment.....	5	111. Wills	4
124. Public Finance	5	116. Negotiable Instruments	6
131. Econ. of Public Utilities.....	5	126. Trusts	5

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

(F) 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 credit hours as follows:

	Credits		Credits
B.A. 120. Business Organization.....	5	B.A. 124. Public Finance	5
121. Corporation Finance	5	175. The Business Cycle	5
122. Principles of Investment.....	5	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.

	Credits		Credits
B.A. 104. Econ. of Transportation...	5	B.A. 164. Econ. of Real Estate.....	5
127. Foreign Exchange and International Banking.....	5	177. Business Forecasting	5
129. Taxation	5	189. Bank Credit Administration..	3
131. Econ. of Public Utilities.....	5	Speech. 40. Public Speaking.....	5
150. Railroad Transportation	5	Geog. 102. Econ. Geog. of N. Amer.	5
159. Adv. Money and Banking....	5	Law 116. Negotiable Instruments...	6
		123. Private Corporations	6

(G) 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

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 30 credit hours as follows:

<i>Credits</i>		<i>Credits</i>	
B.A. 116. Prin. of Foreign Trade....	5	B.A. 144. Trade of Europe.....	5
127. For. Exch. and Internat. Bkg. 5		145. Trade of the Americas.....	5
143. Trade of Far and Near East. 5		159. Adv. Money and Banking... 5	

(2) 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. 104. Econ. of Transportation... 5		B.A. 195. Research in For. Trade... 2-5	
113. Port Devel. and Terminals... 3		Geog. 102. Econ. Geog. of N. Amer. 5	
119. Water Transportation 5		103. Pol. and Econ. Geog. of Asia. 5	
127. For. Exch. and Internat. Bkg. 5		105. Econ. Geog. of Latin Amer.. 5	
134. Wholesaling 5		Law 141. Admiralty..... 4	
149. Marine Insurance 5		122. International Law 6	
151. Transportation Rates 5		Pol. Sci. 121. For. Rel. of the U.S... 3	
152. Prin. of Ship Operation.... 5		122. Admin. of Amer. For. Affairs 3	
153. Bus. Admin. of Shipping.... 5		124. International Relations 3	
173. Internat. Comm. Policies.... 5		Twenty hours or more of some modern foreign language.	

2. Foreign Consular and Trade Service

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 the 30 credit hours listed in Paragraph (1) above and, in addition, at least 30 hours of some modern foreign language.

(2) 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. 104. Econ. of Transportation... 5		Hist. 1-2. Med. and Mod. Europe.. 10	
119. Water Transportation 5		157-158-159. Hist. of Amer. Diplom. 6	
134. Wholesaling 5		Or. Stud. 26. History of China..... 5	
149. Marine Insurance 5		27. History of Japan..... 5	
151. Transportation Rates 5		Law. 141. Admiralty 4	
152. Prin. of Ship Operation.... 5		122. International Law 6	
153. Business Admin. of Shipping 5		Pol. Sci. 121. For. Rel. of the U.S... 3	
173. Internat. Comm. Policies.... 5		122. Adm. of Amer. For. Affairs. 3	
Geog. 102. Econ. Geog. of N. Amer. 5		127. International Organization .. 3	
103. Pol. and Econ. Geog. of Asia. 5		129. Inter. Rel. of the Far East.. 5	
105. Econ. Geog. of Latin America 5			

(H) PUBLIC UTILITIES

The objective of the courses in Public Utilities is to give students a thorough grounding in the fundamentals of the several public utility businesses. The more superficial technical aspects of such industries are sacrificed in order that the student may secure, in so far as possible, a comprehensive knowledge of, and an ability to use and apply the economic principles underlying such industries.

With academic preparation of this basic type, students have the opportunity of obtaining fundamental economic training for positions in the various business departments (rate-making, commercial, personnel, public relations, auditing, accounting, etc.) of the several public utility industries. It is believed that the necessary technical and procedural routine in public utility work should, and could best 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 credit hours as follows.

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

(2) 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. 59. Graphic and Tabular Anal.		B.A. 130. Industrial Management....	5
of Bus. Problems.....	5	154. Cost Accounting I.....	5
103. Money and Banking.....	5	167. Personnel Administration	5
106. Econ. of Mktg. and Adv....	5	196ABC. Research in Public Util.	
110,111,112. Adv. Accounting.....	15	and Management.....	2-5
122. Principles of Investment.....	5	Law 133. Public Utilities.....	6
124. Public Finance	5	119,120. Constitutional Law.....	8
129. Taxation	5	Pol. Sci. 101. Constitutional Gov't... 2	

(I) 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 credit hours as follows:

	<i>Credits</i>		<i>Credits</i>
B.A. 121. Corporation Finance	5	B.A. 164. Econ. of Real Estate.....	5
122. Principles of Investment.....	5	169. Applied Econ. of Real Estate. 5	
124. Public Finance	5		

(2) 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. 59. Graphic and Tabular Anal.		B.A. 175. The Business Cycle.....	5
of Business Problems.....	5	177. Business Forecasting	5
106. Econ. of Mktg. and Adv....	5	Speech 38. Argumentation and Deb. 5	
120. Business Organization	5	Law 101. Contracts.....	10
126. Commercial Credit	5	104. Property, Real	6
129. Taxation	5	112. Agency	5
136. Advertising	5	135. Landlord and Tenant.....	3
141,142. Insurance I and II.....	10	145. Credit Transactions	10

(J) TRANSPORTATION

1. Railroad Transportation

The courses in Railroad Transportation are planned to prepare students for positions in the traffic and business departments of transportation companies and for traffic work in business enterprises.

Students majoring in Railroad Transportation are:

(1) Required to take 25 credit hours as follows:

	<i>Credits</i>		<i>Credits</i>
B.A. 104. Econ. of Transportation...	5	B.A. 151. Transportation Rates	5
113. Port Devel. and Terminals... 3		153. Bus. Admin. of Shipping....	5
150. Railroad Transportation	5	195. Research in Foreign Trade... 2	

B.A. 104 should be taken in the sophomore year.

(2) 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. 107. Indus. Traffic Mgmt.....	5	Math. 4. Trigonometry.....	5
108. Risk and Risk Bearing.....	5	C.E. 120. Transportation Engineering	2
119. Water Transportation	5	121. Transportation Engineering...	4
121. Corporation Finance	5	123. Highway and Railway Econ..	3
131. Econ. of Pub. Utilities.....	5	124. Highway Design	3
133. Control of Public Utilities...	5	128. Transportation Administration	3
Math. 1. Advanced Algebra.....	5		

2. Water Transportation

The courses in Water Transportation are planned to prepare students for positions in the operating, traffic and business departments of steamship companies.

Students majoring in Water Transportation are:

(1) Required to take 28 credit hours as follows:

	<i>Credits</i>		<i>Credits</i>
B.A. 104. Econ. of Transportation...	5	B.A. 151. Transportation Rates.....	5
113. Port Develop. and Terminals	3	152. Prin. of Ship Operation.....	5
149. Marine Insurance	5	153. Business Admin. of Shipping.	5

(2) 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. 107. Indus. Traffic Management	5	B.A. 144. Trade of Europe.....	5
108. Risk and Risk Bearing.....	5	145. Trade of the Americas.....	5
113. Port Develop. and Terminals	3	Astron. 1. General Astronomy.....	5
121. Corporation Finance	5	Law 141. Admiralty	4
126. Commercial Credit	5	Math. 1. Advanced Algebra.....	5
127. For. Exchange and Internat.		4. Trigonometry	5
Banking.....	5	M.E. 185. Naval Architecture.....	3
143. Trade of Far and Near East.	5		

Students should obtain the special bulletin on Maritime Commerce from the office of the dean.

3. Air Transportation

The courses in Air Transportation, which include a liberal number from Aeronautical Engineering, are planned to prepare students for positions in traffic and business departments of air transportation companies.

Students majoring in Air Transportation are:

(1) Required to take 29 credit hours as follows:

	<i>Credits</i>		<i>Credits</i>
B.A. 53. Sea and Air Navigation...	5	B.A. 153. Bus. Admin. of Shipping..	5
104. Econ. of Transportation.....	5	A.E. 161. Aerial Transportation....	3
107. Indus. Traffic Management..	5	162. Adv. Aerial Transportation..	3
113. Port Devel. and Terminals..	5		

B.A. 53 and 104 should be taken in the sophomore year.

(2) 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. 108. Risk and Risk Bearing.....	5	A.E. 121. Airships	3
121. Corporation Finance	5	Chem. 1-2. General Chemistry.....	10
133. Control of Pub. Utilities.....	5	Math. 1. Advanced Algebra.....	5
A.E. 101. Aerodynamics	3	4. Trigonometry	5
111. Airplane Design	3		

(K) 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 7-8.

(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 bulletin.

(3) Required to present satisfactory evidence of sufficient training in shorthand, typewriting and secretarial work to enable the candidate to teach these subjects satisfactorily.

(4) Required to take 25 credit hours as follows:

	Credits		Credits
B.A. 102. Prin. of Office Mgmt.....	5	B.A. 124. Public Finance.....	5
110. Advanced Accounting	5	167. Personnel Administration.....	5
120. Business Organization	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).

Students who intend to take B.A. 141, Insurance I, and B.A. 142, Insurance II, should elect the optional requirement B.A. 108, Risk and Risk Bearing.

(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, forty-seven 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	..
Cer. 90. Ceramic Materials.....	3	..	3	3	..	..
Min. 162. Cost of Mining.....	4	4	..	..	4	..
Summary.....	60	50	41	40	33	25

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 in the field of his concentration.

I. MASTER'S DEGREES

1. Master of Arts (M.A.) This is a Liberal Arts degree. The candidate must have a reading knowledge of a foreign language. He must present a major in a Liberal Arts field in economics (see IV-1 below) and a minor from some other department.

2. Master of Business Administration. (M.B.A.) This is a professional degree. The candidate is not required to have a reading knowledge of a foreign language. He must present a major in a business administration field (see IV-2 below) and all of his work is done in the College of Business Administration.

3. Master of Arts in Business Administration. (M.A. in B.A.) This is a semi-professional degree. The candidate is not required to have a reading knowledge of a foreign language. He must present a major in a business administration field (see IV-2 below) and a minor from some other department.

II. BACKGROUND

Candidates for any of the above degrees must submit, in addition to the work required for the master's degree, a background equivalent to that possessed by those who have completed at least thirty-five credits in upper division subjects in business administration, including economic theory. These background subjects must be approved by the committee having supervision over the work of the candidate, but the committee may, at its discretion, approve the substitution of courses in history, sociology, political science, or business, as may be deemed necessary to establish a satisfactory background for the graduate work being undertaken.

III. CANDIDATE'S COMMITTEE: PRELIMINARY CONFERENCE

During the quarter in which the candidate makes known his intention to take a master's degree, the candidate should have the preliminary conference required by the Graduate Council. The examining committee consists of a representative of the College of Business Administration in charge of graduate students, the head of the department in which the candidate's major work falls, and one or more other members selected by these two. The purpose of this conference is to decide upon the candidate's qualifications to do work leading to the master's degree and to plan the student's course of study. The courses which will be approved will be those which seem best for the purpose of rounding out the student's knowledge in the field or fields which he has selected. These courses need not necessarily be confined strictly to the field of concentration, and the minor field if there is one, but should have a bearing upon those fields. The candidate's committee has power to make any adjustments that seem desirable in the candidate's program. If the committee decides that the candidate is qualified to do graduate work and if a satisfactory program is arranged, his formal petition to be admitted as a candidate for a master's degree will be approved.

IV. REQUIREMENTS

NOTE: No courses will be accepted toward fulfillment of the minimum course requirements unless the grade earned is A or B.

1. *Requirements for the Master of Arts Degree.* A candidate for the Master of Arts degree shall select a field of concentration from the following list: (1) Economic Theory; (2) Economic History; (3) Private Finance; (4) Public Finance; (5) International Finance; (6) Labor; (7) Consumption; (8) Welfare Economics; (9) A field suggested by the candidate and approved by the Committee. He must then meet the following requirements:

(a) He shall normally elect the proper graduate seminar for three quarters. His thesis will be a part of the work required in the seminar and no additional credit will be granted for the thesis.

(b) He shall complete a minimum of three approved advanced courses in the field of concentration.

(c) He shall complete a minimum of two approved advanced courses in a minor field.

(d) He shall, sometime previous to the final examination, formally demonstrate that he has a reading knowledge of a foreign language.

2. *Requirements for the Master of Business Administration Degree.* A candidate for the Master of Business Administration degree will select a field of concentration from the following list: (1) Accounting and Management; (2) Commercial Banking; (3) Investment Banking; (4) Foreign Trade; (5) Marketing; (6) Public Utilities; (7) Real Estate; (8) Transportation; (9) a field suggested by the candidate and approved by the committee. The candidate will then choose one of the following plans:

Plan A: If the candidate is interested in investigating the business fundamentals in some field which is studied in one of the graduate seminars:

(a) He shall normally elect the proper graduate seminar for three quarters. His thesis will be a part of the work required in the seminar and no additional credit will be granted for the thesis.

(b) He shall complete a minimum of five approved advanced courses.

Plan B: If the candidate is interested in more specialized training:

(a) He shall complete a minimum of seven approved advanced courses which may, at the discretion of the candidate's committee, include one or two quarters in graduate seminars.

(b) In addition the candidate will be required to prepare a thesis in the field of his specialty. It is not necessary to register for the thesis.

(c) Students electing Plan B will ordinarily be required to take one of the following research courses: B.A. 191, B.A. 195, B.A. 196, or B.A. 137-8-9. If the thesis is written as a part of the work of one of these research courses, or any other course, the credits so earned cannot be counted toward the courses required under (a).

3. *Requirements for the Master of Arts in Business Administration Degree.* The requirements are the same as for the Master of Arts degree except that a foreign language is not required and the field of concentration must be selected from the list under IV-2 instead of IV-1.

4. *Requirements for a Master's Degree Combining Business Administration and Education.* Education may be offered as a major or a minor in combination with Business Administration. In either case all of the requirements for a commercial teaching major must be met. All other requirements are the same as those outlined for the Master of Arts or Master of Arts in Business Administration degree. See sections IV-1, IV-3 and VII.

V. THESIS

A thesis shall be required of every candidate for the master's degree. The work on the thesis shall be spread over at least two full quarters, but may be extended over three quarters. The thesis shall be in charge of the head of the department in which the candidate's major work falls and the committee named above. (Section III).

At least two weeks before the date on which the candidate expects to take the degree one copy of the thesis in typewritten form shall be deposited with the librarian for permanent preservation in the University archives. The thesis must meet with the approval of the librarian as to form, and the cost of binding must be deposited with the thesis. Eight weeks before the thesis is deposited in the Library the candidate shall submit a tentative draft to the committee and two weeks before the thesis is deposited in the library a final draft shall be submitted to the committee.

VI. FINAL EXAMINATION

A final written or oral examination, or both, is required. The examination will be designed to test the candidate's general knowledge in the whole field of concentration and will not necessarily be confined to the particular courses presented for credit. In the case of candidates for the Master of Arts or Master of Arts in Business Administration degree, the examination will also cover the courses presented in the field of the minor.

VII. MINOR IN BUSINESS ADMINISTRATION

Candidates for the master's degree with Business Administration or Economics as a minor shall present a background equivalent to that possessed by those who have completed at least eighteen credits in upper division subjects in Business Administration. These background subjects must be approved by the candidate's committee. The candidate must present not less than three approved advanced courses in Business Administration or Economics.

VIII. THE DOCTOR OF PHILOSOPHY (PH.D.) DEGREE IN ECONOMICS AND BUSINESS ADMINISTRATION

The requirements for this degree are uniform throughout the University and fully outlined in the graduate bulletin. The candidate's program for the attainment of the doctor's degree must necessarily be so individual in character that it can be outlined only in conference with the candidate. Persons seeking this degree must confer with the dean of the Graduate School and the professors under whose direction they expect to do their work.

IX. MINOR FOR DOCTOR OF PHILOSOPHY DEGREE

Candidates for the Doctor of Philosophy degree who present two minors, one of which is in Economics or Business Administration, must have a background equivalent to at least eighteen upper division credits in the field which he has selected. In addition to this he must present not less than three approved courses in Economics or Business Administration.

Candidates for the Doctor of Philosophy degree who present one minor which is in Economics or Business Administration shall have a background equivalent to at least thirty-five upper division credits in the field which he has selected. In addition to this, he must present not less than six approved courses in Economics or Business Administration.

The background subjects and the graduate courses need not necessarily be confined strictly to the specific field which the student has selected, but

they should have a bearing upon that field and must be approved by the committee. The background subjects and graduate courses together must be adequate to give a satisfactory knowledge of the field.

GENERAL INFORMATION

Textbooks. Syllabus Fees. Many courses in the College of Business Administration require textbooks. The faculty aims to keep textbook expense as low as is consistent with a high standard of class work.

Syllabus fees of \$.50 are required in the following courses: B. A. 1, 2, 7, 62, 63, 64, 137, 138 and 139. The service rendered is necessary and valuable.

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 82).

Correspondence. Inquiries in regard to the College of Business Administration may be addressed to the dean of the college. All correspondence regarding admission should be sent to the Registrar of the University.

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.

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, 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 one quarter 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 two quarters in residence after graduation and complete a total of 36 credits (including the undergraduate work) in education.

Scope and Aims. The curriculum of 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 instructors 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 twenty-four 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 also needs 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 elementary library science to provide teacher-librarians for small schools. 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. It seems to afford a valuable incentive to many pupils in their English work. 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.

Extension Service. The department of education attempts to render service to the cause of education in many ways besides regular courses of instruction. Members of the department frequently give addresses at teachers' institutes, parent-teacher associations, educational associations, community centers, school dedications, and school commencements. They also conduct such educational surveys as time will permit.

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 appointment 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. Each has a large and vigorous membership.

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, Secondary Education.

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 ten credits of 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 190 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>
Educ. 60. Prin. of Sec. Edu. (Sr. H.S.).....	3
or	
62. Prin. of Sec. Edu. (Jr. H.S.).....	3
90. Measurement in Sec. Educ.....	2
9. Psychology of Sec. Edu.....	3
70. Methods (General and special).....	4 or 5
(depending upon whether taken in conjunction with Edu. 75 or by itself)	
75. Special Methods	2 or 0
(depending upon whether major department gives Edu. 75 in conjunction with Edu. 70)	
71. Practice Teaching	8
120. Educational Sociology	3
	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, 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 hours 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	French	Physical Education
Botany	Geography	for Men
Chemistry	Geology	Physical Education
Civics	German	for Women
Commercial	History	Physics
Teaching	Home Economics	Political Science
Drama	Industrial Arts	Public School Art
Economics	Journalism	Public School Music
English, including	Latin	Sociology
Public Speaking	Mathematics	Spanish
		Zoology and
		Physiology

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
90. Measurements in Secondary Education.....	2
9. Psychology of Secondary Education.....	3
70. Methods (General and special).....	4 or 5
(dependent upon whether or not taken in conjunction with Edu. 75 or by itself)	
75. Special Methods	2 or 0
(dependent upon whether or not major department gives Edu. 75 in conjunction with Edu. 70)	
71. Practice Teaching	8
120. Educational Sociology	3
	<hr/> 25 or 24

By action of the State Board of Education, students will be required to obtain an additional quarter of work after graduation for their five-year normal diploma beginning September, 1931. In September, 1932, two additional quarters will be required and 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 definite contributory courses. By further action of the State Board of Education, September 27, 1930, certification for high school teaching after September, 1931, will require 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, 1931, two quarters beyond graduation will be required; after September, 1932, three quarters; and after September, 1933, four quarters will be required.

2. Earn during the undergraduate and graduate work a minimum total of 36 quarter hours 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 5 additional quarter hours in an academic subject which will normally be the academic major or minor.

4. Furnish satisfactory evidence of having taught successfully for at least twenty-four 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.

EDUCATION REQUIREMENTS IN OTHER STATES

Students who plan to teach in other states or in Washington schools that are on the accredited list of the Northwest Association of Secondary and Higher Schools should find out the requirements in education and arrange to meet them before making contracts to teach. Many states require more credits in education than Washington. The following are the requirements in several states: Arizona, 27 credits; California, 23 to 40 credits, also a year of graduate work; Colorado, 31 credits; Idaho, 15 credits; Illinois, 18 credits; Indiana 28½ credits; Iowa, 21 credits; Kansas, 27 credits; Minnesota, 23 credits; Missouri, 27 credits; Montana, 17 credits; Nebraska, 18 credits; Nevada, 24 credits; New Mexico, 23 credits; North Dakota, 24 credits; Ohio, 36 credits; Oklahoma, 36 credits; Oregon, 22½ credits; Pennsylvania, 27 credits; South Dakota, 23 credits; Texas, 36 credits; Utah, 27 credits; Wisconsin, 22½ credits; Wyoming, 18 to 30 credits, depending upon the kind of certificate.

The North Central Association of Secondary Schools and Colleges requires 22½ credits of education to teach in any of the high schools accredited by that association. That includes several hundred high schools in the states of Illinois, Wisconsin, Michigan, Iowa, Missouri, Nebraska, Ohio, Indiana, North Dakota, South Dakota, Montana and Wyoming.

EDUCATION REQUIREMENTS IN CERTAIN SCHOOLS IN WASHINGTON

The Northwest Association of Secondary and Higher Schools has adopted the same requirement. This association includes the states of Washington, Oregon, Idaho, Montana and Utah. There are accredited by the Northwest Association about twenty-five of the better schools in Idaho, more than thirty in Montana, about thirty-five in Oregon, and about fifty in Washington and about ten in Utah. It is thus seen that students who take only the minimum of 20 credits in education are not eligible to teach in about fifty of our Washington high schools and nearly a hundred in immediately adjoining states. The schools in Washington include the high schools in Aberdeen, Arlington, Auburn, Bellingham, Buckley, Chehalis, Cheney, Clarkston, Cle Elum, Colfax, Davenport, Eatonville, Edmonds, Ellensburg, Everett, Ferndale, Hoquiam, Kelso, Kennewick, Kent, Longview, Monroe, Montesano, Mt. Vernon, Olympia, Pasco, Pomeroy, Prosser, Pullman, Raymond, Rosalia, Seattle, Sedro-Woolley, Snohomish, Spokane, Sprague, Sunnyside, Tacoma, Vancouver, Walla Walla, Waterville, Yakima.

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	Minimum total.....	20
Bacteriology Electives	5		
Minimum total.....	35		

BOTANY

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1. Elementary Botany	5	1. Elementary Botany	5
2. Elementary Botany	5	2. Elementary Botany	5
105,106,107. Morph. and Evol.....	15	105,106,107. Morph. and Evol.....	15
140,141,142. General Fungi }	15	Minimum total.....	25
or			
143,144,145. Plant Physiology }	15		
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. }	10	21-22. Gen. Inorganic Chem. }	10
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	
Minimum total.....	41	131. Organic Chemistry }	10
		and	
		132. Organic Chemistry }	10
		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	1. Introductory Sociology	5
Elective in Political Science.....	15	Elective in Political Science.....	10
Elective in Economics or Sociology...	5		
Minimum total.....	35	Minimum total.....	20

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) (a) 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 pages 10-11.

(b) Required to present satisfactory evidence of sufficient training in shorthand, typewriting and secretarial work to enable the candidate to teach these subjects satisfactorily.

(c) Required to take 25 credits as follows:

<i>Credits</i>	<i>Credits</i>
B.A. 102. Principles of Office Management..... 5	B.A. 120. Business Organization..... 5
110. Advanced Accounting	124. Public Finance
5	167. Personnel Adjustment
	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. General Economics.....10	B.A. 102. Prin. of Off. Management.. 5
7. Economic Geography..... 5	110. Advanced Accounting
54,55,56. Business Law	115. Business Correspondence 5
62,63,64. Principles of Accounting.15	

Candidates are required to present satisfactory evidence of sufficient training in shorthand, typewriting and secretarial work to enable them to teach these subjects satisfactorily.

An average grade of B in all accounting courses 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 in economics must include B.A. 1, 2, General Economics (10 credits), B.A. 160, Advanced Economics (5 credits), 168 Development of Economic Thought (5 credits), and at least 30 additional credits chosen from the following list; an academic 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. 103. Money and Banking.....	5	B.A. 131. Econ. of Public Utilities..	5
104. Economics of Transportation..	5	159. Adv. Money and Banking....	5
106. Econ. of Mktg. and Adver....	5	161. Labor Problems	5
108. Risk and Risk Bearing.....	5	162. European Labor Problems....	5
121. Corporation Finance	5	164. Economics of Real Estate....	5
122. Principles of Investment.....	5	168. Develop. of Econ. Thought....	5
124. Public Finance	5	181. Economics of Consumption... 5	
129. Taxation	5		

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 Composition 1 and 2 or Composition 1, 16, 17. These are general courses and may not be counted toward a major or minor. Composition 16, 17 may be substituted for Comp. 2 when taken concurrently with Literature 64, 65, or 73, 74. It is expected that all majors and minors will take advantage of this substitution.

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

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

LITERATURE

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
73,74. Intro. to Modern Lit.....	6	64,65. Literary Backgrounds.....	6
57. Intro. to Poetry.....	5	57. Introduction to Poetry.....	3
60. Intro. to Shakespeare.....	5	60. Introduction to Shakespeare....	5
Speech 79. Oral Reading of Lit....	3	Speech. 79. Oral Reading of Lit.....	3
90. Chaucer	3	One year course	
Two U.D. Year courses		(See Dept. Statement).....	9
(See Dept. Statement).....	18	117,118,119. Hist. Eng. Lang. or	
117,118,119. Hist. Eng. Lang. or		Adv. Comp.	4
Adv. Comp.	4		30
197. Major English	3		
Senior Examination	0		
	45		

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 a minor in literature or a reasonable substitute therefore is required. For this supplementary material, Literature 64, 65, 60 and one year-course in literature are preferred.

<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
51,52,53. Elementary Acting.....	6	51,52,53. Elementary Acting.....	6
104,105,106. Elem. Workshop	9	127,128,129. Hist. Theatre Art, or	
121,122,123. Adv. Acting and Dir....	9	151,152,153. Rep. Plays.....	6 or 9
127,128,129. Hist. Theatre Art.....	6	104,105,106. Elem. Workshop	9
151,152,153. Rep. Plays	9	Approved Electives	6 or 3
191,192,193. Major Conference	3		34
Senior Examination	0		
	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 a minor in literature or a reasonable substitute therefore is required. For this supplementary material, Literature 64, 65, 60, and one year-course in literature are preferred.

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
40. Essentials of Speaking.....	5	40. Essentials of Speaking.....	5
41. Advanced Speaking.....	3	41. Advanced Speaking.....	3
43. The Speaking Voice.....	3	43. The Speaking Voice.....	3
47,48. Theatre Speech.....	4	138. Rhetoric of Pub. Speaking, or	
38. Argumentation.....	5	139. Forms of Public Address.....	3
79. Oral Reading of Lit.....	3	187. Advanced Voice Problems.....	3
138. Rhetoric of Pub. Speaking, or		188. Adv. Problems in Speaking.....	3
139. Forms of Public Address.....	3	Approved electives in English.....	14
187. Advanced Voice Problems.....	3		34
188. Advanced Problems in Speaking	3		
191. Speech Correction.....	3		
Approved electives in English.....	14		
Senior Examination.....	0		
	49		

HUMAN GEOGRAPHY

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1. Elements of Geography (or 101. Principles of Geog.).....	5	1. Elements of Geog.....	5
11. Weather and Climate (or 111. Principles of Meteorology).....	5	B.A. 7. Economic Geography.....	5
B.A. 7. Economic Geography.....	5	102. Econ. Geog. of N.A.....	5
Geology 1. Introduction to Earth Science (or 6. Elem. of Physiog. or 106. Prin. of Physiog.).....	5	Elective from upper division courses in Geog.	5
Electives from upper division courses in Geog.	15		
Minimum total.....	35	Minimum total.....	20

PHYSICAL GEOGRAPHY & GEOLOGY

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1. Introduction to Earth Science....	5	1. Introduction to Earth Science....	5
5. Rocks and Minerals.....	5	6. Elements of Physiography.....	5
6. Elements of Physiography.....	5	Geog. 11. Weather and Climate....	5
Geog. 1. Elements of Geography....	5	112. Physiog. of East U.S. (or 113. Physiog. of West U.S.).....	5
Geog. 11. Weather and Climate....	5		
112. Physiog. of East U.S. (or 113. Physiog. of West U.S.).....	5	Minimum total.....	20
128. Economic Geology.....	5		
Minimum total.....	35		

GERMAN

For the academic major or minor, students should have had at least two years of high school German. Its equivalent, if taken in college, is German 1, 2, 3. In addition thereto 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>
5 to 12; 50a,b; 51a,b; 52a,b. Second Year Work, about.....	10	5 to 12. Second Year Work, about.....	10
103,104,105. Recent Writers or equiv.		103,104,105. Recent Writers or equiv.	about 6
118a,b. Ger. Prose Read. or equiv.	about 20	118a,b. Ger. Prose Read. or equiv.	
139,140. Stud. in Ger. Lit. or equiv.		139,140. Stud. in Ger. Lit. or equiv.	
142. Lyrics and Ballads or equiv.		142. Lyrics and Ballads or equiv.	
180,181,182. 19th Cent. Literature or equiv.		109,110,111. Adv. Composition.....	3
109,110,111. Adv. Composition.....	3	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 Education 75L, the teachers' course.

HISTORY

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

Academic Minor. Minimum 20 credits, including 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 117).

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.....	10	1-2. Medieval and Modern European History (or its equivalent), 10 credits required.
5-6. English History	10	
71-72-73. Ancient History	9	
57-58-59. United States		
or	9	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.
143-144-145. United States		
2. Preferential group: 10 additional credits, of which 5 and not more are to be selected from European courses below, and the remainder from the American group, as follows:		
149. National Development	5 or 6	
or		
163-164-165. Northwest Hist.		
114. Renaissance		
or		
115. Reformation		
or		
129. French Revolution	5	
or		
130. Europe, 1814-1870		
or		
131. Europe Since 1870		
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 fifty 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. Elements 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. Magazine and Feature Writ. 4			
125. Principles of H.S. Journalism. 5			
250. Research . . .	3-5		
	<hr/> Minimum total.....35		

A student electing a major or a minor in journalism must conform to 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 eighteen credits in Upper Division courses):		Latin 21. Cicero: De Senectute; Latin Literature (MacKail).....	5
Latin 21. Cicero: De Senectute; 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.....	50	Minimum total.....	20

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.	9
U.D. Electives in Math.	9	Minimum total.....	24
Minimum total.....	39		

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 should 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. Entrance or placement examinations will be required in piano and voice.

<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. Elementary Or. Inst.	9	117. Composition	5
101. Advanced Harmony	5	Applied	13½
114. Intermediate School Music.	2		28½
115. Choral Conducting	2	<i>Minor (for non-music majors):</i>	
116. Methods	2	51,53. Harmony	10
127,128. Choral Forms.....	4	56. School Music	5
154,155,156. Supervision	9	114. Int. School Music }	8
180. Orchestra Conducting	2	115. Choral Cond. }	
	50	116. Methods }	
		127. Choral Forms }	
		or	
		40,41. El. Orchestra Instruction.....	6
		and	
		180. Orchestra Conducting	2
			21 or 23

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....	5	145. Prin. of Phys. Edu.....	3
122. Kinesiology	3	Adv. Athletic Methods.....	4
135,136. Individual Gymnastics.....	4		
141,142,143. Phys. Edu. Methods....	9	Minimum total.....	21
145. Prin. of Phys. Edu.....	3		
150. Phys. Edu. Admin.....	5		
153. Prin. of Health Edu.....	2		
156,157,158. Adv. Athletic Methods..	6		
	44		

Minimum total.....44

Required foundation courses:

Biological Sciences:

Zoology 1

Physiology 50

Anatomy 101, 110, 111, 112

Bacteriology 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
101-102. Survey of Gymnastics.....	6	112. Elementary Athletic Games....	3
111. Rhythms and Dramatic Games..	3	162-163-164. Methods in Phys. Edu..	15
112. Elementary Athletic Games....	3	145. Principles in Phys. Edu.....	3
113. Org. and Admin. of Playgrounds	3		
115. Physiology of Exercise.....	5	Minimum total.....	24
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 Educ.....	2		
162-163-164. Methods in Phys. Educ..	15		
	59		

Minimum total.....59

Required supplementary sciences:

Anatomy 101, 110, 111, 112.....	6
Physiology 50	6
Zoology 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 for 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 4,5,6,101. General Physics }	.....20	1,2,3. General Physics } or 4,5,6. General Physics }	.....15
105. Elec. and Magnetism.....	5	Ten credits from the following courses:	
160. Optics	5	101. Introd. to Mod. Theories.....	5
Physics Electives	10	105. Elec. and Magnetism.....	5
Minimum total.....	40	160. Optics	5
		Minimum total.....	25

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

To be recommended to teach physics, a minimum of 30 credits, with an average grade better than C is required.

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 Government	5	1. Comparative Government	5
101. Intro. to Amer. Const. Govt.	2	101. Intro. to Amer. Const. Govt.	2
151. American National Govt.	5	151. American National Govt.	5
161. Municipal Government	5	161. Municipal Government	5
Electives in Political Science	18	Electives	3
Minimum total.....	35	Minimum total.....	20

PUBLIC SCHOOL ART

Requirements for academic majors and minors in P.S.D.

Both major and minor are required.

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
5,6,7. Drawing	9	Applied Arts.	
9,10,11. Art Structure	9	For Majors in Public School Art only.	
53. Art Structure	3	54,55. Art Structure	6
56,57,58. Drawing and Painting	9	151. Illustration	3
160. Life	3	166. Stage Design	3
116. Illustration	3	105,106. Art Structure	6
101,102. Public School Art	4	103,104. Pottery, or	
126. History of Art	2	157,158. Metal Work	6
Minimum total.....	42	Minimum total.....	24

Special Minor open to Majors in Home Economics, Group V:

5,6. Drawing	6
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
Educ. 75K. Teachers' Course in		Educ. 75K. Teachers' Course in	
French	2	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.....	9	*131,132,133. Lyric Poetry.....	9
*141,142,143. The French Drama....	6	*141,142,143. The French Drama....	6
*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
Educ. 75Y. Teach. Course in Span..	2	Educ. 75Y. Teach. Course in Span..	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 Ecology }.....	5	55. Human Ecology }.....	5
65. The City }.....	5	65. The City }.....	5
66. Group Behaviour	5	66. Group Behaviour	5
Electives from courses offered in the department after consultation regarding the special field of interest.....		Electives from courses offered in the department after consultation regarding the special field of interest.....	
	20		10
Minimum total.....	35	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 Electives	25		Zoology 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 133) 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 B.S. 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 operation 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 fill a growing demand for technically trained engineers who have a thorough foundation training in economics and in business methods and principles. 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, telephones, 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 of specialization to such degree as is deemed advisable.

ENGINEERING LABORATORIES

For description of laboratories, see pages 44 to 46.

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 55, 63, 64.

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 engineering 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 writing—that is, correct spelling, punctuation, and grammar—should have become automatic by the time a student leaves high school, and forms a necessary basis for the intensive course in technical writing taken by engineering students near or after the close of the sophomore year. An examination, given to sophomores on the third Tuesday of the autumn quarter tests the ability of the student to recognize and to construct sentences correct in form, and determines his admission to Composition 100. For those who fail, a non-credit course, Composition A, is provided; but in order to avoid consequent irregularities of schedule, high school students are urged to clear away such deficiencies, and to make the use of correct English habitual, before they enter 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 B.S. 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 (B.S.) or (M.S.) in their respective lines, who give evidence of having been engaged continuously in acceptable engineering work and who present satisfactory theses.

Arthur A. Denny Fellowship. One fellowship of \$500 is open to graduate students in the department of civil engineering. Awarded by the department on the basis of scholastic excellence and general merit, but only to one who needs financial assistance. Applicants must be residents of the State of Washington. Applications for this fellowship should be made to the head of the department on blanks supplied by the dean of the Graduate School, and must be in his hands on or before March 15 preceding the academic year for which the fellowship is to be granted.

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..... 1%		or Phys. Edu..... 1%		or Phys. Edu..... 1%	

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..... 1%		or Phys. Edu..... 1%		or Phys. Edu..... 1%	

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. Aircr. 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..... 1%		or Phys. Edu..... 1%		Military or Naval Sci.	
				or Phys. Edu..... 1%	

College of Engineering

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. Theory and practice.....	5	Chem. 182. Theory and Practice.....	5	Chem. 173. Ch. Engr..	3
Chem. 171. Chem. Engr.	5	Chem. 172. Chem. Engr.	5	Electives	12
Chem. 176. Chem. Engr.		Chem. 177. Chem. Engr.			
Thesis.....	2	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. Curves and Earthwork.....	4	C.E. 135. Mechanics... 3		C.E. 136. Mechanics... 3	
Military or Naval Sci. or Phys. Edu.....	1%	Military or Naval Sci. or Phys. Edu.....	1%	Military or Naval Sci. or Phys. Edu.....	1%

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. 162. Matls. of Constr.....	3	C.E. 163. Matls.—Tim- ber and Steel....	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

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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.— Steel.....	4	C.E. 154. Sanit. Des... 3	
C.E. 158. Sewerage... 3		B.A. 54. Bus. Law.... 3		C.E. 177. Str. Des.— Timber.....	3
C.E. 175. Str. Des.— 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.— Timber.....	3
C.E. 158. Sewerage... 3	C.E. 176. Str. Des.— Steel.....	C.E. 185. Adv. Str. Des. 4	
C.E. 175. Str. Des.— R.C.....	4	C.E. 199. Engr. Rel.... 3	
C.E. 181. Adv. Str. Anal.....	3	English Elective	3
Elective	3	Elective	3

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.—	
C.E. 158. Sewerage.... 3		C.E. 155. Water Sup... 3		Timber..... 3	
C.E. 175. Str. Des.—		C.E. 176. Str. Des.—		C.E. 199. Engr. Rel.... 3	
R.C..... 4		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..... 1%		or Phys. Edu..... 1%		or Phys. Edu..... 1%	

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	Electives 6	Electives 10
Banking..... 5		
Elective 5		

Not less than 14 elective hours 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..... 1%		or Phys. Edu..... 1%		or Phys. Edu..... 1%	

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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

E.E. 163. Alt. Cur.... 6	E.E. 195, 196. El. Trans. 4	E.E. 198. El. Trans... 2
E.E. 164. Alt. Cur. Lab. 4	Physics 154. Elec. Meas. 3	Thesis or electives.... 4
Electives 6	Thesis or electives.... 4	Electives10
	Electives 5	

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

The following electives are offered in the several divisions of electrical engineering, and will be given as scheduled, if there is sufficient call:

	<i>Credits</i>
E.E. 131. Electrical Communication	2
E.E. 132. Telephone Transmission	4
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	2 to 5 (each)
E.E. 181, 183. Radio	5 (each)
E.E. 186, 188. Thesis	2 to 5 (each)
E.E. 191. Engineering Equations	3
E.E. 190, 192. Seminars	4 (each)
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..... 1%		or Phys. Edu..... 1%		or Phys. Edu..... 1%	

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 Plann. 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. Matls. 3	Design..... 3
M.E. 183. Thermo. &	M.E. 182. Heat & Vent. 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.

COURSES OF STUDY

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

ENGINEERING EXPERIMENT STATION

For a description of the work of the Engineering Experiment Station, see page 52.

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. In music, there are curricula of four years leading to the degree of bachelor of music, with a major in applied music or composition, to the degree of bachelor of arts in music, and a five-year curriculum leading to the degree of bachelor of music with a degree in 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.

Scholarships in Piano Study. Prof. A. F. Venino offers an annual scholarship to the student showing the greatest proficiency and promise in piano playing at the end of his junior year. The benefits of this scholarship will apply to the work of the student during his senior year.

Beecher Kiefer Memorial 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. Applications 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 any branch of applied music.

At the beginning of the fall term, a private tryout will be held before the committee of judges, which will be composed of Mu Phi Epsilon members and members of the faculty of the music department. The award will be made according to talent, financial situation, promise, and general scholastic standing.

It is a requirement: (1) That the scholarship be awarded a University of Washington student of at least one year's attendance in the music department of the University.

(2) That Mu Phi Epsilon members shall not be eligible for the competition.

The winner must select a teacher from the music faculty.

Applications must be filed with the dean of the College of Fine Arts before the end of the first week of the autumn quarter.

Beginning in 1929, the scholarship was changed from a loan to a gift.

Ladies Musical Club Award. The Ladies' Musical Club of Seattle, for the year 1931-32, will give an award of \$100 to the senior girl in the College of Fine Arts, department of music, whose work has been the most productive and who has been the greatest inspiration in the advancement of music during her four years at college.

The Charles H. Bebb Prize in Architecture. Mr. Charles H. Bebb, Seattle, offers an annual prize of books to the value of \$100 for the best design in some problem of architecture.

The Gladding McBean Prize. The Gladding McBean Company offers a prize of fifty dollars in the department of architecture to the sophomore, junior, or senior student who submits the best design in terra cotta treatment.

The American Institute of Architects' Prize. The American Institute of Architects offers annually a silver medal and a book to the graduating senior with the most distinguished record in design for the entire course.

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 55, 63, 64.

SPECIAL REQUIREMENTS

GENERAL

1. *Foreign Language.* Thirty-five hours 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 sight-reading, theory, voice and piano. All students must satisfy the department that they have completed the equivalent of Music 9A of the school music piano course (see page 22). Piano majors note special requirements on page 23. If corresponding proficiency on other approved instruments is substituted for this entrance requirement, a student shall complete Music 9A before graduation.

Major students in music may earn not more than six of the required number of applied music credits in voice training and orchestral instruments classes.

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

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.

ADMISSION TO GRADUATE STANDING

A bachelor's degree from a college or university of good standing is required for admission to the Graduate School.

Two advanced degrees in music are offered: master of arts in music (for majors in composition) and master of arts in music education (for majors in school music).

A committee from the music faculty will examine each candidate as to his preparation in required subjects, and any deficiencies shall be made up without graduate credit.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN MUSIC

(a) The equivalent of all music courses now required for the degree of bachelor of music with major in composition.

(b) Two years spent in the study or practice of music subsequent to the granting of the bachelor's degree.

(c) Forty-five credits, of which 24 to 27 shall be in composition, 9 to 12 in literature, philosophy or psychology, and 9 for a thesis which shall be an original composition in one of the larger forms, acceptable to a committee of the faculty.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN MUSIC EDUCATION

(a) The equivalent of all music courses now required for the degree of bachelor of music with major in school music.

(b) Two years of approved teaching experience, of which one year must precede the graduate courses in music education.

(c) Forty-five credits, of which 12 to 15 shall be in music education, 12 in composition, 12 to 15 in education, philosophy or psychology, and 6 to 9 for a thesis in the student's field of research.

For further details, see Graduate School section.

CURRICULA OF THE COLLEGE OF FINE ARTS

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 APPLIED MUSIC

Students following this course must show a marked talent for performance. Major students in any branch of applied music must earn not less than 30 credits in that branch. The remaining credits in applied music may be earned in other branches.

Unless excused by reason of advanced standing on entrance, students who major in courses in applied music 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>
Music 18. Applied	3	Mus. 19. Applied	3	Mus. 20. Applied	3
15. S.R. & Er. T.	3	16. S.R. & Er. T. . . .	3	51. El. Harmony	5
Comp. 1. Composition . .	5	Comp. 2. Composition . .	5	Modern Language	5
Modern Language	5	Modern Language	5	L.A. elective	3
Military or Naval Sci. .	1½	Military or Naval Sci. .	1½	Military or Naval Sci. .	1½
or		or		or	
Phys. Edu. (women). .	1	Phys. Edu. (women). .	1	Phys. Edu. (women). .	1

College of Fine Arts

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mus. 68. Applied.....	3	Mus. 69. Applied.....	3	Mus. 70. Applied.....	3
4. App. & Hist.....	3	5. App. & Hist.....	3	6. App. & Hist.....	3
53. Int. Harmony....	5	101. Adv. Harmony... 5		112. Forms.....	5
L.A. elective (men)....	5	Physics 50. Sd. & Mus..	5	Physics 51. Sd. & Mus..	5
Phys. Edu. lecture		Military or Naval Sci... 1%		Military or Naval Sci... 1%	
(women)	5	or		or	
Military or Naval Sci... 1%		Phys. Edu. (women). 1		Phys. Edu. (women). 1	

THIRD YEAR

Mus. 118. Applied.....	3	Mus. 119. Applied.....	3	Mus. 120. Applied.....	3
10. Chorus.....	1	11. Chorus	1	*12. Chorus	1
or		or		or	
31. Orchestra.....	2	32. Orchestra	2	33. Orchestra	2
104. Adv. History....	2	105. Adv. History....	2	106. Adv. Hist.	2
Soc., Pol. Sci. or Econ. 5		109. Counterpoint . . .	5	117. Composition . . .	5
Elective	5	Elective	5	Elective	5

FOURTH YEAR

Mus. 168. Applied.....	3	Mus. 169. Applied.....	3	Mus. 170. Applied.....	3
10. Chorus.....	1	11. Chorus	1	*12. Chorus	1
or		or		or	
31. Orchestra.....	2	32. Orchestra	2	33. Orchestra	2
151. Adv. App.....	2	152. Adv. App.	2	153. Adv. App.	2
Phil. 129. Esthetics....	5	157. Adv. Comp.	5	199. Sen. Recital ...	2
†Elective	3	†Elective	3	†Elective	3

FOR THE DEGREE OF BACHELOR OF MUSIC IN SCHOOL MUSIC OR INSTRUMENTAL SCHOOL MUSIC

1. Special requirements for school music majors:
 - a. Note school music piano course outlined on page 333.
 - b. All majors in school music are required to earn nine credits in voice training preferably in the first two years. Three of these nine may be earned in class work.
2. Special requirements for instrumental school music majors:
 - a. All students, upon entrance, must demonstrate proficiency upon at least one orchestral instrument.
 - b. All students must satisfy the requirements of Music 9A of the school music piano course.
 - c. All students must complete a year of each of applied study in voice, wood-wind, 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>
Mus. 18. Applied.....	1½	Mus. 19. Applied.....	1½	Mus. 20. Applied.....	1½
10. Chorus	1	11. Chorus	1	*12. Chorus	1
or		or		or	
31. Orchestra	2	32. Orchestra	2	33. Orchestra	2
15. S. R. & Er. T....	3	16. S. R. & Er. T....	3	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... 1%	
Military or Naval Sci... 1%		Military or Naval Sci... 1%		or	
or		or		Phys. Edu. (women). 1	
Phys. Edu. (women). 1		Phys. Edu. (women). 1			

SECOND YEAR

Mus. 68. Applied.....	1½	Mus. 69. Applied.....	1½	Mus. 70. Applied.....	1½
4. App. & Hist.....	3	5. App. & Hist.....	3	6. App. & Hist.....	3
10. Chorus	1	11. Chorus	1	*12. Chorus	1
or		or		or	
31. Orchestra	2	32. Orchestra	2	33. Orchestra	2
53. Int. Harmony	5	101. Adv. Harmony ...	5	56. School Music ..	5
Elective (men)	5	Physics 50. Sd. & Mus..	5	Physics 51. Sd. & Mus..	5
Military or Naval Sci... 1%		Military or Naval Sci... 1%		Military or Naval Sci... 1%	
or		or		or	
Phys. Edu. (women). 5		Phys. Edu. (women). 1		Phys. Edu. (women). 1	

† Piano majors must take Music 165, 166, 167.

*Only those who have successfully completed the work in Music 11 will be eligible for registration in Music 12.

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>
Mus. 118. Applied.....	1½	Mus. 119. Applied.....	1½	Mus. 120. Applied.....	1½
40. Or. Instr.	3	41. Or. Instr.	3	42. Or. Instr.	3
114. Int. Sch. M.....	2	115. Cho. Cond.	2	109. Counterpoint ...	5
127. Cho. Forms	2	128. Cho. Forms	2	116. Jr. H.S. Mus....	2
Edu. 60. Sec. Edu.....	3	Edu. 90. Meas.....	2	129. Cho. Forms	2
Soc., Pol. Sci. or Econ.	5	L.A. elective	5	Edu. 9. Psych.....	3

Group II. Instrumental School Music

Mus. 118. Applied.....	1½	Mus. 119. Applied.....	1½	Mus. 120. Applied.....	1½
40. Or. Instr.	3	41. Or. Instr.	3	42. Or. Instr.	3
127. Cho. Forms	2	115. Cho. Cond.	2	109. Counterpoint ...	5
133. Sym. Orch.	2	134. Sym. Orch.	2	116. Jr. H.S. Mus....	2
Edu. 60. Sec. Edu.....	3	Edu. 90. Measurements.	2	135. Sym. Orch.	2
Soc., Pol. Sci. or Econ..	5	L.A. elective	5	Edu. 9. Psych.....	3

FOURTH YEAR

Group I. School Music

Mus. 168. Applied.....	1½	Mus. 169. Applied.....	1½	Mus. 170. Applied.....	1½
151. Adv. Appre.	5	112. Forms	5	117. El. Comp.	5
154. Sr. H.S. Mus....	2	152. Adv. Appr.	2	153. Adv. Appr.	2
180. Or. Cond.	2	155. Mus. Sup.	2	156. Mus. Sup.	2
Edu. 70. Int. H.S. Pro..	5	L.A. elective	5	Edu. 120. Edu. Soc....	3
Elective	3			L.A. elective	2

Group II. Instrumental School Music

Mus. 168. Applied.....	1½	Mus. 169. Applied.....	1½	Mus. 170. Applied.....	1½
140. Adv. Or. In.....	3	112. Forms	5	117. El. Comp.	5
154. Sr. H.S. Mus....	2	141. Adv. Or. In.....	3	142. Adv. Or. In.....	3
180. Or. Cond.	2	155. Mus. Sup.	2	156. Mus. Sup.	2
Edu. 70. In. H.S. Pro..	5	181. Or. Cond.	2	Edu. 120. Edu. Soc....	3
L.A. electives	2	L.A. elective	2	L.A. elective	2

FIFTH YEAR

Group I. School Music

Mus. 168. Applied.....	1½	Mus. 169. Applied.....	1½	Mus. 170. Applied.....	1½
190. Bach. etc.	4	191. 18th & 19th C..	4	192. Contemp. Comp. .	4
Phil. 129. Esthet.....	5	Edu. 71. Cadet Teach..	8	L.A. elective	4
L.A. electives	5	L.A. electives	7		

Group II. Instrumental School Music

Mus. 168. Applied.....	1½	Mus. 169. Applied.....	1½	Mus. 170. Applied.....	1½
151. Adv. App.	2	143. Orchestra	5	153. Adv. App.	2
190. Bach. etc.	4	152. Adv. App.	2	L.A. elective	6
Phil. 129. Esthet.	5	191. 18th & 19th C..	4		
L.A. elective	3	Edu. 71. Cadet Teach..	8		

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>
Mus. 18. Applied.....	1½	Mus. 19. Applied.....	1½	Mus. 20. Applied.....	1½
4. App. & Hist.....	3	5. App. & Hist.....	3	6. App. & Hist.....	3
10. Chorus	1	11. Chorus	1	*12. Chorus	1
or		or		or	
31. Orchestra	2	32. Orchestra	2	33. Orchestra	2
16. S. R. & Er. T.....	3	51. El. Harmony	5	53. Int. Harmony ...	5
Comp. 1. Composition..	5	Comp. 2. Composition..	5	Phys. Edu. lecture	
Military or Naval Sci..	1½	Military or Naval Sci..	1½	(women)	5
or		or		Military or Naval Sci..	1½
Phys. Edu. (women). 1		Phys. Edu. (women). 1		Elective (men)	5

*Only those who have successfully completed the work in Music 11 will be eligible for registration in Music 12.

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mus. 68. Applied.....	1½	Mus. 69. Applied.....	1½	Mus. 70. Applied.....	1½
101. Adv. Harmony . . .	5	109. Counterpoint . . .	5	112. Forms	5
Econ., Pol. Sci. or Soc..	5	Modern Language . . .	5	Modern Language . . .	5
Modern Language	5	Physics 50. Sd. & Mus..	5	Physics 51. Sd. & Mus..	5
Military or Naval Sci... 1½		Military or Naval Sci... 1½		Military or Naval Sci... 1½	
or		or		or	
Phys. Edu. (women). 1		Phys. Edu. (women). 1		Phys. Edu. (women). 1	

THIRD YEAR

Mus. 118. Applied.....	1½	Mus. 119. Applied.....	1½	Mus. 120. Applied.....	1½
10 or 31. Cho. or		11 or 32. Chor. or		*12 or 33. Chor. or	
Orch.	1-2	Orch.	1-2	Orch.	1-2
104. Adv. Hist.	2	105. Adv. Hist.	2	106. Adv. Hist.	2
117. Comp.	5	143. Orches.	5	Elective	10
Elective	5	157. Adv. Comp.	5		

FOURTH YEAR

Mus. 168. Applied.....	1½	Mus. 169. Applied.....	1½	Mus. 170. Applied.....	1½
151. Adv. App.	2	152. Adv. App.	2	153. Adv. App.	2
163. Adv. Count. . . .	5	197A. Comp.	3	197B. Adv. Comp. . . .	3
Elective	3	Elective	10	Elective	9
Phil. 129. Esthet.....	5				

FOR THE DEGREE OF BACHELOR OF ARTS IN MUSIC

Students entering this course must satisfy the examiners as to their proficiency in one branch of applied music beyond entrance requirements.

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	
31. Orchestra	2	32. Orchestra	2	33. Orchestra	2
15. S. R. & Er. T....	3	16. S. R. & Er. T....	3	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... 1½		Military or Naval Sci... 1½		Arts	5
or		or		or	
Phys. Edu. (women). 1		Phys. Edu. (women). 1		Elective	5
				Military or Naval Sci... 1½	
				or	
				Phys. Edu. (women). 1	

SECOND YEAR

Mus. 4. App. & Hist... 3	Mus. 5. App. & Hist... 3	Mus. 6. App. & Hist... 3
53. Int. Harmony . . . 5	101. Adv. Harmony . . 5	117. El. Composition . . 5
Elective 3	Physics 50. Sd. & Mus.. 5	Physics 51. Sd. & Mus.. 5
Phys. Edu. lecture	Military or Naval Sci... 1½	Military or Naval Sci... 1½
(women) 5	or	or
Military or Naval Sci... 1½	Phys. Edu. (women). 1	Phys. Edu. (women). 1
Elective (men) 3		

THIRD YEAR

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

FOURTH YEAR

Music elective 5	Music elective 5	*L.A. electives 15
Phil. 129. Esthet..... 5	*L.A. electives 10	
*L.A. elective 5		

*Only those who have successfully completed the work in Music 11 will be eligible for registration in Music 12.

†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 10 credits of elective for this science requirement.

‡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.

The University recognizes that its function in teaching this profession is not only that students may obtain a general knowledge of architecture, but also that they may be able to cope with problems that occur in actual practice.

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. Most of the work is done under the programs of the Beaux Arts Institute of Design, New York, and is sent there for judgment where it is placed in competition with work of the leading schools of architecture in this country. 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 modelling are properly related to design; mathematics, physics, 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, Grade I; Arch. 104, 105, 106, 107, Grade II; and Arch. 154, 155, 156, 157, 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	
4. El. of Design.... 4		5. El. of Design.... 4		6. El. of Design.... 4	
7. Graphics 1		8. Graphics 1		9. Graphics 1	
47. El. Bldg. Const.. 3		48. El. Bldg. Const.. 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 Physical Edu.... 1%		or Physical Edu.... 1%		or Physical Edu.... 1%	

SECOND YEAR

Arch. 51. Hist. of Arch. 2		Arch. 52. Hist. of Arch. 2		Arch. 53. Hist. of Arch. 2	
54. Design Gr. I.... 5		55. Design Gr. I.... 5		56. Design Gr. I.... 5	
Math. 54. Trig..... 3		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 Physical Edu.... 1%		or Physical Edu.... 1%		or Physical Edu.... 1%	

THIRD YEAR

Arch. 40. Water Color.. 2		Arch. 41. Water Color. 2		Arch. 42. Water Color. 2	
101. Hist. of Arch... 2		102. Hist. of Arch... 2		103. Hist. of Arch... 2	
104. Design Gr. II... 5		105. Design Gr. II... 5		106. Design Gr. II... 5	
120. Work. Draw. ... 2		117. Bldg. Const. ... 3		118. Bldg. Const. ... 3	
C.E. 130. Theory Constr. 3		121. Work. Draw. ... 2		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	
112 Freehand Draw... 3		125. Pencil Sketch .. 1		*142. Hist. of Orna... 2	
140. Hist. of Orna... 2		141. Hist. of Orna... 2		151. Hist. of Arch... 2	
Physics 1. General.... 4		154. Design Gr. III.. 5		155. Design Gr. III.. 5	
Electives 2		Physics 2. General.... 5		Physics 113. Accous. & Ill. 4	
				Electives 2	

FIFTH YEAR

Arch. 152. Theory of Arch. 2		Arch. 153. Arch. Materials 2		Arch. 158. Thesis..... 8	
156. Design Gr. III.. 5		157. Design Gr. III.. 5		159. Spec. & Off. Pr. 2	
P.S.D. 160. Life..... 3		170. Senior Mech. ... 2		P.S.D. 162. Life..... 3	
B.A. 54. Bus. Law.... 3		P.S.D. 161. Life 3		Electives 2	
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>
P.S.D. 5. Drawing.....	3	P.S.D. 6. Drawing....	3	P.S.D. 7. Drawing.....	3
9. Art Struc.	3	10. Art Struc.	3	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.....	1%	or Physical Edu.....	1%	or Physical Edu.....	1%

SECOND YEAR

P.S.D. 53. Art Struc...	3	P.S.D. 54. Art Struc...	3	P.S.D. 20. Sculp. Appre.	2
56. Drawing and Ptg.	3	57. Drawing and Ptg..	3	55. Art Struc.....	3
L.A. electives	5	L.A. 11. Intro. Fine		58. Drawing and Ptg..	3
Electives	4	Arts or Electives...	5	Electives	7
Military or Naval Sci.		Electives	4	Military or Naval Sci.	
or Physical Edu.....	1%	Military or Naval Sci.		or Physical Edu.....	1%
		or Physical Edu.....	1%		

THIRD YEAR

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

FOURTH YEAR

P.S.D. 150. Illus.....	3	P.S.D. 151. Illus.....	3	P.S.D. 152. Illus.....	3
or		or		or 160. Life...	3
166. Art Struc.	3	167. Art Struc.	3	P.S.D. Electives	6
P.S.D. Electives	6	P.S.D. 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>
P.S.D. 5. Drawing.....	3	P.S.D. 6. Drawing....	3	P.S.D. 7. Drawing.....	3
9. Art Struc.	3	10. Art Struc.	3	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.....	1%	or Physical Edu.....	1%	or Physical Edu.....	1%

SECOND YEAR

P.S.D. 53. Art Struc...	3	P.S.D. 54. Art Struc...	3	P.S.D. 55. Art Struc...	3
56. Drawing and Ptg.	3	57. Drawing and Ptg.	3	58. Drawing and Ptg.	3
L.A. Electives	5	L.A. 11. Intro. Fine		Pol. Sci., Econ., Soc...	5
Electives	3	Arts or Electives...	5	Electives	4
Military or Naval Sci.		Electives	3	Military or Naval Sci.	
or Physical Edu.....	1%	Military or Naval Sci.		or Physical Edu.....	1%
		or Physical Edu.....	1%		

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. Life	3	P.S.D. 104. Pottery....	3	P.S.D. 20. Sculp.	
103. Pottery	3	or		Apprec.	2
157. Metal Work	3	158. Metal Work	3	Edu. Electives	3
126. Hist. of Ptg.....	2	Laboratory Science	5	Laboratory Science	5
Edu. 60. Sec. Edu.....	3	Edu. 70. Intro. to H.S.		Electives	4
Edu. electives	3	Procedure	5		
		Electives	3		

FOURTH YEAR

P.S.D. 150. Illustration. 3	P.S.D. 151. Illustration. 3	P.S.D. 152. Illustration. 3
163. Composition 3	105. Lettering, Art	106. Posters, Art
Phil. 129. Esthetics.... 5	Structure	Structure
Electives 5	102. Pub. Sch. Art.... 3	101. Pub. Sch. Art... 2
	Edu. 71. Cadet Teach.. 8	Electives 6

Suggested electives for public school art majors—Arch. 3, P.S.D. 161, 162, 166, 167, 169, 170, 171.

Candidates for the Normal Diploma with a recommendation to teach public school art should present an average grade of B or better in the major and minor art subjects.

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>
P.S.D. 5. Drawing....	3	P.S.D. 6. Drawing....	3	P.S.D. 7. Drawing....	3
9. Art. Struc.	3	10. Art Struc.	3	10. 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....	1%	or Physical Edu....	1%	or Physical Edu....	1%

SECOND YEAR

Arch. 1. Appreciation..	2	Arch. 2. Arch. Apprec..	2	Arch. 3. Arch. Apprec..	2
4. Elem. of Design... 4		5. Elem. of Design... 4		6. Elem. of Design... 4	
7. Graphics 1		8. Graphics 1		9. Graphics 1	
P.S.D. 80. Furn. Design. 3		P.S.D. 81. Furn. Design. 3		P.S.D. 81. Furn. Design. 3	
L.A. Electives 5		Electives 4		Electives 4	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Edu....	1%	or Physical Edu....	1%	or Physical Edu....	1%

THIRD YEAR

PSD 110. Inter. Design. 5	PSD 111. Inter. Design. 5	PSD 112. Inter. Design. 5
Pol. Sci., Soc., Econ... 5	Laboratory Science 5	Laboratory Science 5
Electives 5	L.A. 11. Intro. Fine Arts, or Electives.. 5	Electives 5

FOURTH YEAR

P.S.D. 126. Hist. of Ptg. 2	H.E. 47. House Furn.. 3	PSD 20. Sculp. Apprec. 2
172. Inter. Design ... 5	PSD 173. Inter. Design. 5	174. Inter. Design ... 5
H.E. 119. Textiles..... 5	Arch. 102. History.... 2	Arch. 103. History..... 2
Arch. 101. History..... 2	Electives 6	Electives 7
Electives 2		

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>
P.S.D. 5. Drawing.....	3	P.S.D. 6. Drawing.....	3	P.S.D. 7. Drawing.....	3
9. Art Struc.	3	9. Art Struc.	3	9. 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....	1½	or Physical Edu....	1½	or Physical Edu....	1½

SECOND YEAR

P.S.D. 56. Painting....	3	P.S.D. 57. Painting....	3	P.S.D. 58. Painting....	3
65. Drawing and Ptg. 3.		66. Drawing & Ptg.. 3		67. Drawing and Ptg. 3	
or		or		or	
*72. Sculpture	3	*73. Sculpture	3	*74. Sculpture	3
L.A. Electives	5	L.A. 11. Intro. Fine		Electives	10
Electives	5	Arts, or Electives..	5	Military or Naval Sci.	
Military or Naval Sci.		Military or Naval Sci.		or Physical Edu....	1½
or Physical Edu....	1½	or Physical Edu....	1½		

THIRD YEAR

Group I—Painting

P.S.D. 107. Portrait... 3	P.S.D. 108. Portrait... 3	P.S.D. 109. Portrait... 3
126. Hist. of Ptg.... 2	105. Lettering, Art	106. Posters, Art
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

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

FOURTH YEAR

Group I—Painting

P.S.D. 160. Life..... 3	P.S.D. 161. Life..... 3	P.S.D. 162. Life..... 3
163. Composition . . . 3	164. Composition . . . 3	165. Composition . . . 3
Electives 10	Electives 10	Electives 10

Group II—Sculpture

P.S.D. 132. Sculpture.. 3	P.S.D. 133. Sculpture.. 3	P.S.D. 134. Sculpture.. 3
136. Sculpture Comp. . 3	137. Sculpture Comp.. 3	138. Sculpture Comp.. 3
160. Life 3	161. Life 3	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.

*P.S.D. 72, 73, 74 required if major is to be sculpture.

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 rooms and an assembly hall seating 250. Covering a ground 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.

FOREST CLUB

All students in the College of Forestry are eligible to membership in the Forest Club. It aims: to promote acquaintance and good fellowship among 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.

Officers of the club for the year 1930-1931 are: president Richard B. Harris, Jr.; vice president, James Lewis; secretary-treasurer, Joe Kennedy; editor, David Hervey.

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 is intensely practical and 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.

FORESTRY AND LUMBERING LABORATORIES

For description of laboratories, see pages 47 and 48.

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 55, 63, 64.

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

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

Advanced Standing. Credit will be given for subjects pursued at other colleges of recognized rank upon presentation to the registrar of certificates that such subjects have been satisfactorily completed. Graduates in this institution and others of similar rank are admitted to graduate standing.

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, at least 46 credits in subjects 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. In no case shall more than 25 elective credits in any department other than forestry be allowed for graduation. Exclusive of shop and military or naval science, 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 required for the degree.

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 toward a graduate degree.

For more detailed information on graduate work, see Graduate School section.

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.

SCHOLARSHIPS AND PRIZES

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.

Xi Sigma Pi Honor Roll. The University of Washington chapter of Xi Sigma Pi, national forestry honor fraternity, has provided a mounted silver scroll, upon which the name of the freshman member of the Forest Club attaining the highest scholastic average will be inscribed yearly.

The Agnes Healy Anderson Forestry Trust Fund. The income from this fund, which was established in 1929, is chiefly available for graduate research fellowships to be awarded on a competitive basis. A limited amount is available for loans to needy students and for scholarships. The fund is thus divided into two parts, the Agnes Healy Anderson Research Fellowship Fund and the Agnes Healy Anderson Scholarship and Loan Fund. The terms of the research fund allow some leeway in the number of fellowships to be created annually and the amount of each.

CURRICULA OF THE COLLEGE OF FORESTRY

The curricula of the College of Forestry are 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 very fair degree of specialization can be made 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. Electives in lieu of those listed may be taken with the sanction of the dean.

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 no student will be admitted to advanced subjects who has not had the necessary prerequisites given with the course prescriptions below:

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>
For. 2. Intro. to For...	3	For. 1b. Dendrology...	3	For. 1c. Dendrology...	3
1a. Dendrology	3	3. Intro. to For.....	3	4. Fire Protection...	3
Math. 51. Trig.....	4	Math. 52. Coll. Alg....	4	Math. 56	3
Physics 1. General....	5	Physics 2. General....	5	Physics 3. General....	5
Military or Naval Sci.		Military or Naval Sci.		G.E. 7. Drawing.....	3
or Physical Edu... 1%		or Physical Edu... 1%		Military or Naval Sci.	
				or Physical Edu... 1%	

SECOND YEAR

For. 60. Mensuration..	2	For. 61. Mensuration..	2	For. 62. Mensuration..	7
Bot. 1. Elementary....	5	15. Gen. Lumb.....	5	40. Silviculture	3
Comp. 4. Composition..	3	Comp. 5. Composition..	3	C.E. 56. Surveying....	5
Chem. 1. General.....	5	C.E. 55. Surveying....	2	Military or Naval Sci.	
or		Chem. 2. General.....	5	or Physical Edu... 1%	
Foreign Lang.	5	or			
Military or Naval Sci.		Foreign Lang.	5		
or Physical Edu... 1%		Military or Naval Sci.			
		or Physical Edu... 1%			

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, Forestry 184, 187, 190, 196.)

FOREST MANAGEMENT CURRICULUM

Designed to give adequate preparation for the management of forest properties whether in private or public ownership.

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		B.A. 65. Acct. Survey. 5		For. 104. Timber Phys. 5	
115. Protection . . . 3		For. 11. Wood Tech... 3		123. Nursery Pract. . 2	
121. Silvicul. 3		122. Silvicul. 3		151. For. Finance ... 3	
		158. Utilization . . . 5		Bot. 111. For. Pathology 5	
<i>Suggested Electives</i>					
B.A. 57. Bus. Rel..... 5		Geog. 11. Weather and		For. 104. Timber Tests. 5	
Geol. 1. Intro..... 5		Climate..... 5		Bot. 111. Pathology.... 5	
Zool. 1. Elem. Zool.... 5		Zool. 2. Elem. Zool.... 5			
Chem. 1. General..... 5		Chem. 2. General..... 5			
For. 105. Wood Pres... 3					

FOURTH YEAR

For. 196. Field, Forest		For. 140. Construction. 3		For. 119. For. Admin.. 4	
Management.....16		152. Organiz. 3		171. For. Geography. 3	
		194. Seminar 3		192. For. Engrg. 8	
		197. Mgmt. Plans ... 4			
<i>Suggested Electives</i>					
				For. 160-162. Invest...2-5	
				192. For. Engrg..... 8	

FOREST ENGINEERING CURRICULUM

The application of various phases of engineering to problems of timber extraction, transportation, and forest management.

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	M.E. 82. Steam Engr..	3	For. 104. Timber Phys..	5
105. Wood Preserv. .	3	For. 11. Wood Tech....	3	151. For. Finance....	3
115. Protection . . .	3	122. Silvicult.	3	M.E. 83. Stm. Eng. Lab.	3
121. Silvicult.	3	158. Utilization	5		
C.E. 57. Curves and Earthwork.....	4				

Suggested Electives

For. 105. Preservation..	3	For. 124. Regional Silv.	3	B.A. 65. Accounting	
G.E. 1. Drawing.....	3	G.E. 2. Drawing.....	3	Survey.....	5
		C.E. 58. Sur. Off. Prac.	2	57. Bus. Rel.....	5
		B.A. 115. Bus. Corres..	5		

FOURTH YEAR

For. 187. Field, Forest Engineering.....	16	For. 140. Construction..	3	For. 119. Admin.....	4
		152. Organiz.	3	171. For. Geog.	3
		191. Log. Engr.	5	192. For. Engr.	8
		194. Seminar	3		

Suggested Electives

For. 160. For. Investig.	2-5
199. Proj. Report...	1-3

COMBINED FOREST PRODUCTS AND LUMBER MANUFACTURING CURRICULUM

Preparation for operation of sawmills and lumber yards, general lumber sales and work in manufacture and sales of forest products other than logs and lumber.

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
B.A. 65. Acct. Survey..	5	M.E. 83. St. Eng. Lab.	3	For. 104. Timber Phys.	5
For. 10. Wood Tech...	3	For. 11. Wood Tech...	3	151. For. Finance....	3
105. Wood Preserv...	3	158. Utilization	5		
121. Silviculture	3				

Suggested Electives

Chem. 1. General.....	5	B.A. 107. Traffic Mgt..	5	Chem. 111. Quant. Anal.	5
		Chem. 2. General.....	5	Bot. 111. For. Pathology	5

FOURTH YEAR

For. 183. Milling.....	5	For. 140. Construction..	3	For. 184. Manuf. Prob..	5
		188. Theory & Pract.		189. Wood Pulp	5
		Kiln Dry.....	5		
		190. Adv. Wood Pres.	5		

Suggested Electives

B.A. 153. Bus. Admin. of Shipping.....	5	For. 194. Seminar.....	3	For. 119. For. Admin..	4
115. Bus. Corres.....	5			170. Adv. Milling ...	5
				171. For. Geog.	3

FOREST SCIENCES CURRICULUM

Training in forestry with special emphasis on one or more allied sciences. Designed especially to meet needs of those able to prolong their work into the Graduate School.

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Geol. 1. Intro..... 5		Bot. 11. Foresters' Bot. 5		Bot. 111. For. Pathology 5	
For. 10. Wood Tech... 3		For. 11. Wood Tech... 3		For. 123. Nursery Prac. 2	
121. Silviculture 3		122. Silviculture 3		151. For. Finance.... 3	
		158. Utilization 5			
<i>Suggested Electives</i>					
For. 105. Wood Pres... 3		For. 140. Construction. 3		B.A. 57. Pract. Bus. Rel. 5	
115. Protection 3		Geog. 11. Weather and Climate..... 5		Zool. 111. Entomology.. 5	
Zool. 1. Elem..... 5		Zool. 2. Elementary.... 5			
Chem. 1. General..... 5		Chem. 2. General..... 5			

FOURTH YEAR

All elective.		For. 152. Organization. 3		For. 119. Admin..... 4	
		194. Seminar 3		171. For. Geography. 3	
<i>Suggested Electives</i>					
Bot. 140. Gen. Fungi... 5		Bot. 141. Gen. Fungi... 5		Bot. 142. Gen. Fungi.. 5	
143. Plant Physiol... 5		144. Plant Physiol... 5		145. Plant Physiol... 5	
Speech 40. Essentials of Speaking..... 5		For. 158. For. Utiliz... 5			

GRADUATE

The following subjects are primarily for graduate students. Seniors will be allowed to elect them only on 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 fulfil 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	
208. Seminar 3		209. Seminar 3		215. Research .....1-5	
213. Research .....1-5		214. Research .....1-5		223. Adv. Mgt..... 8	
		221. History 3			
		Elective .....10			

COURSES OF STUDY

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

GRADUATE SCHOOL

GENERAL STATEMENT

Special Note. The bulletin of the Graduate School gives courses and specific departmental 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. Graduate students pay a tuition fee of \$15 a quarter for the autumn, winter and spring quarters, if residents of the State of Washington or of Alaska, or \$50 a quarter for each of these quarters if non-residents. The regular fee for the summer quarter is \$25 for students at the University; \$25, including a \$5 laboratory fee, for students at the Oceanographic Laboratories at Friday Harbor.

Members of the staff on a full-time teaching schedule are relieved of all tuition. Teaching fellows, graduate scholars—formerly known as graduate assistants and graduate readers—and non-instructional employees of the University pay a tuition fee of one dollar per quarter for each credit hour on the election blank.

An incidental fee of \$5 a quarter (except summer quarter), library, health service and laboratory fees are required from all graduate students.

Graduate students are given the first week of each quarter in which to complete their registration without late fees.

LIBRARY FACILITIES

The University general library contains 219,809 volumes, and receives virtually all of the publications of learned societies. The law library contains approximately 53,526 volumes. The Seattle public library, containing about 476,327 volumes, is open to students without charge.

Collections of special significance are mentioned in the departmental announcements.

SPECIAL FACILITIES

Bailey and Babette Gatzert 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 the 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

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 twelve 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 eleven months to the testing of textiles for the Bon Marche.

The Skagit Valley Goldenseal Farm Fellowship in Pharmacy. A research fellowship of \$500 is offered annually to a graduate student in drug plant cultivation.

The Nakata Fellowship in Oriental Studies. The Nakata fellowship of \$300 is offered annually to a graduate student in Oriental Studies.

Carl Schurz Memorial Fellowship. A fellowship of \$600 is offered by the Seattle Henry L. Yessler Unit of the Steuben Society of America, and is awarded on the basis of scholastic excellence and general merit, but only to those who need financial assistance. Application for the fellowship should be made on blanks supplied by the dean of the Graduate School, and submitted to the chairman of Germanic Languages and Literature at the Uni-

versity of Washington by March 15 of the academic year preceding the year for which the fellowship is to be granted.

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.

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

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 of the graduate council 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. As the summer offers leisure for advanced study to a large number of teachers, the University lays special emphasis on graduate work during the summer quarter. Graduates of colleges or universities in attendance then are urged to enroll for the strictly graduate courses, as these courses give an opportunity to work with a select group of mature students toward the acquisition of an advanced degree.

Graduate students will enroll with the dean of the Graduate School.

Attendance during three summer quarters will satisfy the residence requirement for the master's degree.

Graduate Credit for Extension Courses. (1) Students who have received bachelor's degrees elsewhere may earn graduate credits through the Extension Service under the following limitations:

a. Nine credits (one-fifth of the normal requirement for the master's degree) may be earned in approved Extension class courses of graduate standing.

b. Such students must, however, meet the residence requirement of three full quarters.

(2) Students who have earned bachelor's degrees from the University of Washington may earn graduate credits through the Extension Service under the following limitations:

a. Nine credits (one-fifth of the normal requirement for the master's degree) may be earned in approved Extension class courses of graduate standing.

b. Such students must meet the residence requirement of two and a half quarters.

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. Each department introduces its program of courses with a specific statement of the graduate training that it is prepared to direct, and of the distinctive opportunities that it offers for graduate work. 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. Candidates for the doctorate are not encouraged to register in courses during the summer quarter, beyond the work of the first year.

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, and normally the candidate will wish to take this degree incidentally; 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 candidate expects to take the degree, the major and minor departments supplemented by a representative from the Graduate Council, shall submit the candidate to a careful oral and written examination (see *The Preliminary 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, and also by a special committee from the Graduate Council.

4. Examinations as follows:

The Preliminary General Examination. An oral, or written, or oral and written examination, covering the general fields and the specific courses in the major and minor subjects. 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 preliminary 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 preliminary 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 preliminary examination. If the preliminary examination did not meet with the clear approval of the committee, the candidate's entire program, or such parts thereof as may have been designed 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. Such evidence must be filed with the dean and approved by him before the preliminary 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. One copy shall be bound at the expense of the candidate.

The thesis, or such parts thereof, or such a digest as may be designated by the council, shall be printed. The candidate shall contribute \$100 to a fund for printing of theses, whether his thesis appears in the University series or

elsewhere. From this fund the library is provided with 400 copies and the candidate with 50 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, of the committee appointed by the major department to pass on the thesis, and of the librarian or his appointed representative.

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 requirements 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 degree of master of arts.

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 an 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, and 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 instructors 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 Music.
- Master of Arts in Home Economics.
- Master of Arts in Business Administration.
- Master of Arts in Music Education.

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.

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.)

COURSES OF STUDY

For a description of courses, see Departments of Instruction section.

SCHOOL OF JOURNALISM

ORGANIZATION AND 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 facts and fiction features, 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.

Journalism "Morgue." In the Memorial Library is a journalism reference "morgue," for newspaper and periodical clippings on topics of interest to the student of journalism.

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. Five 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 fraternities. Junior and senior women maintain a chapter of Theta Sigma Phi, the national journalistic sorority founded at the University of Washington in 1910. Members of *The Columns* staff have chapters of Hammer and Coffin, the national comic-magazine fraternity, and Sigma Upsilon, the national literary

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. Because of the location of the University in a large city and in the presence of numerous printing plants and publications within easy reach, there is excellent opportunity for students to earn part of their expenses while in school. During the past year a large per cent of the men in the School of Journalism were earning their way wholly or in part. The dean of the school has frequent calls from editors, publishers, and managers of printing plants for students with some experience to do part time work in advertising, publicity, and reporting. All the local newspapers and many of the more important dailies in neighboring cities maintain special reporters and correspondents at the University. Remuneration for the various kinds of work ranges up to \$100 a month, according to the service given. Promise of employment, however, cannot be made in advance. Positions usually are given those on the ground who are able to show by actual experience that they can do the work required. In general, a student should have an assurance of \$500 or more before enrolling in the School of Journalism, and no one should expect to earn all or even a part of his expenses during his first quarter of residence.

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 ten credits in military or naval science or physical education. (See Bulletin of the College of Liberal Arts.) 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. 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 ninety hours of lower division work, including all the lower division requirements of the College of Liberal Arts, plus 10 hours 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 present to 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 early in October, 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 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.

Fees. In certain courses in journalism laboratory fees are charged. These go towards purchase of student materials, community typewriters—of

which the school has sixteen—and towards subscriptions for newspapers and periodicals, of which the school takes about one hundred annually, in addition to a large number of country weeklies. The number of courses requiring fees varies from year to year. In 1931-32 the maximum laboratory fees in journalism, in addition to the regular University fees, will not be more than \$4 a quarter for any student, regardless of the number of courses taken.

Resident Tuition. Fifteen dollars (\$15) general tuition per regular academic quarter from each student who has been domiciled within the state of Washington or the territory of Alaska for a period of one year immediately prior to the date of registration.

Non-Resident Tuition. Fifty dollars (\$50) tuition per regular academic quarter from each student who has not been domiciled in the state of Washington or the territory of Alaska for the period of one year immediately prior to registration.

Prospective students from outside the State of Washington should bear in mind certain fundamental legal principles governing the question of resident or 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, until changed by a duly appointed legal guardian.

Every non-resident student will be expected to file a statement of his residence status when first applying for entrance to the University. Blanks for this purpose will be supplied by the University and must be filled out and returned before registration can be completed.

For information on other general University fees and expenses, applicable to all students, see General Information section, page 64.

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 pages 167-170) 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 plus 10 credits including all lower division requirements in Liberal Arts must be earned before entrance.

Major in Journalism in the School of Education. (See Education section.)

Minor in Journalism. Students wishing to minor in journalism must include the following courses in their minor: Journalism 51 (News Writing), five credits, 101 (Reporting), five credits, 120 (Copy Reading), three credits, and 150 (Editorial Writing), three credits. A total of twenty 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 10 hours 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, with an average class grade of B or better. 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 journalism morgue and Churchill Memorial Library are 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.

Specialization. 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 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

The following are the lower division requirements of the College of Liberal Arts which pre-journalism students must fulfill during their first two years:

REQUIREMENTS	EXEMPTION
1. <i>History, U. S.</i> ; 57-58-59	One year of U.S. History in high school (may be $\frac{1}{2}$ civics and $\frac{1}{2}$ U.S. History).
2. <i>History, other than U.S.</i> May be satisfied by 1-2; or 5-6; or 71-72-73	One year of History other than U. S. in high school.
3. <i>Composition 1</i> —Five credits.	None.
4. <i>Ancient Life and Literature</i> —ten credits. May be satisfied by: a. <i>Any two</i> : Latin 11, 13, Greek 11, 13 (In English) b. <i>Any two</i> : Greek 17, Latin 13, Greek 13 (In English) c. Greek 15-16 (In English) d. Greek 1-2 (In Greek) e. Latin 4-5 (In Latin) f. <i>Any two</i> : Or. Studies 50, 51, 52 (In English)	Three years of ancient language (Greek and Latin) in high school or college, or in high school and college combined.
5. <i>Physical Science</i> —ten credits, of either: a. Physics 4-5 b. Physics 89-90 (Women only) c. Chemistry 1-2	One year of one in high school.
6. <i>Biological Science</i> —10 credits from one of the following groups: a. Botany 1, 2, 3, 4; b. Geology 1, 5, 6, 7; c. Geology 1, Geography 1 or 11; d. Geography 1 or 101 and 5 credits from the following: 11, 111, 103, 104; e. Zoology 1-2.	One year of one in high school.
7. <i>Social Science</i> —ten credits of one or five credits each of two. May be satisfied by: a. Any two of—Economics 1, Political Science 1, Sociology 1, or by b. Any one of courses in "a" together with another five credit course for which it is a prerequisite.	None. (Students who did not have civics in high school must have Political Science 1.)
8. <i>Psychology 1</i> ; five credits	None.
9. <i>Philosophy</i> ; 5 credits. May be satisfied by 1 or 2 or 3 or 5	None. (Not open to freshmen)
10. <i>Military or Naval Science or Physical Education</i> ; ten credits	None.

¹ Although the English Composition requirement for Liberal Arts students is Composition 1 and 2, ten credits, pre-journalism students satisfy the requirement by taking Composition 1, five credits.

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. 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	2. †The Newspaper and Society....	1
2. Gen. Econ.....	5	3. †Elements of Publishing.....	3
Eng. 64,65,66. †Lit. Backgrounds.....	9	Lib. Arts 1. Intro. to Mod. Thought	5
60. Intro. to Shakespeare.....	5	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
55,56. Business Law.....	6	61. The Smaller Newspaper.....	3
Speech 38. †Argument and Debate. 5		90,91,92. Current Events.....	3
40. †Essentials of Speaking.....	5	Music 4,5,6. Hist. and Appr.....	9
41. Advanced Speaking	3	Psych. 1. †Gen. Psych.....	5
Eng. 97,98,99. The Bible as Lit.....	6	Soc. 55. Human Ecology	5
Foreign Language	10	63. Community Organization	3
Hist. 71-72-73. Ancient Hist.....	9	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
2. The Newspaper and Society.....	1
3. Elements of Publishing.....	3
None of these to be counted in the 40 credits of Journalism required for graduation.	

SECOND YEAR

Jour. 51. News Writing.....	5
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THIRD YEAR

Jour. 101. Reporting.....	5
120. Copy Reading	3
140. Problems of Publishing.....	5

FOURTH YEAR

Jour. 142. Specialized Reporting	3
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Total (5 credits pre-journalism plus 21 credits Jour.)...26

In addition to the above requirements a student must have a minimum of 19 hours of journalism electives.

² Five credits in either Speech 38 or 40 is required of pre-journalism students.

ENGLISH

A student graduating from the School of Journalism must have a total of 35 credits of English, of which 28 credits, as outlined below, are required.

FIRST YEAR

	<i>Credits</i>
Composition 1. Composition.....	5
English 64,65,66. Literary Backgrounds.....	9

SECOND YEAR

*Public Speaking	5
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THIRD YEAR

English 106. Contemporary Literature.....	3
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FOURTH YEAR

English 163. American Literature.....	3
166. American Literature Since 1870.....	3
Total credits.....	28

The balance of the 35 required credits in English—seven credits—may be selected from the following:

	<i>Credits</i>		<i>Credits</i>
Speech 41. Adv. Speaking.....	3	104,105. Contemporary Lit.	6
Eng. 60. Shakespeare.....	5	161,162. American Lit.	6
97,98,99. The Bible as Lit.....	6	164,165. Amer. Lit. Since 1870...	6

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

	<i>Credits</i>		<i>Credits</i>
Soc. 1. †Introduction	5	130 and 131. Social Invest. and	
55. Human Ecology	5	Soc. Statistics	10
63. Community Organization ...	3	155. Social Legislation	5
66. Group Behaviour	5	156. Criminology	5

Psychology 117, Superstition and Belief, Sociology 201, Public Opinion, and Journalism 201, Propaganda, two credits each and hyphenated, may be included either under sociology or psychology, but will not count toward the journalism credits required for a major in journalism.

Twenty credits of sociology will be required of those who select this field in which to do their secondary specialization, of which five credits, Sociology 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	111. †History of Psych.....	2
108. Essentials of Mental. Meas...	5	121. Applied Psychology	5
109. Mental Tests	5	124. Psych. of Learning.....	5
		126. Abnormal Psych.	5

Psychology 117, Superstition and Belief, Sociology 201, Public Opinion, and Journalism 201, Propaganda, two credits each and hyphenated, may be included either under sociology or psychology, but will not count toward the journalism credits required for a major in journalism.

* This requirement may be satisfied by either Speech 38 (Argumentation and Debate), five credits; or Speech 40 (Essentials of Speaking), five credits.

Twenty credits of psychology will be required of those who elect this field in which to do their secondary specialization, of which seven credits, Psychology 1 and Psychology 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	*124. ‡Internat Rel. of Post-War	
111. Hist. of Pol. Theory.....	3	Europe.....	3
112. American Pol. Theory.....	3	152. ‡Political Parties	5
113. Contemp. Pol. Thought.....	3	161. Municipal Government	5
*121. ‡For. Rel. of U.S.....	3	162. Municipal Administration ...	5
*122. ‡Admin. of Am. For. Affairs..	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—Political Science 1, Political Science 152, and any one of Political Science 121, 122, or 124, 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	149. U.S. National Development...	5
131. ‡Europe Since 1870.....	5	153. ‡The Pacific Rim.....	3
148. U.S. Reconstruction	3	163-164-165. Northwestern Hist....	6

In addition to the lower division Liberal Arts history requirement, twenty credits of history will be required of those who select this field in which to do their secondary specialization, of which eight credits, History 131 and History 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	139. Problems in Advertising.....	5
2. General Economics	5	168. ‡Dev. of Econ. Thought.....	5
54. ‡Business Law	3	173. Internat'l. Comm. Pals.....	5
55,56. Business Law.....	6	175. The Business Cycle.....	5
106. Econ. of Marketing & Adv... 5		181. Econ. of Consumption.....	5
136. Advertising	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, Economics 1, Economics 54, and Economics 168, are specified. The balance of the 20 credits—seven credits—is to be selected from the foregoing specified courses, or from other 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. and D. 9, 10, 11 (Art Structure); Economics 106 (Economics of Marketing and Advertising); Economics 136 (Advertising); Economics 139 (Problems in Advertising); Journalism 130 (Fundamentals of Advertising); Journalism 131 (Display Advertising); Journalism 133 (Advertising Typography); Journalism 135 (Publicity). These will be found of special value in advertising work.

* Of Political Science 121, 122, and 124, only one of the three courses is required.

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: Journalism 51 (News Writing); Journalism 101 (Reporting), Journalism 171-172 (Magazine Writing), Journalism 173, 174-175 (Short Story Writing), Drama 51, 52, 53 (Elem. Acting), Drama 111, 112, 113 (Play Writing), Psychology 1 (General Psychology), Psychology 118 (Folk Psychology), Psychology 126 (Abnormal Psychology), Psychology 131 (Child Psychology), Journalism 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. Moreover, 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 chiefly of 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 occupies the upper floor of Commerce Hall. The law library occupies the whole north end, and an idea of its roominess may be gained from its dimensions, which are, exclusive of stacks, 40 by 70 feet. There is a large consultation room, 25 feet square, adjoining, six large lecture or recitation rooms, one of which is fitted and used for a trial court. Every convenience and improvement tending to add to the efficiency of the student, from an equipment standpoint is present.

The Libraries. At the opening of the present academic year, the University law library contained 53,272 volumes, including the reports of the courts of last resort, the reported lower courts of the several states and the Canadian and English courts. The latest revisions of all the state statutes and a large collection of the session laws of the various states, including a complete set of each of the Pacific Coast states, are useful features.

The University general library at the close of the last academic year contained 214,187 volumes. It is especially strong in reference works.

The Seattle public library, containing approximately 470,000 volumes, is open to the free use of students and is within easy distance of the campus by street car.

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 abundantly 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, under the quarter system are given three hours a week per quarter.

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. Students intending to practice in the State of Washington should consult the dean of the Law School on entering the school.

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.

EXPENSES

TUITION FEES

Resident Tuition. Fifteen dollars (\$15) general tuition per regular academic quarter from each student who has been domiciled within the State of Washington or the territory of Alaska for a period of one year immediately prior to the date of registration.

Non-Resident Tuition. Fifty dollars (\$50) tuition per regular academic quarter from each student who has not been domiciled in the State of Washington or the territory of Alaska for the period of one year immediately prior to registration.

Prospective students from outside the State of Washington should bear in mind certain fundamental legal principles governing the question of resident or 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, until changed by a duly appointed legal guardian.

Every non-resident student will be expected to file a statement of his residence status when first applying for entrance to the University. Blanks for this purpose will be supplied by the University and must be filled out and returned before registration can be completed.

Additional Fees. A law library fee of \$10 per quarter for each student registered in law and a fee of \$1 per quarter credit for students registering in law from other colleges. For further information on fees and expenses see General Information section pages 64 to 71.

ADMISSION AND GRADUATION

Regular Students. Students of the College of Liberal Arts, desiring to be admitted to regular standing in the Law School, must have completed the requirements of the lower division of the College of Liberal Arts. (See Liberal Arts section). Students of the College of Science, desiring to be admitted to regular standing in the Law School, must have attained junior standing in the College of Science of this University. (See College of Science section). Students may present acceptable credits or pass examinations equivalent to these requirements. Students who are not, and cannot qualify as, Liberal Arts or Science students within the meaning of the foregoing regulations, 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.

Candidates for admission to the Law School may be admitted upon presenting an official statement of graduation and degree received from an accredited institution or other credentials showing the completion of the requisite college work to the Registrar of the University of Washington, Seattle, Washington.

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 take the state bar examination. Special students are admitted only in exceptional cases and never in excess of 10 per cent of the entire registration.

A special student may become a candidate for a degree by complying with all the entrance requirements as above set forth in reference to regular students.

Advanced Standing. The candidate for graduation must spend three college years in residence, either at this Law School or at some other school which is a member of the Association of American Law Schools. If in addition to satisfying the entrance requirements for regular standing in the Law School, the student has earned credits at such other 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 advanced 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. Candidates for a degree, with advanced standing, must spend at least one full college year in the Law School.

No credit is given for time spent in private reading or for study in a law office.

Combined Curricula in Arts or Science or Business Administration and Law. It is possible to obtain the degrees of bachelor of arts or bachelor of science, or bachelor of business administration and bachelor of laws, in six years. The requirements of this plan are fully explained hereafter under the three-year pre-law curriculum. (See page 179).

Credit Requirements. A minimum total of 125 credits in strictly law subjects is required for completion of the law course. The student is required to complete the first year of the law curriculum as prescribed, which calls for 13 credits in the autumn, 15 credits in the winter, and 13 credits in the spring quarter. In the following two years he is required to complete an average of 14 credits each quarter. A student may not register for more credits than the foregoing except with the written consent or approval of the dean.

Students, unless they be of exceptional ability and industry, who find it necessary to devote a considerable portion of their time and energy to work not connected with their law studies are strongly advised to limit their work in the Law School to not more than 12 credits per quarter and thus spread the period of their study of law over four years.

A student who has failed in any course, must repeat it and obtain credit in it before graduation.

Autumn Quarter Entrance. Students beginning the study of law can enter advantageously and be registered for the full course only when entering in the summer quarter or the first or autumn quarter of the regular academic year.

Registration. Students should register before the opening of the quarter conformably to the general regulations of the University. Class-work in all subjects begins promptly on the opening day of the quarter, and those who join their classes later will necessarily be seriously handicapped in their work. No student will be admitted to classes unless he presents himself, properly registered, within one week after the commencement of the quarter.

Scholarship Requirements. Not less than three-fourths of the credits required for graduation must be earned with grades of A, B, or C.

Special Lectures. Attendance upon all special lectures is required.

Practice Court Requirements. All students in the Law School may be required to serve as jurors or witnesses in any proceedings before the practice court.

Degrees. The degree of bachelor of laws (LL.B.) will be conferred on all students who comply with the entrance and scholarship requirements for regular students stated hereinbefore, remain in residence in the Law School for three school years, successfully complete all the law work in the Law School, aggregating 125 credits, and comply with the rules and regulations of the faculty and board of regents of the University. Those who maintain a uniformly distinguished record for excellence in their courses will receive this degree *cum laude*.

PRE-LAW STUDY

General Statement. The prospective law student should appreciate that his efficiency as a student and his success as a lawyer depend to a large extent upon his preliminary education. The law is a specialized study demanding intellectual maturity and training at least equal to that required in other advanced university courses. To secure this preparation the University requires all candidates for degrees to have at least two years of college work prior to admission to the law school. It is to be noted, as also pointed out in the American Bar Association resolution set forth on page 173 that two years is the minimum and not the maximum; the completion of four years of college work before beginning the study of law or at least taking the combined six-year course in arts or science or business administration and law is strongly recommended. Some law schools already require four years of college and a bachelor's degree for entrance.

Since the law touches every human interest, a broad general education is desirable. There are no specific subjects that must be mastered as a condition precedent to studying law, in the same sense in which a prospective student of medicine must acquire a knowledge of chemistry, physics, and biology as specific tools for the study of medicine; the law requires primarily a mind trained to precision of thought, coupled with a sufficient knowledge of the history of English and American institutions and civilization to appreciate the economic and social forces behind our legal institutions. Some subjects of pre-law study are valuable on the ground of mental discipline and training, others perhaps more on informational grounds. Examples of the first group, by no means all inclusive, are mathematics, ancient and modern languages, natural and physical science; examples of the second group are English and American history, ancient and modern history, and studies of a similar nature. The object of a pre-legal education is usually best attained by the student's following his strongest interest, since that procedure ordinarily will result in the largest mental development, but he should at the same time guard against a too narrow range of intellectual pursuits. Generally speaking, in view of the exacting requirements of a lawyer's work, his position in the community, and the best traditions of the profession, the prospective law student should select subjects promotive of precision of thought, breadth of knowledge, and general culture.

PRE-LAW CURRICULUM—TWO-YEAR COURSE IN LIBERAL ARTS OR SCIENCE

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 (a normal two years' work) and have completed the requirement of the lower division prescribed for the College of Liberal Arts. (See College of Liberal Arts section.) To be admitted from the College of Science to regular standing in the Law School, students who are candidates for the LL.B. degree only must have earned 90 credits (a normal two years' work) and completed the requirements prescribed for the attainment of junior standing in the College of Science. (See College of Science section.)

Transfer Students. Students who transfer from other institutions with advanced standing, but who have acquired less than two full years of liberal arts or science credits in their respective institutions, and who are not entitled to 90 liberal arts or science 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 or of the first two years of the College of Science 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 acquired at least two full years of liberal arts or science credit in their respective institutions, and are entitled to 90 liberal arts or science credits 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 or of the first two years of the College of Science of this University, or their equivalent, may be held to earn such additional liberal arts or science 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 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.

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.

Adviser. From the beginning of the freshman year in liberal arts or science the adviser for pre-law students is the dean of the School of Law, or such persons as he may designate.

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 courses, to fit them for the correct writing and speaking of English, which are constantly demanded of the legal profession.

Electives. The requirements of the lower division of Liberal Arts or of the first two years in the College of Science 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 suggested:

Anthropology 51.	Comp. 54, 55, 56.
Astronomy 1.	Lit. 64, 65, 66.
Liberal Arts 1, 11.	Lit. 73, 74, 75.
Latin 1-2, 3, 4, 5, 6.	Political Science 1.
Business Administration 1, 2.	Political Science 118.
Business Administration 65.	Political Science 119, 120.
Sociology 1.	History 107.
Speech 40.	History 108, 109, 110.
Comp. 51, 52, 53.	

Liberal Arts Pre-Laws. Experience shows that many students, because of their selection of courses in the high school, do not meet the requirements for clear entrance in the Colleges of Liberal Arts or Science. Particularly is this true of the foreign language requirement in which two years' work is required in the high school. In the event no foreign language has been taken in the high school, 20 credits in one foreign language must be taken in the University, except that 15 credits in beginning Latin

(Latin 1, 2, and 3) will satisfy this deficiency. Latin should be taken when possible. No university credit is allowed for clearing the deficiency in foreign language.

Three years' work in English is required for entrance to the University and the student must register for Comp. 1 and 2 in the University. These courses should be registered for in the first and second quarters, or as soon thereafter as available.

Among the required courses in the lower division of the College of Liberal Arts are some which may have been taken in the high school, but in the event they have not, they must be taken in the University. If taken in the University, credit is, of course, given, the only effect being to cut down the student's number of electives. If U.S. history has not been taken in the high school the student must take Hist. 57, 58, and 59 in the University. If U.S. history has been taken, but civics not taken, the student must take Pol. Sci. 1 in the University. In addition to the U.S. history requirement, one year of other history must have been taken in the high school or the student will be obliged to take two quarters (10 credits) in the University. Hist. 1 and 2 are recommended. When these requirements are met, either in the high school or the University, all pre-law students are strongly urged to take Hist. 107.

The student must have had either physics or chemistry one year in the high school, or taken two quarters (10 credits) in either one or the other of them in the University. He must also have had botany or geology or zoology, one year in the high school, or taken two quarters (10 credits) in some one of them in the University. Experience shows that many students have not had both of the science groups. As they are laboratory courses and require two quarters' work, it is advisable to register for them as soon as available, because of possible conflict with other required courses. Courses offered in the high school as general biology will not satisfy the requirement for the second group, but where such courses consist substantially of one-half year each of botany and zoology, five additional credits in one or the other will satisfy.

In the event the student has not had three years of an ancient foreign language (Greek or Latin) in high school, or its equivalent in the University, he must take two quarters (10 credits) in ancient life and literature. These courses are given under the titles of Greek and Latin, but in fact, are courses in the English language dealing with Greek and Latin life and literature. They are therefore required of all students who have had only a modern language and should also be taken by students who have had two years only of Greek and Latin and feel that they have lost touch with same. Otherwise the latter are advised to continue with their Greek or Latin and in the event they have taken Latin 1, 2, and 3, they are urged to continue with Latin 4, 5, and 6.

As to the subjects required in the first two years of the University: they are divided into four groups. Physical education or military or naval science is required of all students. Five credits are required in philosophy. Phil. 1, 2, 3 or 5, or any two or three of these courses may be advantageously taken. Courses in philosophy must not be registered for during the first year, and they may be postponed until the junior year, if the student contemplates a three-year pre-law course. Psych. 1 is required. Two quarters or 10 credits in any one or combination of two of the following subjects are required: economics, political science or sociology. Obviously, all are important as a background for the proper study of law, and course 1 in each, at least, should be taken.

College of Science Pre-Laws. The foregoing suggestions as to liberal arts pre-laws apply generally to science pre-laws with the following exceptions: The student in science must have or acquire in the secondary school

or university, mathematics, geology or astronomy, one year or 10 credits; chemistry, one year or 10 credits; physics, one year or 10 credits; and botany or zoology, one year or 10 credits. His required subjects in the University include economics, history, language and literature, philosophy, political science, psychology, sociology, 20 credits, but only 10 credits will be counted in any one of these subjects. It will be noted, therefore, that the student has two additional science requirements, as compared with the liberal arts requirement. He must have both chemistry and physics and one year or 10 credits of mathematics, geology, or astronomy. He is not, however, required to take any classical language in addition to his two years of foreign language, and in his requirements in the University, may select 20 credits among any of the subjects just above listed, limited, however, to 10 credits in any one subject.

PRE-LAW CURRICULUM—THREE-YEAR COURSE IN LIBERAL ARTS OR SCIENCE OR BUSINESS ADMINISTRATION

Combined Six-Year Course in Arts or Science or Business Administration and Law. It is possible to obtain the degrees of bachelor of arts or bachelor of science or 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 two-year pre-law course, with the additions hereafter stated. To have the benefit of this combined course, students must maintain a uniformly good record and must, in the first three years in their respective colleges, earn 144 credits, together with the 10 credits of required military or naval science or physical education. To take the 144 credits in three years, the student should carry an average of 16 credits per quarter, exclusive of military or naval science and physical education. As the Law School can be entered advantageously only at the beginning of the autumn quarter, the entire 144 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 144 credits, and 10 credits of required military or naval science or physical education, he may enter the School of Law and there earn 36 credits which will be counted toward his bachelor of arts or science or business administration degree. He will be granted the bachelor of arts or science or business administration degree at the end of the fourth year, or as soon as he completes the required work above specified and 36 credits in the School of Law, making a total of 190 credits for graduation in liberal arts or science or 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 144 liberal arts or science or 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 degree to be completed subsequently.

Selection of Major. In the 144 credits of arts or science or business administration must be included a major of at least 36 credits, together with all the specific requirements of the respective colleges. At least one-half (18) of the credits in the major must be earned in upper division courses. The major must be selected by the student taking the combined six-year course upon acquiring junior standing (which is usually at the commencement of his third year of liberal arts or science or business administration study), pursuant to the regulations relating to majors prescribed for the Colleges of Liberal Arts or Science or Business Administration. (See sections on those colleges). Any of the majors there enumerated may be profitably pursued by pre-law students.

Upper Division Courses. As one of the requirements for the bachelor of science or bachelor of arts is 60 credits earned in upper division courses, (courses numbered above 100), and as the 36 credits of law, which in the combined arts or science and law course may be counted towards this degree, are all upper division credits, it follows that at least 24 of the 144 referred to must also be in the upper division courses.

Transfer Pre-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 Colleges of Liberal Arts, Science or Business Administration, 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.

PRE-LAW CURRICULUM—OTHER WORK LEADING TO BACHELOR'S DEGREE

General Statement. Students who are not, and cannot qualify as, Liberal Arts or Science students within the meaning of the foregoing regulations, may be admitted to the Law School upon the completion of not less than 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.

SUMMER SCHOOL

General Statement. Courses are offered each summer by the Law School for both beginning and advanced students. Different courses, later to be announced, are offered successive summers. This work counts toward a degree as a part of the regular instruction of the Law School.

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 twelve to fifteen 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; provided, 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 \$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. 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 laws, 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, except that in laboratory courses the usual laboratory deposits will be required; 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 University's bulletin of General Information, 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 description of courses, offered by the School of Law, see Departments of Instruction section.

COLLEGE OF LIBERAL ARTS

GENERAL STATEMENT

Instruction Provided. The College of Liberal Arts provides instruction in languages, education, economics and business administration, history, mathematics, philosophy, political science, psychology, sociology and anthropology. Here too, the students preparing to enter the Schools of Law, Journalism, Education and Library Science naturally receive their preliminary training. With the College of Science, it affords the student an opportunity to acquire a general education which shall serve as a sure foundation for real success in whatever profession he may choose. In the College of Liberal Arts the work of the high school is closely articulated with that of the college. To obtain the degree of bachelor of arts the student must first fulfill the requirements of the lower division and then complete two years of work in the upper division.

Resident Tuition. Fifteen dollars (\$15) general tuition per regular academic quarter from each student who has been domiciled within the State of Washington or the territory of Alaska for a period of one year immediately prior to the date of registration.

Non-Resident Tuition. Fifty dollars (\$50) tuition per regular academic quarter from each student who has not been domiciled in the State of Washington or the territory of Alaska for the period of one year immediately prior to registration.

Prospective students from outside the State of Washington should bear in mind certain fundamental legal principles governing the question of resident or 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, until changed by a duly appointed legal guardian.

Every non-resident student will be expected to file a statement of his residence status when first applying for entrance to the University. Blanks for this purpose will be supplied by the University and must be filled out and returned before registration can be completed.

For information on other general University fees and expenses, applicable to all students, see General Information bulletin.

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. More detailed information concerning admission is contained in the General Information section, page 55.

Credentials for students expecting to enter the University in the autumn quarter, 1931, 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.

ENTRANCE REQUIREMENTS

Units Required. A student having graduated from an accredited high school, is required to present twelve units of work done entirely in the 10th, 11th and 12th grades. Of the twelve units, not more than four may be in courses primarily designed for ninth grade students. The twelve units shall be distributed as follows:

1. Not more than four units in non-academic subjects.
2. At least eight units from academic groups (English, mathematics, natural science, social science, foreign language) so chosen as to include:
 - a. Two units of English,
 - b. The second unit of one foreign language,
 - c. One unit of geometry.

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

"Unit" Defined. A "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 forty-five minutes, for a school year of thirty-six weeks. In satisfying entrance requirements with college courses, a minimum of ten credits is counted as the equivalent of the entrance unit.

Students in any college electing work in the Naval Reserve Officer's 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.

Recommending Grades. A minimum of eleven units 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 grades at least one-fourth of the difference between the passing grade and 100 per cent. Such grades shall be known as recommending grades. No student may be accepted for admission who would not be recommended by his school to the university of his home state.

A student who fails to present recommending grades in the required number of units at the time of graduation 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 registrar and the dean of the college concerned.

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 the greatest value to him in 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.

The College Entrance Examination Board will give their examinations in Seattle, Tacoma and Spokane in 1931 from June 15 to 20. Applicants

for examination should communicate before May 19 with the Secretary of the College Entrance Examination Board, 431 West 117 Street, New York, N.Y.

High School Deficiencies. A student is advised not to attempt to enter the College of Liberal Arts until he is able to do so without deficiencies. In rare circumstances, and with the approval of the dean, certain deficiencies may be removed after entrance to the college: but, such deficiencies must be made up in college as part of the student's regular schedule of work without college credit therefor. 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. A student has the privilege of making up his deficiency in high school, but must reduce his schedule in college accordingly while doing so.

Electives in Secondary School. In order to secure the greatest freedom of election in college, electives in the secondary school should be distributed over the last three years of high school as follows:

- | | |
|--|---------|
| 1. U.S. history and civics..... | 1 unit |
| 2. History other than U.S..... | 1 unit |
| 3. Physics or chemistry with laboratory..... | 1 unit |
| 4. Botany, geology, or zoology with laboratory..... | 1 unit |
| 5. Mathematics, language, history, or one of the sciences
mentioned in 3 or 4..... | 1 unit |
| 6. Electives, selected from subjects accepted by an ac-
credited high school for its diploma..... | 3 units |

Less than one unit will not be counted in physics, chemistry, general biology or a foreign language. A maximum of 4 units will be counted in vocational subjects.

Foreign Languages Accepted. For the College of Liberal Arts the foreign language requirement may be satisfied by Latin, Greek, French, German, Spanish, Scandinavian or Italian. If a student presents for entrance two units in 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.

Foreign Students. Students from approved schools in foreign countries will be admitted under the same general conditions as those from American schools, provided they have a sufficient working knowledge of English to enable them to carry regular college work successfully.

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 fulfil 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.

Normal Graduates. 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, scholastic standing, and credit hour load. For graduation with the degree of bachelor of arts a normal school graduate with such advanced credits must earn in the University a sufficient number of credits to bring the total up to 180 credits plus ten credits of required courses in physical education or military science, and

including all specific requirements for the degree not fairly 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. 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 College of Liberal Arts may find it necessary to offer more than the usual 180 scholastic credits for the degree of bachelor of arts.

Medical Examinations. All students entering the University for the first time are required to present themselves for appointment for medical examination, on or before the day following registration, men to the infirmary, and women to the department of physical education for women in the gymnasium.

LOWER DIVISION

Specific Requirements. The work of the lower division comprises studies of the freshman and sophomore years of the undergraduate curriculum. A student is said to be enrolled in the lower division until he has completed all such courses as are required during the first two college years, and until he has attained a minimum of 90 scholastic credits. Specific requirements are listed on the following page.

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.

REQUIREMENTS	EXEMPTION
1. <i>History, U. S.</i> ; 57-58-59	One year of U.S. History in high school (may be $\frac{1}{2}$ civics and $\frac{1}{2}$ U.S. History).
2. <i>History</i> , other than U.S. May be satisfied by 1-2; or 5-6; or 71-72-73	One year of History other than U. S. in high school.
3. <i>English</i> 1-2; ten credits	None.
4. <i>Ancient Life and Literature</i> —ten credits. May be satisfied by: a. <i>Any two</i> : Latin 11, 13, Greek 11, 13 (In English) b. <i>Any two</i> : Greek 17, Latin 13, Greek 13 (In English) c. Greek 15-16 (In English) d. Greek 1-2 (In Greek) e. Latin 4-5 (In Latin) f. <i>Any two</i> : Or. Studies 50, 51, 52 (In English)	Three years of ancient language (Greek and Latin) in high school or college, or in high school and college combined.
5. <i>Physical Science</i> —ten credits, of either: a. Physics 4-5 b. Physics 89-90 (Women only) c. Chemistry 1-2	One year of one in high school.
6. <i>Biological Science</i> —10 credits from one of the following groups: a. Botany 1, 2, 3, 4; b. Geology 1, 5 or 105, 6 or 106, 7 or 107, 112 or 113 c. Geology 1, Geography 1 or 101, 11 or 111 d. Geography 1 or 101 and 5 credits from the following: 11 or 111, 103, 104 e. Zoology 1-2.	One year of one in high school.
7. <i>Social Science</i> —ten credits of one or five credits each of two. May be satisfied by: a. Any two of—Economics 1, Political Science 1, Sociology 1, or by b. Any one of courses in "a" together with another five credit course for which it is a prerequisite.	None. (Students who did not have civics in high school must have Political Science 1.)
8. <i>Psychology</i> 1; five credits	None.
9. <i>Philosophy</i> ; 5 credits. May be satisfied by 1 or 2 or 3 or 5	None. (Not open to freshmen)
10. <i>Military or Naval Science or Physical Education</i> ; ten credits	None.

UPPER DIVISION

Planning Schedules in Upper Division. The upper division comprises the studies of the junior and senior years. It consists principally of the advanced work of the undergraduate curriculum, and is therefore differentiated, both in content and method from that of the lower division. A student is said to be enrolled in the upper division when he has completed all such studies as are required during the first two college years and has attained a minimum of 90 scholastic credits, plus the ten credits in military science or physical education.

Number Upper Division Credits Required. At least 60 credits of the 180 scholastic credits required for graduation must be in upper division courses (courses numbered 100 to 199, or courses numbered below 100 for which upper division credit can be earned); and these 60 upper division credits shall include at least 50 per cent of the credits offered in the major.

SCHOLARSHIP STANDING

(Rule 23)

Low Scholarship Report. (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.

Warned List. (b) Any student failing in any quarter to make twice as many grade points (see below) 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.

Grade Points. A value in "points" is assigned to the several grades, as follows: For each hour of grade A, four points; for each hour of grade B, three points; for each hour of grade C, two points; for each hour of grade D, one point; and for each hour of grade E, no points. An I (incomplete) and a W (withdrawal) count neither as registered hours nor as grade points.

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.

(g) Probation is the status of a student who, having been dropped for scholastic failures but reinstated by the Board of Deans, is compelled to

pass in all his registered hours. Such a student shall remain on probation until his grade points for the previous quarter are twice as many as his registered hours.

(h) In the administration of this rule military science, naval science and physical education shall be on the same basis as so-called "academic subjects."

MAJORS AND ELECTIVES

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, 10 credits in English 1-2 may be counted in addition to 60 credits in other English courses. Of the credits earned in the major, at least 50 per cent must be in upper division courses. In the application of this rule, courses 1-2 in English or a foreign language may be disregarded when counting credits for a major.

Majors Offered. The following are the departments from which a candidate for the B.A. degree must select his major:

Anthropology	History	Philosophy
Economics	Home Economics	Psychology
English	Latin	Romanic Lang. & Lit.
Gen. Literature	Mathematics	Scandinavian
German	Oriental Studies	Sociology
Greek	Political Science	

Students should consult with the executive officer of a department before registering for courses in their prospective major. Students who consider majoring in one of the above departments will avoid delays and inconveniences by consulting early, preferably in their freshman year, with the executive officer of the department concerning all the lower division courses which they ought to take. For suggestions to students intending to enter the Schools of Education, Journalism, Law, or Library Science, see pages 192-198.

Group Limitations. At least 72 credits, including the major, must be earned in the group in which the major department falls. For this purpose the departments are grouped as follows:

No. 1. *Language and Literature.* Classical languages and literature, English, general literature, German, Oriental studies, Romanic languages and literature, Scandinavian.

No. 2. *Philosophical.* Anthropology, economics and business administration, history, liberal arts, mathematics, philosophy, political science, psychology, sociology.

Majors in home economics must present a total of seventy-two credits in home economics and related courses in the following departments: architecture, bacteriology, chemistry, painting, sculpture and design, physics, physiology.

Department Limitations. The number of credits in the major and any other single department combined must not exceed 96 (except when English is combined with the major department for the purpose of this total, credits in English 1-2 may be disregarded). In the application of this rule, French, Italian and Spanish, literature, drama and public speaking are treated as separate departments. In the case of persons majoring in general literature, the number of credits in any two departments other than general literature may not exceed 96.

Economics Majors. Liberal arts students majoring in economics must take courses 1, 2, 103, 124, 160, 161, 168 and at least 15 additional credits from the following list:

B.A. 104. Economics of Transportation	B.A. 159. Advanced Money and Banking
105. American Labor Problems	162. European Labor Problems
106. Economics of Marketing	164. Real Estate Economics
108. Risk and Risk Bearing	168. Development of Economic Thought
121. Corporation Finance	173. International Commercial Policies
122. Principles of Investment	175. The Business Cycle
129. Taxation	181. Economics of Consumption
131. Economics of Public Utilities	

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 thirty-six credits in courses given outside these colleges may be counted toward a bachelor of arts degree. Of these thirty-six not more than twenty-four may be taken in any one college or school, except that from the College of Fine Arts thirty-six credits may be counted.

SCHEDULE LIMITATIONS

Dean's Signature. No student shall be registered for more than 16 credits a quarter (exclusive of military 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 $1\frac{3}{4}$ 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 190 credits, 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 below.

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 be thrown upon 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.

Reading Knowledge of a Foreign Language. A reading knowledge of one of the foreign languages taught in the University is required for graduation from the College of Liberal Arts. Students may take the test in satisfaction of this requirement during any quarter of residence, and must sign up for it in the dean's office not later than a date set at least four weeks from the end of the quarter. This requirement does not apply to language majors nor to graduates of the six-year arts and law curriculum, nor to students planning to graduate under the catalogue of 1922-1923, or under earlier catalogues.

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+10 credits 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.

Application for Degree. Each senior shall, upon registration, 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 on 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. If approved by the faculty, with or without modification, it shall constitute the list of candidates to be recommended for graduation upon the completion of the work required 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. Applicants who are late in filing their applications cannot be assured of recommendation to

the faculty, or of consideration of petitions for modification of requirements. In determining the fitness of a candidate for a degree, his attitude towards his financial obligations shall be taken into consideration.

Two Degrees May Be Conferred. 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 such cases a minimum of fifteen quarters shall have been occupied in the work for two degrees.

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. A student may be examined for advanced credit in work that he has not followed in a college class at this University, or an accredited institution, with the approval of the department concerned. Credits and grades so obtained, must be certified by the examiner and the dean concerned, and shall not be given for work done while the student is in residence.

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.

Withdrawal from Courses. 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 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.

Incompletes. An incomplete is given only in case the student has been in attendance and done satisfactory work to 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 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 provided the work of the course shall have been completed in a satisfactory manner. In special and rare cases removal of an incomplete may be deferred by the dean.

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 Departments of Instruction bulletin such courses are indicated by course numbers connected by hyphens.

Leave of Absence. A leave of absence from the University involving excuses from classes may be granted by the dean concerned except as hereinafter provided:

1. Leaves of absence on account of sickness shall be granted by the University Health Service, and the notices thereof shall be taken personally to the instructors concerned. Students absent on account of sickness shall not be re-admitted to classes without this written excuse. The University Health Service shall file a copy of these leaves of absence with the registrar.
2. Leaves of absence from one class period with the exception of cases included in (1) may be granted by instructors.
3. Leaves of absence from the University for recognized student activities (athletics, music, debate, etc.) shall be passed on by the personnel officers and the dean of women respectively.

Departments of Instruction. All courses of study offered in the University are listed and briefly described in a section of the General Catalogue known as Departments of Instruction. This is also published as a separate bulletin. The student is referred to it for all information in regard to courses.

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 10 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 bulletin 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 AND SECOND YEARS

In addition to the lower division liberal arts requirement the following courses are required, or are suggested electives, for freshman and sophomore pre-journalism students. It will be necessary for a student to consult the School of Journalism section, after selecting his secondary field, to ascertain whether "single-daggered" subjects are, for him, mandatory or elective.

For College of Liberal Arts requirements¹ see table on page 186.
Additional requirements and suggested electives:

FIRST YEAR

Credits		Credits	
B.A. 1. †Gen. Econ.	5	Journ. 1. †Journal. as a Profession...	1
2. †Gen. Econ.	5	2. †The Newspaper and Society....	1
Lit. 64, 65, 66. †Lit. Backgrounds....	9	3. †Elements of Publishing.....	3
60. †Intro. to Shakespeare.....	5	L.A. 1. †Intro. to Mod. Thought....	5
Hist. 5-6. Eng. Pol. and Soc. Hist....	10	11. Intro. to Fine Arts.....	5
		Pol. Sci. 1. †Comp. Govt.....	5
		Soc. 1. †Intro. to Sociology.....	5

SECOND YEAR

B.A. 54, 55, 56. †Business Law....	9	Jour. 51. †News Writing.....	5
61. Soc. and Econ. Standards....	5	61. †The Smaller Newspaper.....	3
Speech 38. †Argument. and Debate..	5	90, 91, 92. †Current Events.....	1
40. †Essen. of Speaking	5	Music 4, 5, 6. Hist. and Apprec....	9
41. †Advanced Speaking	3	Psych. 1. †Gen. Psychology.....	5
Lit. 97, 98, 99. †The Bible as Lit....	6	Soc. 55. †Human Ecology.....	5
Foreign Language	10	63. †Community Organiz.....	3
Hist. 71-72-73. Ancient Hist.....	9	66. †Group Behavior.....	5

PRE-LAW CURRICULUM—TWO-YEAR COURSE

NOTE: 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.

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 186.

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

¹ English composition, five credits, is sufficient to satisfy the College of Liberal Arts English requirement for pre-journalism students.

² Five credits of either Speech 38 or Speech 40 is required of pre-journalism students.

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.

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 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.

Adviser. From the beginning of the freshman year the adviser for pre-law students is the Dean of the School of Law, or such persons as he may designate.

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, 74, 75
Political Science 1	History 105, 106, 107
Political Science 118	History 108, 109, 110
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 maintain a uniformly good record and must, in the first three years, earn 144 liberal arts credits, together with the ten credits of required military or naval science or physical education. To take the 144 credits in three years, the student should carry an average of 16 credits per quarter, 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 144 credits should be completed within the customary three years, with work during an intervening summer quarter or through the Extension

Pre-Law Curriculum

Service if necessary. At the beginning of the fourth year, if a student has earned 144 credits, and ten credits of required military science or naval science or physical education, he may enter the School of Law, and there earn 36 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 36 credits in the School of Law, with a uniformly good record, thus making a total of 190 credits for graduation in liberal arts. 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 the 144 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.

Selection of Major. In the 144 credits must be included a major of at least 36 credits, together with all the requirements of the lower division. At least one-half of the credits in the major must be earned in upper division courses. The major must be selected by the students taking the combined six-year course upon acquiring junior standing (which is usually at the commencement of their third year of liberal arts study), pursuant to the regulations relating to majors prescribed for the College of Liberal Arts on page 188. Any of the majors there enumerated may be profitably pursued by pre-law students.

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.

Upper Division Courses. As one of the requirements for the B.A. degree is 60 credits earned in upper division courses, and as the 36 credits of law which in the combined arts-law course may be counted towards this degree, are all upper division credits, it follows that at least 24 of the 144 referred to must also be in upper division courses.

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.

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 10 credits in military science or naval science or physical education, and including 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 180 plus 10 credits required for graduation.

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. Comp.	10	Music 4,5,6. Hist. and Appr.	9
Speech 40. Essentials of Spk.	5	*Mod. Lang. ¶1-2-3 French or German.15	
Lit. 57. Intro. to Poetry.	5	Psych. ¶1. General.	5
60. Intro. to Shakespeare.	5	Lib. Arts ¶1. Intro. to Mod. Thought	5
64,65,66. Lit. Backgrounds.	9	Arch. 3. Appreciation.	2
*Hist. 1-2. Medieval and Modern.	10	*Latin ¶11,13. Roman Civ. and Lit.	10
5-6. Eng. Pol. and Social.	10	Mil. or Naval Sci. or Phys. Educ.	5
*Science. Bot., Geo., or Zool.	10		

SECOND YEAR

*Mod. Lang. †Fourth Qr. of Foreign Language previously taken.	5	Zool. 16. Evolution.	2
Begin other Lang. Required by Lib. School.	10	17. Eugenics.	2
*Hist. ¶57-58-59. United States.	9	*Pol. Sci. ¶1. Comparative Govt.	5
O.S. 75-76. Hist. of China.	10	¶Soc. ¶1. Introduction.	5
O.S. 78-79. Hist. of Japan.	10	97. America in Civilization.	5
*Greek ¶15-16. Civilization.	10	62. Play and Leisure Time.	3
Anthrop. 51. Gen. Intro. to Anthropol. 5		*Econ. ¶1. Introduction.	5
		7. Econ. Geography.	5
		Lib. Arts. ¶11. Intro. to Fine Arts.	5
		Mil. or Naval Sci. or Phys. Educ.	5

THIRD YEAR

*Mod. Lang. Complete Lib. School Requirement.	10	Lit. ¶153. English Lit.	3
Phil. ¶1,2 or 3. Introduction.	5	¶164,165,166. Am. Lit. from 1870.	3
Hist. 125. Turkey and Near East.	5	174,175,176. Late 19th Cent. Lit.	9
129. Fch. Rev. and Napoleonic Era. 5		*Science. Phys. 1-2 or Chem. 1-2.	10
¶130. Europe 1814-1870.	5	German ¶106,108. Germ. Lit. in Trans	5
¶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
120. Prob. of Eastern Asia and Pac. 5		¶180,181,182. Recent Lit.	6
		*Lib. Sci. 151,152,153. Books and Their Authors.	15

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.

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 186) 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. **General Preparation.** High school teachers should have a broad acquaintance with those liberalizing studies that give (1) knowledge of, and (2) appreciative 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 focussing 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 his 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.. 3		Zool. 17. Eugenics..... 2	
Lit. 64. Lit. Backgrds.. 3		L.A. 1. Intro. Mod. 5		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. Secon. Edu... 3
	Phil. 2. Soc. Ethics.... 5	Pol. Sci. 53. Prob. Dem. 3
		or Phil. 3. Intro..... 5
		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 his 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 unpleasing, 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 (open to sophomores who have earned 65 credits), Edu. 70, 71 and 75, and five credits of electives in education.

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 Departments 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, whose undergraduate work in either or both high school and college has included at least twenty college credits each in German and French. Other modern languages may be substituted with the consent of the dean.

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 twenty college credits each in German and French, and ten credits in military or naval science, or physical education, and including all required work. Students who lack no more than fifteen credits of senior standing (including the languages required above) may be admitted with permission of the dean, such students to complete the 180 plus 10 credits required for graduation.

3. In the autumn quarter of 1933 and thereafter, only college graduates will be admitted. Such graduates must present twenty 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

Consult the General Information section for tuition, fees, and for board and room expenses. The approximate fees are as follows: Resident tuition \$15 per regular quarter, non-resident tuition \$50. Associated Students' fee

\$10 a year, payment optional with graduate students. Health Service fee, \$1 a quarter. Library Science textbook fund \$1.50 a quarter. Board and room at University dormitories \$32 a month; outside the campus, rates are approximately \$40 a month. Practice work (see Lib. Sci. 186) may entail an expenditure of \$50.

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. We shall be glad to assist any candidate for entrance to obtain this practical experience.

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 thirty 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 Sociology 57, Child Welfare, and Psychology 131, Child Psychology.

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 OF THE LIBRARY SCHOOL

I. LIBERAL ARTS

A suggested curriculum for pre-library students entering from the College of Liberal Arts, and an outline of the year's work in the Library School is given below. The courses are arranged in the normal order of precedence. For those who take the library curriculum in the senior year no academic major is required as the technical training of the Library School constitutes this major. Academic subjects marked with the double dagger are required; those with a single dagger are strongly recommended; others are suggested electives. All Library School subjects are required, except where noted.

FIRST YEAR

	Credits		Credits
Comp. †1-2. Composition.....	10	*Science. Bot., Geol. or Zool.....	10
Speech 40. Essentials of Speaking...	5	*Mod. Lang. †1-2-3. French or Ger..	15
Lit. 21. Intro. to Poetry.....	5	Psych. †1. General.....	5
60. Shakespeare.....	5	Lib. Arts. †1. Intro. to Mod. Thought	5
64,65,66. Lit. Backgrounds.....	9	Arch. 3. Appreciation.....	2
*Hist. 1-2. Medieval and Modern.....	10	*Latin †11,13. Rom. Civ. and Lit....	10
5-6. Eng. Pol. and Social.....	10		

SECOND YEAR

	Credits		Credits
*Mod. Lang. †Fourth Qr. of Foreign Language Previously taken.....	5	Zool. 16. Evolution.....	2
Begin other language required by Library School.....	10	17. Eugenics.....	2
*Hist. †57-58-59. United States.....	9	*Pol. Sci. †1. Comparative Gov't.....	5
Or. Stud. 75-76. Hist. of China.....	10	*Soc. †1. Introduction.....	5
78-79. History of Japan.....	10	97. America in Civilization.....	5
*Greek †15-16. Civilization.....	10	62. Play and Leisure Time.....	3
Anthrop. 51. General. Intro. to Anth. 5	5	*Econ. †1. Introduction.....	5
		7. Economic Geography.....	5
		Lib. Arts. †11. Intro. to Fine Arts..	5

THIRD YEAR

	Credits		Credits
*Mod. Lang. Complete Library School Requirement.....	10	Lit. †153. English Lit. 1516-1642....	3
Phil. †1, 2 or 3. Introduction.....	5	†164,165,166. Am. Lit. from 1870..	9
Hist. 125. Turkey and Near East... 5	5	174,175. 19th Century Poetry.....	6
129. Fr. Rev. and Napoleonic Era 5	5	*Sci. Phys. 1-2 or Chem. 1-2.....	10
†130. Europe, 1814-1870.....	5	German †106,108. Ger. Lit. in Tr... 5	5
†131. Europe Since 1870.....	5	French †118,119,120. Surv. Fr. Lit.. 9	9
Pol. Sci. 122. Foreign Affairs.....	3	Ital. †181,182,184. Ital. Lit. in Tr.. 6	6
Or. Stud. 114, 115, 116. History of Religion.....	9	Scand. Lit. 109,110,111. Mod. Auth.. 3	3
120. Prob. Eastern Asia and Pac.. 5	5	†180,181,182. Recent Lit.....	6

FOURTH YEAR

Autumn Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
175. Classif. and Cat... 4	4	184. Classif. and Cat... 3	3	191. Classif. and Cat... 4	4
177. Reference... 3	3	185. Reference... 3	3	193. Gov't. Documents.. 2	2
178. Hist. of Books... 2	2	187. Libr. Organization. 2	2	197. Libr. Admin. 2	2
179. Book Selection... 2	2	*188. Book Selection... 2	2	*196. Book Selection. 2-4	2-4
170. Children's Work... 3	3	*183. Sel. of Books for Children..... 2	2	*194. Bibliography... 3	3
171. Library Econ. ... 2	2	*180. Story Telling... 1	1	*190. Sel. of Books for Children..... 2	2
		*181. Adv. Child. Wk. 1	1	*180. Story Telling... 1	1
		*182. School Work... 1	1	*199. Adv. Child. Wk. 1	1
		186. Practice... 5	5	*182. School Work... 1	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.

† These requirements may be satisfied in high school or in college.

‡ The Library School requires 20 hours each of two modern foreign languages, French and German, in either high school or college.

§ 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.

¶ Electives.

* Consult instructor.

II. SCIENCE

The following is a curriculum suggested for pre-library students in the College of Science. For those who take the library curriculum in the senior year no academic major is required, as the technical training of the Library School constitutes this major. Subjects marked with the double dagger are required. The complete Library School curriculum, which constitutes the fourth year, is required.

FIRST YEAR

	<i>Credits</i>		<i>Credits</i>
*Mod. Lang. †1,2,3. French or Ger...	15	Zoology †1,2. Elementary.....	10
Astronomy 1. General.....	5	Lib. Arts 1. Intro. to Mod. Thought	5
Psychology †1. Introduction.....	5	Chem. †1-2. General.....	10

SECOND YEAR

	<i>Credits</i>		<i>Credits</i>
*Mod. Lang. †Fourth quarter of foreign language previously taken..	5	Comp. †1-2. Composition.....	10
Begin other foreign language required by Library School.....	10	Zoology †16. Evolution.....	2
Pol. Sci., Econ. or Soc. 1. Intro... 5	5	17. Eugenics	2
		History 1-2. Mod. and Medieval.....	10
		Geology †1, 7. General.....	10

THIRD YEAR

	<i>Credits</i>		<i>Credits</i>
*Mod. Lang. †Complete Library School Requirement.....	10	Physics †89-90. Physics of the Home..	10
Botany †1, 2. General.....	10	History 130. Europe, 1814-1870.....	5
Lib. Arts 11. Intro. to Fine Arts....	5	131. Europe Since 1870.....	5

III. 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 Libraries.....	1	205. Adm. of Children's Libraries.....	1	206. Adm. of Children's 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	5	*Soc. 57. Child Welfare 3	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.

* The Library School requires 20 hours each of two modern foreign languages, French and German, in either high school or college.

* May be taken in preparation.

* Consult dean of the Library School.

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 engineering, B.S. (Min. E.)
- II. Bachelor of science in geology and mining, B.S. (Geol. and Min.)
- III. Bachelor of science in metallurgical engineering, B.S. (Met.E.)
- IV. Bachelor of science in coal mining engineering, B.S. (Coal Min.E.)
- V. Bachelor of science in ceramic engineering, B.S. (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. For a description of mining, metallurgical and ceramic laboratories, see pages 48 to 51.

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.

Research Fellowships. The College of Mines offers four fellowships for research in coal and other non-metallic mineral substances, in co-operation with the United States 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 twelve 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.

Appointees to the fellowship report for duty on July 1, and are required to be on duty for a full year, except that in case of reappointment for a second year, the fellowship holder is given a vacation from June 15 to July 1.

For the year 1931-32 problems of the following nature will be selected for investigation: 1. Coal. (a) Beneficiation: Coal washing. Application of ore dressing principles to cleaning of coal; (b) Utilization: Physical properties of coal such as friability, weathering, and slacking; burning of high-moisture coals in powdered form; carbonization.

2. Non-Metallic Materials. (a) Purification: Washing of kaolin and ochres; (b) Problems in drying certain non-metallics; (c) Efficiency studies in kiln-heating.

Arthur A. Denny Fellowship. To encourage graduate work a fellowship of \$500 annual value is open to students in the College of Mines who are residents of the state of Washington. It is awarded for scholastic excellence and general merit, but only to students who need financial assistance. Applications must be made to the Dean of the College before March 15 preceding the academic year for which the fellowship is to be granted.

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.

UNDERGRADUATE SCHOLARSHIPS

A scholarship of \$250, given by William Mackay of Roslyn, Washington, is available to junior and senior students in the College of Mines. The award is made on the basis of character, scholarship, and need of assistance. Applications are due in March.

A scholarship amounting to \$180 is awarded annually to an upperclass student for services as assistant in the mining laboratories.

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, 1931, the attendance numbered 150. The next session of the Institute will open at 9 a.m. on Monday morning, January 18, 1932.

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. For further information concerning the Station, see page 51.

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 55, 63, 64.

SPECIAL REQUIREMENTS FOR THE COLLEGE OF MINES

In addition to the three units of English and the two units of mathematics required for admission to all colleges of the University all students expecting to enter the College of Mines should offer the following subjects for entrance:

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.

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.

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 Graduate School section.

CURRICULA OF THE COLLEGE OF MINES

MINING ENGINEERING (OPTION I)

		FIRST YEAR			
<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mathematics 51	4	Mathematics 52	4	Mathematics 53	4
Gen. Engineering 1....	3	Gen. Engineering 2....	3	Gen. Engineering 3....	3
Gen. Engineering 11....	3	Gen. Engineering 12....	3	Gen. Engineering 21....	3
Chemistry 1 or 21....	5	Chemistry 2 or 22....	5	Chemistry 23	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Ed....	1%	or Physical Ed....	1%	or Physical Ed....	1%

		SECOND YEAR			
Mining 51	3	Civil Engineering 53....	3	Metallurgy 53	3
Physics 97	5	Physics 98	5	Physics 99	5
Mathematics 61	3	Mathematics 62	3	Composition 100	3
Geology 5	5	Chemistry 111	5	Geology 121	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Ed....	1%	or Physical Ed....	1%	or Physical Ed....	1%
Mining practice in summer vacation.					

		THIRD YEAR			
Mining 101	3	Metallurgy 153	3	Mining 106	1
Metallurgy 101	5	Civil Engineering 132..	3	Metallurgy 102	2
Civil Engineering 131..	3	Geology 124	3	Geology 125	3
Geology 123	3	Elect. Eng'g. 101-102..	6	Elec. Eng'g. 121-122..	6
Engr. Shop 54	1			Electives	3
Mining practice in summer vacation.					

		FOURTH YEAR			
Mining 151	3	Mining 103	1	Mining 107	1
Mining 191	2	Mining 162	4	Mining 152	5
Metallurgy 155	3	Mining 192	2	Mining 193	1
Metallurgy 162	2	Geology 127	5	Mining 182	3
Electives	5	Electives	3	Electives	4

GEOLOGY AND MINING (OPTION II)

FIRST YEAR
(Same as for Option I)

SECOND YEAR
(Same as for Option I)
Geology or mining practice in summer vacation.

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 101	3	Metallurgy 103	4	Mining 106	1
Metallurgy 101	5	Metallurgy 153	3	Metallurgy 102	2
Civil Engineering 131..	3	Civil Engineering 132..	3	Geology 7	5
Geology 123	3	Geology 124	3	Geology 125	3
Engr. Shop 54	1	Electives	2	Electives	4

Geology or mining practice in summer vacation.

FOURTH YEAR

Mining 151	3	Mining 103	1	Mining 107	1
Mining 191	2	Mining 162	4	Mining 152	5
Metallurgy 162	2	Mining 192	2	Mining 193	1
Electives	8	Geology 127	5	Geology 122	3
		Electives	2	Geology 128	5

METALLURGICAL ENGINEERING (OPTION III)

FIRST YEAR
(Same as for Option I)

SECOND YEAR
(Same as for Option I)
Metallurgical practice in summer vacation.

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 101	3	Metallurgy 103	4	Mining 106	1
Metallurgy 101	5	Metallurgy 153	3	Metallurgy 102	2
Civil Engineering 131..	3	Civil Engineering 132..	3	Elec. Engr'g. 121-122..	6
Geology 123	3	Elec. Engr'g. 101-102..	6	Electives	6

Metallurgical practice in summer vacation.

FOURTH YEAR

Mining 151	3	Mining 103	1	Mining 107	1
Mining 191	2	Mining 192	2	Mining 152	5
Metallurgy 104	5	Metallurgy 163	3	Mining 193	1
Metallurgy 155	3	Metallurgy 165	3	Metallurgy 166	3
Metallurgy 162	2	Geology 127	5	Electives	5

COAL MINING ENGINEERING (OPTION IV)

FIRST YEAR

(Same as for Option I)

SECOND YEAR

(Same as for Option I)

Coal mining practice in summer vacation.

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 101	3	Mining 122	3	Mining 106	1
Civil Engineering 131..	3	Metallurgy 103	4	Metallurgy 102	2
Geology 123	3	Civil Engineering 132..	3	Geology 7	5
Mech. Engineering 82..	3	Elec. Engr'g. 101-102..	6	Mech. Engineering 81..	3
Mech. Engineering 83..	3			Elec. Engr'g. 121-122..	6

Coal mining practice in summer vacation.

FOURTH YEAR

Mining 151	3	Mining 103	1	Mining 107	1
Mining 170	3	Mining 171	3	Mining 178	2
Mining 191	2	Mining 176	5	Mining 182	3
Metallurgy 155	3	Mining 192	2	Mining 193	1
Engr. Shop 54	1	Electives	4	Electives	7
Electives	3				

CERAMIC ENGINEERING (OPTION V)

FIRST YEAR

(Same as for Option I)

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 51	3	Civil Engineering 53...	3	Ceramics 90	3
Physics 97	5	Physics 98	5	Physics 99	5
Mathematics 61	3	Mathematics 62	3	Metallurgy 53	3
Geology 5	5	Chemistry 111	5	Geology 121	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Ed.... 1½		or Physical Ed.... 1½		or Physical Ed.... 1½	

Ceramics practice in summer vacation.

THIRD YEAR

Mining 101	3	Metallurgy 153	3	Mining 106	1
Ceramics 100	3	Ceramics 101	3	Metallurgy 102	2
Ceramics 104	3	Ceramics 105	3	Ceramics 102	3
Civil Engineering 131..	3	Civil Engineering 132..	3	Ceramics 110	2
Geology 123	3	Electives	3	Comp. 100	3
				Electives	5

Ceramics practice in summer vacation.

FOURTH YEAR

Mining 191	3	Mining 192	3	Mining 193	2
Ceramics 121	5	Mining 103	1	Mining 107	1
Chemistry 181	3	Metallurgy 103	4	Ceramics 123	5
Electives	4	Ceramics 122	5	Electives	7
		Chemistry 182	3		

COURSES OF STUDY

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

COLLEGE OF PHARMACY

HISTORY

Mr. A. B. Stewart, in his address as President of the Washington State Pharmaceutical Association in 1893, recommended that a college of pharmacy should be organized at the University of Washington. The association approved this recommendation and it was brought to the attention of Professor Edmond S. Meany, who was at that time secretary to the Board of Regents. On June 13, 1894, Professor Meany presented to the Board of Regents a report setting forth the request of the state association and also an outline of the proposed course of study of two years. The Board of Regents, at a meeting held July 10, 1894, passed a resolution establishing a College of Pharmacy and directed that instruction begin with the school year of 1894-95. The first year of instruction was given on the old campus in what is now known as the "Metropolitan Section" of Seattle. During the summer of 1895 the University was moved to its present location north of Lake Union.

In 1904 a four-year course in pharmacy was organized, but instruction was continued in the two-year course until 1921, when the minimum course of instruction became one of three years. This three-year course was discontinued in 1929. Beginning with the autumn quarter of 1930 the minimum course of instruction for a degree in pharmacy is four years.

Graduate work was organized in 1912 with one year of graduate study leading to the degree of master of science in pharmacy. In 1925 the college was granted the right to accept candidates for the degree of doctor of philosophy with major in 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 70 per cent.

5. A registered pharmacist must be over twenty-one years of age. Persons under twenty-one shall be classified as assistant registered pharmacist 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 2 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.

SCHOLARSHIPS AND FELLOWSHIPS

The Arthur A. Denny Fellowship. The College of Pharmacy is indebted to the Arthur A. Denny estate for a fellowship that pays \$500 a year to the student selected for this honor. The fellowship is granted each year to a graduate of the four-year course in pharmacy. The graduate is selected on the basis of excellence in scholarship and promise of ability to do research work in some subject of pharmaceutical importance. The student gives full time to graduate study leading to a graduate degree. He pays regular tuition fees.

The Skagit Valley Goldenseal Company Fellowship. A research fellowship of \$500 is offered for study in drug plant cultivation. This fellowship is granted each year to a graduate of the four-year course in pharmacy who will work for an advanced degree. The student gives full time to graduate study leading to a graduate degree. He pays regular tuition fees.

The American Pharmaceutical Association Research Fellowship. This fellowship was offered during the year 1930-1931 for study of problems arising in the revision of the National Formulary. The sum of \$500 was allowed by the American Pharmaceutical Association for this research work.

Teaching Fellowships. The college has six teaching fellowships for students working for graduate degrees. A teaching fellow gives half time as assistant, usually in laboratory instruction, and at least half time to graduate study. He can carry as much as ten graduate credits per quarter. A teaching fellow with the degree of bachelor of science receives \$540 the first year and \$600 the second year. One with the master of science degree receives \$720 per year. A teaching fellow pays a tuition of one dollar per credit of graduate courses carried per quarter. He pays certain fixed laboratory fees, but all materials used and breakage are free.

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.

Service to Pharmacists of the State. It is the desire of the college to render every possible service to pharmacists of the state. We therefore invite the pharmacists to write us in regard to their prescription difficulties and manufacturing problems. Many pharmacists are now availing themselves of this privilege, and it is our wish to extend this service to the entire profession. Send your prescriptions and problems with a history of difficulties encountered to Professor H. A. Langenhan, who is in charge of practical pharmacy courses in the College of Pharmacy.

Women in Pharmacy. Opportunities for women in pharmacy are as great as for men. Women are finding a place in retail pharmacy, and as hospital pharmacists, and are becoming noted for the satisfaction they give in both the scientific and business sides of the average drug store. Women graduates are also giving excellent satisfaction as food and drug chemists, bacteriologists and as teachers in colleges of pharmacy.

Observation Trips. Observation trips made each year by classes in pharmacy to various manufacturing and wholesale establishments of Seattle and to large retail stores are an important feature of the work of the college. Trips are also made to the various drug farms located near Seattle.

Pharmacy, Materia Medica and Chemistry Laboratories. Rooms devoted to pharmacy, materia medica and chemistry are located in Bagley Hall, a three-story fireproof building, and in the Pharmacy Annex. Special sections are provided for pharmacy students in general, organic and qualitative chemistry. Work in prescription practice receives special attention in the Pharmacy Annex. This building contains one large room arranged and equipped as a model prescription pharmacy; a second but smaller room equipped with optimum fixtures donated by Stewart and Holmes Drug Company, arranged and equipped as a sales room. The prescription room contains displays of pharmaceuticals from many of the leading pharmaceutical houses.

Library Facilities. A branch of the University library containing books and current publications on pharmacy and chemistry is maintained in the science reading room in the general library. Many rare old books relating to the development of pharmacy and of pharmacopoeias have been added recently.

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 55, 63, 64.

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.

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 sufficient working knowledge of English, acquaintance with American methods of instruction, and plans of study,

to enable them to carry regular college work successfully. An examination will be required by the registrar on these supplementary points.

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.

GRADUATE STANDING

Candidates for the degree of master of science in pharmacy or doctor of philosophy with major in pharmacy must have received the bachelor's degree from this college or from some other college of equal rank, maintaining a four-year course, which is the equivalent of the course at this institution.

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
4 Profession	2	Chem. 9 General.....	5	Chem. 10 Qualitative..	5
Chem. 8 General	5	Comp. 9	3	Comp. 10	2
Bot. 13 Pharmacy.....	5	Bot. 14 Pharmacy.....	4	Physiology 6 Human... 5	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Educ.. 1%		or Physical Educ.. 1%		or Physical Educ.. 1%	

SECOND YEAR

Phar. 5 Quant. Grav... 5	Phar. 6 Quant. Vol... 5	Phar. 7 Assay..... 2
9 Prescriptions 3	10 Prescriptions 3	11 Prescriptions 3
12 Pharmacognosy ... 3	13 Pharmacognosy ... 3	14 Pharmacognosy ... 3
Chem. 37 Organic..... 5	Chem. 38 Organic..... 5	8 U.S.P. Assay..... 2
Military or Naval Sci.	Military or Naval Sci.	Chem. 39 Organic..... 5
or Physical Educ.. 1%	or Physical Educ.. 1%	Military or Naval Sci.
		or Physical Educ.. 1%

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 Therap. Tox.	3
Tox. 3		Tox. 3		105 Microscopy 2	
113 Adv. Prescr. 5		104 Microscopy 2		115 Adv. Prescr. 5	
B.A. 54 Bus. Law. 3		114 Adv. Prescr. 5		Econ. 3 General. 3	
Bact. 101 General. 5		B.A. 55 Bus. Law. 3		Approved Elective 2	
		Approved Elective 3			

FOURTH YEAR

Phar. 181 Drugst. Prac. 5	Phar. 182 Drugst. Prac. 5	Phar. 184 Laws & Jour. 3
112 Biologicals 3	183 New Remedies... 3	197 Toxicology 4
195 Phar. Chem. 4	196 Phar. Chem. 4	B.A. 65 Accounting... 5
Approved Elective 3	Approved Elective 3	Approved Elective 3

Total scholastic credits for graduation—180 plus 10 credits 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 Therap. Tox.	3
Tox. 3		Tox. 3		115 Adv. Prescr. 5	
113 Adv. Prescr. 5		114 Adv. Prescr. 5		105 Microscopy 2	
Bact. 101 General. 5		104 Microscopy 2		Approved Elective 5	
Approved Elective 2		Approved Elective 5			

FOURTH YEAR

Phar. 195 Phar. Chem. 4	Phar. 196 Phar. Chem. 4	Phar. 197 Toxicology.. 4
112 Biologicals 3	183 New Remedies... 3	184 Laws & Journ... 3
Physics 1 or 4 Mech... 5	Phys. 2 or 5 Sd. Heat. Lt. 5	Approved Elective 8
Approved Elective 3	Approved Elective 3	

Total scholastic credits for graduation—180 plus 10 credits 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 a 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 Therap. Tox.	3
Toxicology 3		Toxicology 3		Mod. For. Lang. 5	
Mod. For. Lang. 5		Mod. For. Lang. 5		Comp. 2 or Speech 37.. 5	
Zoology 1 or 3. 5		Zoology 2 or 4. 5		Approved Elective 2	
Approved Elective 2		Approved Elective 2			

FOURTH YEAR

Physics 1 or 4 Mech... 5	Phys. 2 or 5 Sd. Heat. Lt. 5	Physics 3 or 6 Elect... 5
Bact. 101 General. 5	Approved Elective 10	Approved Elective 10
Approved Elective 5		

Total scholastic credits for graduation—180 plus 10 credits 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 bulletin of the graduate school 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

GENERAL INFORMATION

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	F. Geography
B. Biology	G. Mathematics
C. Chemistry	H. Military Science
D. Fisheries	I. Naval Science
E. Geology	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	C. Physical Education for Men
B. Nursing Education	D. Physical Education for Women
	E. Pre-medical
- V. Pre-Landscape Gardening curriculum.

LABORATORIES

The University of Washington has laboratories fully equipped for work in anatomy, astronomy, bacteriology, botany, chemistry, (including separate laboratories devoted to general chemistry, analytical chemistry, food inspection and analysis, physiological, industrial and pharmaceutical chemistry), fisheries, geology, geography, physiology, psychology, physics and zoology.

The Bureau of Testing of the department of physics is being rapidly equipped to meet the demand for accurate calibration and testing of scientific instruments. Standards of the bureau will be calibrated by the National Bureau of Standards at Washington, D.C. The bureau is prepared to calibrate direct and alternating current instruments, determine candle power of lamps, measure temperature, both high and low, and, to a limited extent, to standardize weights. Persons desiring to have work done should address the director, Frederick A. Osborn.

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 55, 63, 64.

Special Requirements of the College of Science. In addition to three units of English and two units of mathematics required of all students for admission to the University, two units of a foreign language are required for admission to the College of Science. The student expecting to enter this college is advised to take as many as possible of the subjects specified on a succeeding page among "Subjects required either in a secondary school or in the University," careful observance of which will furnish a more complete preparation for college work, and give correspondingly greater freedom of election in college.

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.

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 Graduate School section.

CURRICULA OF THE COLLEGE OF SCIENCE

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 190 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.

† 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.

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.

II. CURRICULA IN THE VARIOUS DEPARTMENTS

A minimum of 190 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.....	1%	or Phys. Edu.....	1%	or Phys. Edu.....	1%

SECOND YEAR

Bact. 101. Gen.....	5	Bact. 102. Sanitary....	5	Bact. 103. Pub. Hyg....	5
Chem. 131. Organic....	5	Chem. 132. Organic....	5	Chem. 111. Quant. Anal.	5
Anat. 105. Histol.		Anat. 106 or 102 Histol.		Anat. 107. or 103.	
& Emb.	6	or General	6	Neur. or General....	6
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.....	1%	or Phys. Edu.....	1%	or Phys. Edu.....	1%

THIRD YEAR

Bact. 105. Infect. Dis..	5	Bact. 106. Clin. Diag..	5	Bact. 104. Serology....	5
Phys. 1. General.....	5	Phys. 2. General.....	5	Phys. 3. General.....	5
Electives	5	Electives	5	Electives	5

FOURTH YEAR

Bact. 120. Applied.....	5	Bact. 121. Applied.....	5	Bact. 122. Applied.....	5
Electives	10	Electives	10	Electives	10

*Physiography (with laboratory work) taken in high school will be accepted instead of geology.

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	5	Comp. 2 or Electives..	5	Mathematics or Elective	5
Botany or Zoology....	5	Botany or Zoology....	5	Electives	10
Electives	5	**Mathematics or Elect.	5	Military or Naval Sci.	
Military or Naval Sci.		Military or Naval Sci.		or Phys. Edu.....	1%
or Phys. Edu.....	1%	or Phys. Edu.....	1%		

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.....	1%
or Phys. Edu.....	1%	or Phys. Edu.....	1%		

THIRD YEAR

Major	5	Major	5	Major	5
Soc., Pol. Sci. or Econ.	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		

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.....	1%	or Phys. Edu.....	1%	or Phys. Edu.....	1%

- 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.	
Phys. 1 or 97. General.	5	Phys. 2 or 98. General.	5	Anal.	5
Math. 61. Calc.....	3	Math. 62. Calc.....	3	Phys. 3 or 99 General.	5
and		and		² Electives	5
Electives	2	Electives	2	or	
or		or		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.....	1%
or Phys. Edu.....	1%	or Phys. Edu.....	1%		

**Two and one-half years of mathematics required, which may be taken in high school or University.

²Students expecting to elect the industrial group in junior year must take Chem. 52 the spring quarter of the sophomore year.

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
*Chem. 131. Organic.... 5		*Chem. 132. Organic.... 5		*Chem. 133. Organic.... 5	
*Electives 5		*Electives 5		*Electives 5	
Group Option		Group Option		Group Option	
(a) General:		(a) General:		(a) General:	
Electives 5		Electives 5		Electives 5	
(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) *Oceanographical:		(d) *Oceanographical:		(d) *Oceanographical:	
Phys. 101. Intro.		Phys. 105. Elec.... 5		Phys. 160. Optics.. 5	
Mod. Theor. 5					

FOURTH YEAR

Chem. 181. Phys. & Theor. 5	Chem. 182. Phys. & Theor. 5	Chem. 183. Phys. & Theor. 5
*Electives 2	*Electives 5	Group Option
Group Option	Group Option	(a) General:
(a) General:	(a) General:	Electives 10
Electives 8	Electives 8	(b) Industrial:
(b) Industrial:	(b) Industrial:	Electives 8
Chem. 171. Chem.	Chem. 172. Chem.	Pol. Sci. 101.
Engr. 5	Engr. 5	Const. Govt. 2
176. Chem. Engr.	177. Chem. Engr.	(c) Biochemical:
Thesis 3	Thesis 3	Chem. 163. Physiol.
(c) Biochemical:	(c) Biochemical:	Chem. 3
Chem. 161. Physiol.	Chem. 162. Physiol.	Electives 7
Chem. 5	Chem. 5	(d) *Oceanographical:
Electives 3	166. Bioch. Prep... 3	Electives 8
(d) *Oceanographical:	(d) *Oceanographical:	
Electives 8	Electives 8	

D. FISHERIES

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. Elem..... 5		Zool. 2. Elem..... 5		Chem. 23. Qual. Anal.. 5	
Chem. 1 or 21. General. 5		Chem. 2 or 22. Gen... 5		†Elective 5	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu..... 1%		or Phys. Edu..... 1%		or Phys. Edu..... 1%	

SECOND YEAR

Zool. 127. Comp. Anat.. 5	Zool. 128. Comp. Anat. 5	Zool. 108. Limnology.. 5
Phys. 1 or 4. General. 5	Phys. 2 or 5. Gen.... 5	Phys. 3 or 6. Gen. or
†Elective 5	†Elective 5	Elective 5
Military or Naval Sci.	Military or Naval Sci.	†Elective 5
or Phys. Edu..... 1%	or Phys. Edu..... 1%	Military or Naval Sci.
		or Phys. Edu..... 1%

THIRD YEAR

Fish. 101. Ichthyol.... 5	Fish. 102. Ichthyol.... 5	Fish. 103. System. Ich. 5
Math. 4. Plane Trig... 5	Math. 5. College Alg... 5	Math. 6. Anal. Geom.. 5
†Elective 5	†Elective 5	Zool. 101. Cytology or
		†Elective 5

* For Oceanographic option, Chem. 128 or 129 may be substituted for Chem. 131 and 132. Chem. 133 is not required.

† 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.

* Chem. 190 and 191 (History of Chemistry) are suggested as electives in either the junior or senior year.

† Twenty-five hours of electives must be taken in the biological sciences or geology.

† Ten credits of German or French and 10 credits of botany in the University are required before the end of the junior year.

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Fish. 125. Early Life History	5	Fish. 126. Early Life History	5	Fish. 127. Early Life History	5
Math. 61. Calc.	3	Math. 62. Calc.	3	Math. 63. Calc.	3
Fish. 157. Meth. in Ich.	5	Fish. 158. Later Life History	5	Fish. 197. Seminar.	2
Fish. 195. Seminar	2	Fish. 196. Seminar.	2	Elective	5
or		or			
Zool. 16. Evolution.	2	Zool. 121. Micro. Tech.	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.	1%	or Phys. Edu.	1%	or Phys. Edu.	1%

SECOND YEAR

Geol. 5. Rocks & Min.	5	Geol. 6. Elem. Physiol.	5	Geol. 7. Hist. Geol.	5
Phys. 1. General.	5	Phys. 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.	1%	or Phys. Edu.	1%	Military or Naval Sci.	
				or Phys. Edu.	1%

THIRD YEAR

Geol. 123. Optical Min.	5	Geol. 124. Petrog.	5	Geol. 125. Petrol.	5
French 1 or Ger. 1. Elem	5	130. Paleont.	5	132. Invert. Pal.	5
Astron. or Elective.	5	French 2 or Ger. 2. Elem	5	French 3 or Ger. 3. Elem	5

FOURTH YEAR

Geol. 122. Field Meth.		Geol. 126. Sed. Petrog.	5	Geol. 128. Econ. Geol. of	
or Elective	10	127. Econ. Geol. of		Non-Metals	5
Min. 51. Elem.	3	Met.	5	112. Phys. East. U.S.	5
Chem. 111. Quant. Anal.	5	190. Thesis	5	Met. 53. Elem.	3
				160. Met. Anal.	2

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. 1. Intro.	5	Comp. 2. Composition.	5
Soc. 1. Intro.	5	B.A. 1. Gen. Econ.	5	B.A. 2. Gen. Econ.	5
Comp. 1. Composition.	5	Bot. 1 or 2. Elem.	5	Math. 2. Solid Geom.	
Military or Naval Sci.		Military or Naval Sci.		or Elective	5
or Phys. Edu.	1%	or Phys. Edu.	1%	Military or Naval Sci.	
				or Phys. Edu.	1%

SECOND YEAR

Soc. 55. Human Ecol.	5	Geog. 11. Weath. & Climate	5	B.A. 7. Econ Geog.	5
Phys. 1 or 4. General.	5	Phys. 2 or 5. General.	5	Bot. 104. Ecology.	5
or		or		French 3 or Ger. 3. Elem	5
Chem. 1 or 21. General.	5	Chem. 2 or 22. General.	5	Military or Naval Sci.	
French 1 or Ger. 1. Elem	5	French 2 or Ger. 2. Elem	5	or Phys. Edu.	1%
Military or Naval Sci.		Military or Naval Sci.			
or Phys. Edu.	1%	or Phys. Edu.	1%		

¹ If solid geometry has been taken in high school, elective may be substituted.

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Geog. 102. Econ. Geog.		Geog. 103. Pol. & Econ.		Geog. 104. Ind. & Pol.	
N. Amer. 5		Geog. of Asia..... 5		Geog. of Europe.... 5	
Hist. 5. Eng. Pol. & Soc. 5		Geol. 106. Prin. Physiol. 5		Geol. 112 or 113 Physiol. 5	
Elective 5		Hist. 6. Eng. Pol. & Soc. 5		128 Econ. Geol. of Non-Metals 5	

FOURTH YEAR

Anthr. 51. Intro..... 5	Geog. 175. Prob. in Pol.	Geog. 105. Econ. Geog.
B.A. 145. Trade of	Geog. or 190. Thesis. 5	of Latin Amer..... 5
Americas 5	B.A. 143. Trade of Far	B.A. 144. Trade of Eur. 5
*Elective 5	& Near East..... 5	*Elective 5
	*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	
Phys. 1. General..... 5		Phys. 2. General..... 5		Modern Foreign Lang.. 5	
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu..... 1½		or Phys. Edu..... 1½		or Phys. Edu..... 1½	

SECOND YEAR

History 5	B.A. 1. 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..... 1½	or Phys. Edu..... 1½	or Phys. Edu..... 1½

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 Teach... 3	Education 3
71. Cadet Teaching.. 5	Electives12	Edu. 75Q. Math..... 3
Electives 7		Electives 3

Group II—College and University Teachers

Mathematics 5	Mathematics 5	Mathematics 5
Electives10	Electives10	Electives10

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 B.S. 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, all units.....	5	Mil. Sci. 51-52-53. Inf. }.....	5
Math. 1. Algebra.....	5	61-62-63. Arty. }.....	
Math. 2. Solid Geom.....	5	71-72-73. Ord. }.....	
Math. 4. Plane Trig.....	5	Phys. 1-2 or 97, 98. General.....	10
G.E. 7. Engr. Drawing.....	3	Chem. 1-2 or 21-22. General.....	10
21. Plane Surv.....	3	French, German or Spanish.....	9 or 10
Comp. 1-2. Composition.....	10	Hist. 57-58-59. United States.....	9
French, German or Span. 1-2-3. Elem.	15	Speech 40. Essen. of Speaking.....	5

Summer Quarter—Basic R.O.T.C. Camp

<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
Soc., Pol. Sci. or Econ.....	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		Speech 40. Pub. Spkg.. 5		Physics 2. Gen. Physics 5	
Math. 4. Trigonometry. 5		Physics 1. Gen. Physics. 5		Math. 5. Algebra..... 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. 3. Gen. Econ..... 5	B.A. 7. Econ. Geog.... 5	B.A. 57. Bus. Law..... 5
Chem. 1. or 21. General Chemistry 5	Electives	Electives
Electives	4	7

Recommended electives for freshmen and sophomores: Comp. 2, Speech 37, 2nd year foreign language, Math. 6 or 53, Physics 3 or 6, Chem. 2 or 22, 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. 119. Water Trans. 5		B.A. 145. World Trade. 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 165. Admiralty... 3	B.A. 152. B.A. of Ship. 5	Electives 15
Electives 12	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.

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. or Phys. Edu..... 1%		Military or Naval Sci. Military or Naval Sci. or Phys. Edu..... 1%		Military or Naval Sci. Military or Naval Sci. or Phys. Edu..... 1%	

SECOND YEAR

Bot. 105. Morph. & Evol. 5	Bot. 106. Morph. & Evol. 5	Bot. 107. Morph. & Evol. 5
Phys. 1. General..... 5	Phys. 2. General..... 5	Phys. 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..... 1%	Military or Naval Sci. Military or Naval Sci. or Phys. Edu..... 1%	Military or Naval Sci. Military or Naval Sci. or Phys. Edu..... 1%

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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
Electives10	Electives10	Electives10

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: History 1-2; Political Science 1; Economics 1; Sociology 1; Philosophy 1; Psychology 1; German 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; Zoology 5, 106, 107, 125, 126; Chemistry 111, 140, 141; Botany 140, 247; Bacteriology 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.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Edu.	1%	or Phys. Edu.	1%	or Phys. Edu.	1%

SECOND YEAR

Chem. 109. Quan. Anal. 5	Chem. 110. Quan. Anal. 5	Chem. 101. Adv. Qual.
Phys. 1. General.	Phys. 2. General.	Anal.
Math. 107. Calc.	Math. 108. Calc.	Phys. 3. General.
Military or Naval Sci.	Military or Naval Sci.	Math. 109. Calc.
or Phys. Edu.	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
Phys. 101. Mod. Theor. 5	Phys. 105. Electricity. 5	Phys. 160. Phys. Optics. 5
Elective	Elective	Elective

FOURTH YEAR

Chem. 181. Phys. &	Chem. 182. Phys. &	Chem. 183. Phys. &
Theor.	Theor.	Theor.
Electives	Electives	Electives

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.

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.	1%	or Phys. Edu.	1%	or Phys. Edu.	1%

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Phys. 1. General.....	5	Phys. 2. General.....	5	Phys. 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.....	1%	or Phys. Edu.....	1%	or Phys. Edu.....	1%

THIRD YEAR

Phys. 101. Mod. Theor. 5	Phys. 105. Electricity.. 5	Phys. 160. Phys. Optics. 5
Biological Science 5	Biological Science 5	Biological Science 5
Elective 5	Elective 5	Elective 5

FOURTH YEAR

Phys. 191. Anal. Mech. 3	Phys. 192. Anal. Mech. 2	Chem. 183. Phys. &
Chem. 181. Phys. &	Chem. 182. Phys. &	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.....	1%	or Phys. Edu.....	1%	or Phys. Edu.....	1%

SECOND YEAR

Zool. 125. Invert. Zool. 5	Zool. 126. Invert. Zool. 5	Zool. 5. Gen. Embryol.. 5
or	or	Phys. 3. General..... 5
127. Comp. Anat.... 5	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..... 1%
Phys. 1. General..... 5	Phys. 2. General..... 5	
Elective 5	Elective 5	
Military or Naval Sci.	Military or Naval Sci.	
or Phys. Edu..... 1%	or Phys. Edu..... 1%	

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		107. Parasitology ... 5
		or
		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

<i>First Year</i>	<i>Credits</i>	<i>Second Year</i>	<i>Credits</i>
Composition	10	Phys. 1, 2, 3, or 4, 5, 6. General	15
Psychology	5	Math. 107, 108, 109. Calc.	15
Math. 4. Plane Trig.	5	*Advisory Electives	15
5. College Algebra	5	Military or Naval Sci. or Phys. Edu.	5
6. Anal. Geometry	5		
Chemistry	15		
Military or Naval Sci. or Phys. Edu.	5		
<i>Third Year</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Credits</i>
Phys. 101. Modern Theories	5	Phys. 191-192. Anal. Mech.	5
105. Electricity	5	Physics Electives	10
160. Physical Optics	5	*Advisory Electives	15
Biol. Sci., Geol., Astron.	15	*Free Electives	15
*Free Electives	15		

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 135 credits and the required credits in military or naval science or physical education, and completed 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 9 additional credits in the College of Science and 36 credits in the School of Law; making a total of 190 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

<i>FIRST YEAR</i>			
	<i>Credits</i>		<i>Credits</i>
*Mod. Lang. †1-2, 3. French or Ger.	15	Zoology †1-2. Elementary	10
Astronomy 1. General	5	Lib. Arts 1. Intro. to Mod. Thought.	5
Psychology †1. Introduction	5	Chem. †1-2 or 21-22. General	10
<i>SECOND YEAR</i>			
	<i>Credits</i>		<i>Credits</i>
*Mod. Lang. †Fourth quarter of For. Lang. previously taken	5	Zoology †16. Evolution	2
Begin other For. Lang. required by Library School	10	17. Eugenics	2
Pol. Sci., Econ. or Soc. 1. Intro.	5	History 1-2. Mod. and Medieval	10
Comp. †1, 2	10	Geology †1. General	5
		Geography †1. Prin. of Econ. Geog.	5
		Music 4, 5, 6. Hist. and Apprec.	9
<i>THIRD YEAR</i>			
	<i>Credits</i>		<i>Credits</i>
*Mod. Lang. †Complete Library School Requirements	10	Physics †89-90. Physics of the Home	10
Botany †1, 2. General	10	History 130. Europe, 1814-1870	5
Lib. Arts 11. Intro. to Fine Arts	5	131. Europe, Since 1870	5

† Advisory electives must be approved by the department.

* It is very desirable that the student take 15 credits of his free electives in history, economics, language, philosophy, political science, or sociology.

† The Library School requires 20 credits each of French and German in either high school or college.

‡ Required courses.

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.

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		Phys. 90. Home..... 5		Chem. 2 or 22. Gen... 5	
Phys. 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 Struct... 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	
45. Hh. Mgt..... 3		46. Hh. Mgt..... 3		46. Hh. Mgt..... 3	
Elective 2		or		Bact. 101. General.... 5	
Phys. Edu. 1		47. Home Furn..... 3		Edu. 60. Secon. Edu... 3	
		Elective 2			
		Phys. Edu. 1			

THIRD YEAR

H.E. 112. Cost. Des. 3 or 5		H.E. 113. Cost. Des.		H.E. 114. Cost. Des.	
115. Food Prep... 3 or 5		& Const. 3		& Const. 3	
Psych. 1. General..... 5		116. Food Prep..... 3		117. Food Prep..... 5	
Edu. 90. Meas..... 2		B.A. 1. Gen. Econ..... 5		Edu. 70. Methods. 4or 5	
Elective 0-4		Edu. 9. Edu. Psych.... 3		75NA. Spec. Meth... 3	

FOURTH YEAR

H.E. 107. Nutrition.... 5		H.E. 108. Nutrition... 5		H.E. 145. Hh. Econ.... 2	
Edu. 71. Cadet Teach... 5		144. Hh. Econ..... 3		148. Ho. Mgt. House. 2	
75NB. Spec. Meth... 3		Edu. 71. Cadet Teach.. 3		190. Child Nutr. &	
120. Edu. Soc..... 3		Soc. 1. Intro..... 5		Care. 5	
				Electives 6	

Twenty credits of language, literature or history must be elected.

Beginning September, 1931, one quarter's residence after graduation will be 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		Phys. 90. Home..... 5		Chem. 2 or 22. Gen.... 5	
Phys. 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		47. Home Furn..... 3	
Elective 2		47. Home Furn. 3		or	
Phys. Edu. 1		Physiol. 7. Elem. 5		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. 1. Gen. Econ.... 5		B.A. 65. Acct. Surv.... 5		124. Inst. Mgt..... 3	
Elective 6 or 8		Soc. 1. Intro..... 5		B.A. 106. Mktg. &	
		Elective 3		Adv. 5	
				Elective 3	

FOURTH YEAR

H.E. 107. Nutrition... 5		H.E. 108. Nutrition.... 5		H.E. 121. Inst. Food	
120. Adv. Food Prep. 3		125. Inst. Mktg..... 3		Preparation 5	
122. Inst. Equip.... 3		144. Hh. Econ..... 2		123. Inst. Mgt..... 3	
Elective 5		190. Child Nutr. &		145. Hh. Econ..... 2	
		Care 5		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	
9. Art Struct..... 3		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	
45. Hh. Mgt..... 3		46 Hh. Mgt..... 3		H.E. 47. Home Furn.. 3	
112. Cost. Des. &		or		or	
Const. 3		47. Home Furn..... 3		46. Hh. Mgt..... 3	
Arch. 1. Arch. Apprec.. 2		113. Cost. Des. &		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	
188. Adv. Text..... 2		H.E. 102. Needlecraft. 2		P.S.D. Elective 3	
P.S.D. 169. Cost Des.. 2		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		161. Adv. Cost. Des... 3	
Electives 8		P.S.D. Elective 3		P.S.D. Elective 3	
		Electives 10		Electives 5	

Twenty credits of language, literature or history must be elected.

Transfer Students

Suggested schedules 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	
45. Hh. Mgt..... 3		or		or	
115. Food Prep... 3 or 5		47. Home Furn..... 3		47. Home Furn..... 3	
Arch. 1. Arch. Apprec... 2		116. Food Prep..... 3		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	
112. Cost. Des... 3 or 5		113. Cost. Des..... 3		145. Hh. Econ..... 2	
148. H. Mgt. House. 2		144. Hh. Econ..... 2		190. Child Nutr..... 5	
Edu. 75NB. Spec. Meth. 3		Edu. 71. Cadet Teach.. 3		Edu. 71. Cadet Teach.. 5	
		Electives 3			

A minimum of 9 credits of education is required, which must include Edu. 60 or 62.

Beginning September, 1931, one quarter's residence after graduation will be 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	
115. Food Prep..... 5		47. Home Furn..... 3		or	
P.S.D. 9. Art Struct... 3		or		47. Home Furn..... 3	
B.A. 1. Gen. Econ... 5		46. Hh. Mgt..... 3		117. Food Prep..... 5	
		116. Food Prep..... 3		Chem. 144. Physiol... 5	
		124. Inst. Mgt..... 3		B.A. 65. Acct. Surv... 5	
		B.A. 106. Mktg. & Advg. 5			

FOURTH YEAR

H.E. 107. Nutrition... 5		H.E. 108. Nutrition... 5		H.E. 121. Inst. Food	
120. Food Prep..... 3		125. Inst. Mktg..... 3		Prep. 5	
122. Inst. Equip..... 3		144. Hh. Econ. 2		123. Inst. Mgt..... 3	
Bact. 101. General..... 5		190. Child Nutr. 5		145. Hh. Econ. 2	
				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 Struct. 3		P.S.D. 11. Art Struct... 3	
Arch. 1. Arch. Apprec... 2		6. Drawing 3		7. Drawing 3	
H.E. 25. Textiles..... 3		Arch. 2. Arch. Apprec... 2		H.E. 46. Hh. Mgt..... 3	
45. Hh. Mgt..... 3		H.E. 26. Textiles..... 3		or	
112. Cost. Des...3 or 5		46. Hh. Mgt..... 3		47. Home Furn..... 3	
		or		114. Cost. Des..... 3	
		47. Home Furn..... 3		Electives 3	
		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		109. El. of H.E..... 5		161. Cost. Des..... 3	
188. Adv. Text..... 2		160. Cost. Des..... 3		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

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.

1. Five-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>
Comp. 1. Composition.. 5		Comp. 2. Composition.. 5		H.E. 9. Nutrition..... 6	
Nurs. Ed. 1. Hist. Nurs. 2		Chem. 1. or 21. Gen... 5		Chem. 2 or 22. Gen... 5	
Phys. 89. Home..... 5		Phys. 90. Home..... 5		Psych. 1. General..... 5	
Elective 3		Phys. Edu. 1		Phys. Edu. 1	
Phys. Edu. 1					

SECOND YEAR

Anat. 101. Gen. Human. 3		H.E. 105. Nutrition.... 5		H.E. 106. Nutrition.... 5	
Physiol. 53. Physiol.... 5		Physiol. 54. Physiol.... 5		Nurs. Edu. 50. Prin. 5	
B.A. 1. Gen. Econ..... 5		Soc. 1. Intro..... 5		& Prac. 5	
Elective 2		Phys. Edu. 1		Electives 6	
Phys. Edu. 1					

THIRD YEAR

Anat. 102. Gen. Human. 3		Anat. 103. Gen. Human. 3		Bact. 103. Pub. Hyg... 5	
Bact. 101. General.... 5		Bact. 102. Sanit..... 5		Electives 10	
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 and a hospital diploma.

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	Comp. 5. Composition..	3	Bact. 101. General....	5
Chem. 1. General.....	5	Chem. 2. General.....	5	H.E. 9. Nutrition.....	6
Phys. 89. Home.....	5	Phys. 90. Home.....	5	Psych. 1. General.....	5
Phys. Edu.	1	Nurs. Edu. 1. Hist.		Phys. Edu.	1
		Nurs.	2		
		Phys. Edu.	1		
<i>Summer Quarter</i>			<i>Credits</i>		
Physiol. 53. Physiol.....			5		
54. Physiol.			5		
Anat. 101, 102. Gen. Human.....			6		

SECOND YEAR

Nurs. Edu. 50. Prin. & practice	5	Nurs. Edu. 60. Prin. of Med.	3	Nurs. Edu. 51. Case Study	1
52. Intro. Hosp. Prac.	6	62. Hosp. Prac.	6	61. Prin. of Med.	3
Anat. 105. Hosp.	3	70. Prin. of Surg.	3	71. Prin. of Surg.	3
Phar. 51. Elem.	2	Phar. 61. Pharmac. & Ther.	3	72. Hosp. Prac.	6
Phys. Edu.	1	Phys. Edu.	1	H.E. 191. Nutrition... 3	
<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
80. Prin.	5	76. Prin.	2	Bact. 106 Clin. Diag...	3
82. Hosp. Prac.	6	86. Obstetrics	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. Prev. Med. & Nurs.	2	Nurs. Edu. 90. Psychiatry.....	5	Two quarters of elective work at University, at least 20 credits of which must be in field of social sciences, literature, history or languages.	
68. Prac.	6	92. Hosp. Prac.	6		
Soc. 1. Intro.	5	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; English 174, 175, 176.					

3. Curriculum for Graduate Nurses

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. 1. 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

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physiol. 53. Physiol....	5	Physiol. 54. Physiol....	5	Edu. 60. Secon. Edu....	3
H.E. 105. Nutrition....	5	H.E. 106. Nutrition....	5	Elective	14
Elective	5	Elective	7		
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. Pub. Health Nurs. 5		Elective11
Elective	5	Elective.	5	

Preferred electives: Soc. 155, 156, 171, 173; Nurs. Edu. 110.

4. Curriculum Leading to 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 nine-months' 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.

The curriculum:

<i>Credits</i>		<i>Credits</i>	
Nurs. Edu. 102. Pub. Health.....	5	†Psych. 1. General	5
103. Admin. Pub. Health.....	5	†131. Child Psych.	5
†Soc. 175. Social Work and Health .	5	†132. Clinical Psych.	3
†H.E. 105-106. Nutrition.....	10	†Bact. 103. Public Hygiene.....	5
†Speech 40. Essen. of Speaking.....	5	†Edu. 60. Secondary Edu.....	3
		Field Work	16
		Total credits required.....	45

Extension Service Curriculum at Firland Sanatorium

This also leads to the certificate in public health nursing.

	Credits		Credits
Nurs. Edu. 102. Pub. Health.....	3	Soc. 171. Social Case Work.....	5
103. Admin. Pub. Health.....	3	Psych. 1. General.....	3
H.E. 104. Nutrition.....	3	Comp. 1. Composition	5

Service Course for Nurses

To meet the needs for certain courses in the basic sciences, the University is offering a one-quarter course to students who have entered the 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.		Anat. 25. Anatomy	3
Students	5	Physiol. 20. Physiol. for Hosp.	
H.E. 9. Nutrition	6	Students	3

† Electives.

C. PRESCRIBED CURRICULUM FOR PHYSICAL EDUCATION FOR MEN

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	Speech 40. Essen. of	
Soc. 1. Intro.....	5	Zool. 1. Elem.....	5	Speaking	5
Phys. Edu. 80. Intro..	2	Phys. Edu. 90. Pers.	2	Zool. 2. Elem.....	5
1. Elem.	1%	& Gen. Hyg.....	2	Phys. Edu. 3. Elem....	1%
Elective	3	2. Elem.	1%	Elective	5
		Elective	3		

SECOND YEAR

Anat. 101. Gen Human.	3	Physiol. 50. Physiol....	6	Zool. 17. Eugenics....	2
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. Comm.	
Phys. Edu. 95 Elem.		& First Aid.....	3	Rec.	3
Games	2	59. Leadership	1%	115. Physiol. of Ex..	3
58. Leadership	1%	Elective	5	60. Leadership	1%
Elective	4			Elective	4

THIRD YEAR

Bact. 103. Pub. Hyg... 5	Phys. Edu. 135. Ind.	H.E. 104. Nutrition... 2
Edu. 60. Sec. Edu.... 3	Gym. 2	Edu. 145G. Health Edu. 3
Phys. Edu. 122. Kines. 3	142. Meth. 3	Phys. Edu. 136. Ind.
141. Meth. 3	175. Sw. & Div.... 2	Gym. 2
	Edu. Elective 4	143. Meth. 3
	Elective 5	Elective 5

FOURTH YEAR

Edu. 70. H.S. Proc.... 4	Edu. 71. Cadet Teach. 3	Edu. 71. Cadet Teach.. 2
Edu. 71. Cadet Teach. 3	75U Phys. Edu..... 2	Phys. Edu. 150. Admin. 5
Phys. Edu. 156. Meth.. 2	Phys. Edu. 157. Meth.. 2	158. Meth. 2
145. Prin. 3	153. Health Edu.... 2	Elective 6
Elective 3	Elective 6	

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	17. Eugenics	2	Phys. Edu. 10. Health	
†Chem. 1. General.....	5	†Chem. 2. General....	5	Edu.	5
Phys. Edu.	1	Phys. Edu. 100. Surv..	2	Elective	5
		Phys. Edu.	1	Phys. Edu.	1

SECOND YEAR

Anat. 101. Gen. Human.	3	Soc. 1. Intro.....	5	Phys. Edu. 113. Org. &	
110. Spec. Dem.....	1	Physiol. 50. Physiol....	6	Admin. of Playgrds.	3
Phys. Edu. 111. Rhythms		Anat. 111. Spec. Dem..	1	115. Physiol. of Ex..	5
& Dram. Games....	3	Phys. Edu. 112. Elem.		Anat. 112. Spec. Dem..	1
Psych. 1. General.....	5	Ath. Games	3	Bact. 103. Pub. Hyg... 5	
Speech 43. Spk. Voice..	3	Phys. Edu.	1	Elective	2
Phys. Edu.	1				

THIRD YEAR

Edu. 60. Secon. Edu... 3	Phys. Edu. 101. Surv.	Phys. Edu. 102. Surv.
Phys. Edu. 122. Kines. 3	Gym. 3	Gym. 3
162. Meth. 5	163. Meth. 5	164. Meth. 5
Elective 4	Elective 8	Edu. 70. H.S. Proceed.. 4
		Edu. Elective 4
		Elective 2

† Chemistry 1-2 required of students who have not completed a year of chemistry or physics in high school.

FOURTH YEAR

Phys. Edu. 131. Adapt.	Phys. Edu. 132. Adapt.	Phys. Edu. 133. Adapt.
Act. 3	Act. 3	Act. 3
145. Prin. 3	153. Meth. Hlth Edu. 2	152. Admin. 2
Edu. 71. Cadet Teach. . 3	Edu. 71. Cadet Teach. . 3	Edu. 71. Cadet Teach. . 2
Elective 7	75V. Phys. Edu. . . . 2	145G. School Hyg. . . . 3
	Elective 6	Elective 6

In no case can credits in courses Physical Education 57 to Physical Education 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 217 (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.

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. 1%		or Phys. Edu. 1%		or Phys. Edu. 1%	

SECOND YEAR

Sci. French or German. . 5	Phys. 2. General. 5	Phys. 3. General. 5
Phys. 1. General. 5	Chem. 128. Organic. . . . 5	Chem. 129. Organic. . . . 5
Lit. 73. Intro. Mod. Lit. . 3	Electives 5	B.A. 1. Gen. Econ. 5
Electives 2	Military or Naval Sci. . .	or
Military or Naval Sci. . .	or Phys. Edu. 1%	Pol. Sci. 1. Comp. Govt. . 5
or Phys. Edu. 1%		Military or Naval Sci. . .
		or Phys. Edu. 1%

THIRD YEAR

Anat. 101. Gen. Human. . 6	Anat. 102. Gen. Human. . 6	Anat. 103. Gen. Human. . 6
105. Hist. & Embry. . . 6	106. Hist. & Embry. . . 6	107. Neurology 6
‡Bact. 101. General. . . . 5	‡Bact. 106. Clin. Diag. . 5	‡Bact. 104. Serology. . . . 5

FOURTH YEAR

Physiol. 151. Adv.	Physiol. 152. Adv.	Physiol. 153. Adv.
Physiol. 5	Physiol. 5	Physiol. 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

‡ Approved electives may be substituted.

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.

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. 1. Gen. Econ....	5
Math. 54. Math. for		Math. 55. Math. for		G.E. 7. Engr. Draw... 3	
Arch.	3	Arch.	3	Military or Naval Sci.	
Military or Naval Sci.		Military or Naval Sci.		or Phys. Edu.....	1%
or Phys. Edu.....	1%	or Phys. Edu.....	1%		

SECOND YEAR

Arch. 1. Arch. Apprec..	2	Arch. 2. Arch. Apprec..	2	G.E. 21. Plane Surv..	3
4. Arch. Des.	4	5. Arch. Des.....	4	Bot. 90. Greenhse. Prac.	3
7. Graph. Rep.	1	8. Graph. Rep.....	1	92. Orn. Plants.....	5
112. Freehand Draw..	2	113. Freehand Draw..	2	Elective	4
B.A. 54. Bus. Law....	3	Speech 40. Essen. of Spk.	5	Military or Naval Sci.	
Geol. 1. Intro.....	5	Military or Naval Sci.		or Phys. Edu.....	1%
Military or Naval Sci.		or Phys. Edu.....	1%		
or Phys. Edu.....	1%				

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 twelve 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 1931-1932.

Courses preceded by ** are given if a sufficient number of students elect them.

DEPARTMENTS OF INSTRUCTION

AERONAUTICAL ENGINEERING

Guggenheim Hall

Professors Eastwood, Kirsten; Assistant Professor Miller; Instructor Eastman.

101. *Aerodynamics.* Study of air-flow phenomena and of the aerodynamical characteristics of air-foils and air-foil combinations. Quantitative wind-tunnel testing in two-foot and four-foot tunnels. Prerequisite, junior standing. Lab. fee, \$2. Three credits; autumn, winter. Eastman.

102. *Advanced Aerodynamics.* Selection of air-foils for prescribed airplane performance; mathematical development of air-foil contours; study of stability problems for various flight maneuvers; wind tunnel testing of airplane models. Prerequisite, A.E. 101. Three credits; autumn, winter, spring. Kirsten, Eastman.

111. *Airplane Design.* Applied aerodynamics. Computations preliminary to the layout and design of airplanes. Application and co-ordination of the United States Department of Commerce regulations. Prerequisite, A.E. 101. Three credits; winter, spring. Miller.

112. *Airplane Design.* Continuation of A.E. 111. The design of an airplane for a given prescribed duty. Stress analysis and the design of airplane parts. Prerequisite, A.E. 111. Three credits; autumn, spring. Miller.

113. *Airplane Performance.* Speed, climb, and stability estimates from theoretical considerations and from model tests. Methods of full scale testing. Prerequisite, A.E. 112. Three credits; spring. Miller.

121. *Airships.* Study of lighter-than-air craft, aerostatics and airship design. Prerequisite, A.E. 101. Three credits; winter. 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.* Study of different types of propellers; co-ordination of propeller with vessel; study of standard propeller test methods; propeller test in wind tunnel. 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; spring. Miller.

171. *Aircraft Mechanics.* Application of mechanics to aircraft structures. A study of 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.

*Not offered in 1931-1932.

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. *Aircraft Construction*. Aircraft structural details. Design, manufacture, testing and inspection of aircraft parts. Rigging and alignment of airplanes and the installation of power plants and instruments. Prerequisite, A.E. 172. Three credits; spring.

J. W. Miller.

181. *Advanced Airplane Design*. The design of special types of airplanes. Advanced structural analysis and the completion of the design details arising in A.E. 112, and the preparation of final drawings. Prerequisite, A.E. 112, 141. Three credits; winter.

Miller.

190. *Seminar*. Prerequisite, senior standing. Three credits; spring.

Kirsten.

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. A, 100, 102 and Speech 103.

ANATOMY

Anatomy Building

Professor Worcester and Assistants.

GROSS ANATOMY

25. *Anatomy*. For hospital students. Lab. fee, \$1. Three credits; autumn, winter, spring.

Worcester, Assistants.

101, 102, 103. *General Human Anatomy*. Thorough study of the human body. Osteological collections are available. Especially for students taking the pre-medical, nurses', or physical education courses; open to others. Prerequisite, Zool. 3 and 7 or their equivalent. Lab. fee, \$3. 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. Lab. fee, \$3. Four credits; autumn, winter, spring.

Worcester.

108. *Special Dissections*. Designed for physicians or students who have completed the above courses in gross anatomy. Lab. fee, \$3. Credits to be arranged. Autumn, winter, spring.

Worcester.

110, 111, 112. *Special Demonstrations*. Designed for physical education and bacteriology majors. Lab. fee, \$1. Credits and hours to be arranged; autumn, winter, spring.

Worcester, Assistant.

MICROSCOPIC ANATOMY

105, 106. *Histology and Embryology*. Microscopic anatomy of developing and adult mammals studied in both fresh and fixed conditions. Especially for students in pre-medical and nurses' courses but open to others. Prerequisite, Zool. 1 or 3 or their equivalent. Lab. fee, \$3. Three to six credits for 105 (normal and abnormal microscopic anatomy for Harborview 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. Lab. fee, \$3. 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.

ANTHROPOLOGY

Museum and Education Hall

Assistant Professor Gunther; Instructor Jacobs; Associate Lopatin.

51. *General Introduction to Anthropology*. A survey of culture history and its processes of change and development; the origin and development of arts and industries; human races; pre-history; primitive languages, religions, mythologies, customs and social life. Five credits; autumn, winter. Gunther.

*52. *Primitive Society*.

101. *Basis to Civilization*. The structure of society and processes of development as illustrated by the life of North American Indians; survey of their arts, customs, institutions, and languages. Prerequisite, Anthropology 51 or 52 or instructor's permission. Three credits; spring.

*110. *Pre-history*.

111. *Indian Cultures of the Pacific Northwest*. A survey of the cultures of the Indian tribes west of the Rockies from Oregon through Alaska. Three credits; winter. Gunther.

112. *Peoples of the Pacific*. Life and customs of the natives of the South Seas, Australia, and the Philippines. Three credits; winter. Gunther.

*113. *Peoples of Northeastern Asia*.

*114. *Peoples of Central and Northern Asia*.

141. *Primitive Literature*. A survey of the forms and functions of oral tradition; comparison with methods in the study of European folklore. Three credits; spring. Gunther.

151. *American Indian Languages*. The phonetics and morphology of several North American languages; psychological, comparative and historical problems; methods of field research. Instructor's permission necessary. Three credits; spring. Jacobs.

*163. *Racial History*.

185. *Primitive Social and Political Institutions*. Forms and development of social institutions, such as the family, clan, government, and law. Three credits; autumn. Gunther.

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. Staff.

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. Staff.

* Not offered in 1931-1932.

COURSES FOR GRADUATES ONLY

204, 205. *Anthropological Methods and Theories*. Analysis of culture; historical and psychological methods; theories of culture growth. Three credits; autumn, winter.

ARCHITECTURE

Architecture Building

Professors Thomas, May; Associate Professors Herrman, Gowen; Instructors Pearce, Pries; Lecturer Alden.

(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, fifteen 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. Exercises in drawing and the simpler elements of buildings. Two credits a quarter; autumn, winter. Herrman.

3. *Architectural Appreciation*. General appreciation of 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 architectural drawing, such as walls, doors, windows, colonades, and vaults. One hour lecture a week on the elements of architecture and library research. To be taken in connection with Arch. 7-8-9. Four credits a quarter; autumn, winter, spring. Herrman, Pearce.

7-8-9. *Graphical Representation*. Elementary principles of orthographic projections, geometrical determination of shades and shadows on architectural forms; and principles and methods of perspective as applied to architectural drawing. To be taken in connection with Arch. 4-5-6. One credit a quarter; autumn, winter, spring. Pearce.

40, 41, 42. *Freehand Drawing, Water Color*. Still life studies and outdoor sketching in water color. Lab. fee, \$1. Prerequisite, P.S.D. 34. 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. Principles of historic design in terms of structural element. Illustrated lectures and library research. 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. Work is done under the Society of Beaux Arts, New York, system and work is

sent to New York for judgment in competition with work from the leading architectural schools of the country. B.A.I.D. Analytique. Lab. fee, \$7.50 for the year. 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. Illustrated lectures and library research. 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 Projet). Lab. fee, \$7.50 for the year. 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. Lab. fee, \$1. Prerequisite, P.S.D. 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. May.

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. May.

120-121-122. *Working Drawings*. Lectures on simple building construction. Drafting room practice in working drawings. Interpretation of rough sketches and design studies in terms of construction. Full size and large scale studies of details. Inspection trips. Two credits a quarter; autumn, winter, spring. Pearce.

125-126. *Pencil Sketching*. Pencil sketches of architectural subjects—the first quarter from photograph, the second from actual subjects. Criticism once a week on work done. Sketching to be done outside of class hours. Definite number of sketch points required for the course. One credit a quarter; winter, spring. Pearce.

140, 141, 142. *History of Architectural Ornament*. A comparative study of the historic development of architectural ornament. Illustrated lectures and criticism of drawing assignments. 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. Illustrated lectures, library research, class discussions and papers. 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. *Architectural Design, Grade III*. Advanced design under individual criticism. (B.A.I.D. Class A Projet.) Lab. fee, \$7.50 for

¹ General 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.

Note: Fee for Design, Grades I, II, III is \$7.50 for the academic year unless the student has previously registered for preceding grade the same academic year.

the year. Prerequisite, Arch. Design, Grade II. Five credits a quarter; autumn, winter, spring. Gowen, Pries.¹

158. *Thesis and Seminar*. Architectural design problem with structural details and reports covering a complete architectural project. Individual criticism subject to program and requirements as determined by the faculty. One seminar class hour per week for discussions of projects and of topics of current interest to architects. Prerequisite, Arch. Design, Grade III. Eight credits; autumn, winter, spring. Thomas, Gowen, Herrman.

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. (The amount of credits will be proportionate to the duration in weeks of the problems taken, with a maximum of seven credits and a minimum of three.) Fee, \$7.50 for the academic year or any quarter of the academic year unless student has previously, the same academic year, registered for Arch. 157, in which case, the amount of that fee will be deducted. Gowen.¹

*170. *Senior Mechanics*.

ASTRONOMY

The Observatory

Assistant Professor Jacobsen.

The work in astronomy is planned for (a) students who desire some knowledge of astronomy as part of a liberal education; (b) students of natural sciences who desire a knowledge of astronomy as part of their scientific background.

1. *General Astronomy*. A descriptive, non-mathematical course, designed to give the student some idea of the solar system, the stars, and the place of the earth in the universe. Five credits; autumn, spring. Jacobsen.

2. *Principles of Astronomy*. Discussion of the motions in the solar system, and of selected topics from practical astronomy. The treatment will be physical rather than descriptive. Prerequisites, Ast. 1, trigonometry; elementary physics desirable. Three credits; spring. Jacobsen.

101. *Astrophysics and Stellar Astronomy*. Discussion of the physical properties of the sun and the stars; their spectra, luminosities, temperatures, masses, and the methods for obtaining them; motions and distances of stars, star clusters and spiral nebulae; binary stars, variable stars, novae, galactic nebulae, and other subjects. Prerequisites, Ast. 1, Phys. 1, 2, 3, or 97, 98, 99, or special permission. Four credits; winter. Jacobsen.

AVIATION

Ground School Course

See Naval Science and Tactics.

¹ General 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.

*Not offered in 1931-1932.

BACTERIOLOGY AND PATHOLOGY

Johnson Hall

*Professor Weinzirl; Assistant Professor Hoffstadt; Lecturer Balle;
Associate Berry and Assistants.*

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.*

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. Lab. fee, \$5. Five credits; autumn, winter, spring, summer. Weinzirl, Berry.

102. *Sanitary Bacteriology.* Bacteriology of soil, air, water, sewage, foods, clothing, etc. Prerequisite, Bact. 101. Lab. fee, \$5. Five credits; winter. Weinzirl, Berry.

103. *Public Hygiene.* Lab. fee, \$1. Five credits; lectures only; autumn, spring. Weinzirl.

104. *Serology.* Types of immunity; immunization of animals and man; study of immune products. Prerequisite, Bact. 101. Lab. fee, \$6. Five credits; spring. Hoffstadt.

105. *Infectious Diseases.* Study of the pathogenic bacteria, and methods of diagnosis of infectious diseases. Prerequisite, Bact. 101. Lab. fee, \$6. Five credits; autumn. Hoffstadt.

106. *Clinical Diagnosis* Examination of blood, urine, gastric and intestinal contents, parasites, etc. Prerequisite, Bact. 101. Lab. fee, \$6. Five credits; winter. Hoffstadt.

110, 111, 112. *Pathology.* Gross and microscopic study of diseased tissue. Prerequisite, Anat. 105. Lab. fee, \$6. Five credits; autumn, winter, spring. Balle.

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. Berry.

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.

207, 208, 209. *Seminar*. Two credits; autumn, tuberculosis; winter, filterable viruses; spring, public health administration. 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

Professors Frye, Rigg; Associate Professor Hotson.

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 3, 92, 105, 106, 107 are suggested.

For pharmacy students, 13, 14.

For forestry students, 11, 111, 140, 141, 142.

1. *Elementary Botany*. Structure and functions of roots, stems, leaves and seeds. Open to students entering with or without botany. Lab. fee, \$2. Five credits; 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. Lab. fee, \$2. Five credits; winter. Frye and assistants.

3. *Elementary Botany*. Plant analysis; field work with local flora. Open to students entering without botany. Lab. fee, \$2. Five credits; spring. Frye and assistants.

*11. *Foresters' Botany*.

13, 14. *Pharmacy Botany*. Gross structure of vegetative and reproductive parts of seed plants, brief study of spore plants; microscopy of powdered drugs. Lab. fee, \$2. Five credits; autumn; four credits, winter.

Rigg and assistants.

90. *Greenhouse Practice*. Students do actual work in the University greenhouse, gaining knowledge of soils, fertilizers, methods of propagation, etc. Lab. fee, \$2. Three credits; autumn.

92. *Ornamental Plants*. The plants used in beautifying lawns and houseyards, their propagation and use. Lab. fee, \$3. Five credits; spring.

105, 106, 107. *Morphology and Evolution*. Morphological study of types to show advances in complexity. Required for all majors unless courses 11 and 12 are taken in the freshman year. Prerequisites, one year high school botany, or 10 credits of botany, or Zool. 1 and 2. Lab. fee, \$3. Five credits a quarter; autumn, winter, spring. Frye and assistants.

111. *Forest Pathology*. Recognition and treatment of common wood

* Not offered in 1931-1932.

destroying fungi. Prerequisite, Bot. 11 or 105. Lab. fee, \$2. Five credits; spring.

129. *Plant Anatomy*. The cellular structure of plants. The origin and development of the stile. Prerequisite, 15 credits of botany. Lab. fee, \$3. Five credits; winter.

130. *Taxonomy*. The flowering plants. Prerequisite, 15 credits of botany. Fee, \$3. Five credits; autumn.

140, 141, 142. *General Fungi*. Morphology and classification of fungi as a basis for plant pathology. Prerequisites, Bot. 11 or 105, junior standing. Lab. fee, \$3. Five credits a quarter; autumn, winter, spring. Hotson.

143, 144, 145. *Plant Physiology*. Prerequisite, three quarters of botany and Chem. 22. Desirable prerequisites, Chem. 133 and Physics 2. Lab. fee, \$3. Five credits a quarter; autumn, winter, spring. Rigg.

*180, 181, 182. *Plant Pathology*.

199. *Proseminar*. Semi-independent work by students. Open only on consultation with the head of the department. Lab. fee, \$2. Two to five credits; any quarter. Frye, Rigg, Hotson.

Teachers' Course in Botany. See Edu. 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.

220. *Advanced Fungi*. Prerequisite, Bot. 142. Lab. fee, \$3. Five credits; any quarter. Hotson.

233. *Research*. Lab. fee, \$2. Two to five credits; any quarter.

Frye, Rigg, Hotson.

247. *Diatoms*. Prerequisite, Bot. 53 or 105. Lab. fee, \$3. Three credits; autumn. Frye.

250. *Algae*. Prerequisite, Bot. 105. Lab. fee, \$3. Credits to be arranged; autumn, spring. Frye.

251. *Bryophytes*. Prerequisite, Bot. 106. Lab. fee, \$3. Credits to be arranged; autumn, winter. Frye.

271, 272, 273. *Experimental Morphology*. Prerequisites, Bot. 106, 145, one year chemistry. Lab. fee, \$2. Two credits a quarter; autumn, winter, spring. Frye.

279. *Colloidal Biology*. Prerequisites, Bot. 143, Chem. 132. Desirable prerequisites, Chem. 141 and 204. Lab. fee, \$3. Five credits; any quarter. Rigg.

280. *Micrometabolism*. Prerequisites, Bot. 12 or 107, 145. Lab. fee, \$3. Five credits; any quarter. Rigg.

281. *Physiology of the Fungi*. Prerequisites, Bot. 142, 145, 280. Lab. fee, \$3. Five credits; any quarter. Rigg.

* Not offered in 1931-1932.

CERAMICS

Mines Hall

See Mining, Metallurgy and Ceramics.

CHEMISTRY AND CHEMICAL ENGINEERING

Bagley Hall

Professors Benson, Johnson, Dehn, Smith, Tartar, Thompson, Lynn; Assistant Professors Beuschlein, Powell, Norris; Instructors Sivertz, Robinson, Lang; Associate Radford.

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 B.S. in the College of Science (see College of Science bulletin); (2) the suggested curriculum for those who intend to make use of chemistry as a vocation, leading to the degree of B.S. in chemistry (see College of Science bulletin); (3) the prescribed curriculum in chemical engineering for those who plan to engage in manufacturing industries, leading to the degree of B.S. in Chemical Engineering (see College of Engineering bulletin). Courses 7, 8, 9, 10, 37, 38 and 39 may not be counted toward a major in the department.

A fee is charged for each laboratory course. This covers general laboratory expense such as gas, water and depreciation. 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 tickets 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 2-hour laboratory periods a week. Lab. fee, \$6.50. Five credits a quarter; any quarter. Smith, Tartar, Thompson, Powell, Sivertz.

7. *General Chemistry for Hospital Students.* Three recitations and two 2-hour laboratory periods. Lab. fee, \$6.50. Any quarter. Five credits. 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. Lab. fee, \$6.50. 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 2-hour laboratory periods a week. Lab. fee, \$6.50. Five credits a quarter; any quarter. Smith, Tartar, Thompson, Powell, Sivertz.

23. *Elementary Qualitative Analysis.* Prerequisite, Chem. 2 or 22, or equivalent. Two lectures, one recitation and two 2-hour laboratory periods a week. Lab. fee, \$6.50. 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. Lab. fee, \$6.50. Five credits a quarter; autumn, winter, spring. Johnson.

52. *Chemical Technology*. Application of mathematics, physics, and chemistry to unit chemical operations. No fee. Prerequisites, Chem. 23, Physics 1 or 97 and Math. 61. Three lectures. Three credits; autumn, spring. Beuschlein.

*55. *Forest Products*.

*56. *Forest Soils*.

101. *Advanced Qualitative Analysis*. Two lectures and three laboratory periods a week. Prerequisite, Chem. 23 or its equivalent. Lab. fee, \$6.50. Five credits; autumn, spring. Thompson.

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. Lab. fee, \$4. Four credits; spring. Norris.

109. *Quantitative Analysis*. Gravimetric analysis. Prerequisite, Chem. 23 or its equivalent. Two lectures and three laboratory periods a week. Lab. fee, \$6.50. Five credits; autumn, winter. Thompson.

110. *Quantitative Analysis*. Volumetric analysis. Two lectures and three laboratory periods a week. Prerequisite, Chem. 109. Lab. fee, \$6.50. Five credits; winter, spring. Thompson.

111. *Quantitative Analysis*. Gravimetric and volumetric methods for students not majoring in chemistry. Prerequisite, two quarters of chemistry. Two lectures and three laboratory periods a week. Lab. fee, \$6.50. Five credits; autumn, winter, spring. Thompson.

118. *Industrial Chemistry for Engineers*. (Offered every other year alternating with Chem. 119). The study of fuels, lubricating oils, alloys, paints, and protective coatings. Prerequisite, Chem. 23 or equivalent. Two lectures and one laboratory period. Lab. fee, \$3. Three credits; spring. Benson.

*119. *Industrial Chemistry for Engineers*. (Offered every other year alternating with Chem. 118).

121, 122, 123. *Industrial Chemistry*. Autumn: fuel, gases, cements, refractories, iron, steel, and alloys; winter: processes for manufacture of acids, alkalis; spring: organic industrial chemistry, oils, fats, paints, rubber, cellulose products. Three lectures and two laboratory periods a week. Prerequisites, Chem. 52, 111 or equivalent. Lab. fee, \$6.50. Five credits a quarter; autumn, winter, spring. Benson, Beuschlein.

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. Lab. fee, \$6.50. 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. Lab. fee, \$6.50. Five credits; autumn, winter, spring. Dehn.

* Not offered in 1931-1932.

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. Lab. fee, \$6.50. Five credits a quarter; autumn, winter. Powell.

140-141. *Elementary Physical Chemistry*. Descriptive, non-mathematical, for pre-med and science students not majoring in Chemistry. Chemistry majors may, with the instructor's permission, take this instead of 181-182. Two lectures and one laboratory period. Prerequisites, Chem. 111, or equivalent, and ten hours of physics. Lab. fee, \$3. Three credits a quarter; winter, spring. Sivertz.

144. *Physiological Chemistry*. For fisheries and home economics students. Prerequisite, Chem. 129 or equivalent. Three lectures and two laboratory periods. Lab. fee, \$6.50. Five credits; spring. Norris.

150. *Undergraduate Thesis*. Investigation of special topics suggested by members of the staff. Report must conform to the thesis regulations of the library. Prerequisite, senior standing in chemistry. Fee, \$1 per credit. Two to five credits; any quarter. Staff.

152. *Advanced Chemical Technology*. Mathematical study of chemical processes with quantitative solutions of typical engineering problems. No fee. Prerequisite, Chem. 172. Three credits; spring. Beuschlein.

155. *Oceanographical Chemistry*. Composition of sea water, its general physical and chemical properties; colorimetric and spectral analysis; phase rule study of salt deposition; treatment of fundamental oceanographic data for hydrodynamical calculations; interpretation of chemical data. Prerequisite, Chem. 111. Three lectures. Three credits; winter. Thompson.

156. *Oceanographical Chemistry*. Laboratory methods. Prerequisite, Chem. 155. Lab. fee, \$1 per credit. One lecture and two laboratory periods. Three credits; spring. Thompson, Robinson.

161-162. *Physiological Chemistry*. For students of medicine, biology, bacteriology, and nutrition. Deals with chemical constitution, reactions, and products of living material both plant and animal. Prerequisites, Chem. 111 and 131 or equivalent. Three lectures and two laboratory periods. Lab. fee, \$6.50. 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. Lab. fee, \$3. Three credits; spring. Norris.

166. *Biochemical Preparations*. Preparations of special substances involving biochemical methods. Lab. fee, \$1 per credit. Two to three credits; autumn, winter, spring. Norris.

171, 172. *Chemical Engineering*. Basic operations common to chemical industries. Laboratory studies of typical apparatus. Three recitations and two laboratory periods. Prerequisite, Chem. 123. Lab. fee, \$6.50. Five credits; autumn, winter. Beuschlein.

173. *Chemical Engineering*. Continuation of Chem. 172. Three drawing periods a week. No fee. Prerequisites, Chem. 52, 123. Three credits; spring. Beuschlein.

176, 177, 178. *Chemical Engineering Thesis*. Subject to the approval of the head of the department, the student selects a suitable topic for investigation, which will be directed by the instructor concerned. A conference

hour must be arranged. Final report must comply with the regulations of the University library. Fee, \$1 per credit. One to five credits a quarter; autumn, winter, spring. Benson, Beuschlein.

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. Lab. fee, \$6.50. Five credits a quarter; autumn, winter, spring. Tartar, Sivertz.

190, 191. *History of Chemistry*. (Offered every other year, alternating with Chem. 205, 206, 207). Lectures and assigned readings. Prerequisite, Chem. 129, 182. No fee. Two credits; autumn, winter. Smith.

195. *Qualitative Organic Analysis*. Systematic methods of identification of organic compounds. Prerequisite, Chem. 129 or equivalent. One lecture and two laboratory periods. Fee \$3. Three credits; autumn. Powell.

Teachers' Course in Chemistry. See Edu. 75C.

COURSES FOR GRADUATES ONLY

200. *Departmental Seminar*. Required of all graduate students during residence. Assigned readings and reports on the chemical literature. No fee. 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.) Three credits. Tartar.

204. *Chemistry of Colloids*. (Offered every other year, alternating with 202, 203). Fundamental properties of substances in the colloid state. Surface phenomena such as surface tension and absorption. Three lectures. No fee. Three credits; autumn. Tartar.

*205, 206, 207. *Inorganic Preparations*. (Offered every other year alternating with 190, 191.) Smith.

208, 209. *Advanced Quantitative Analysis*. Theoretical principles of analytical chemistry. Prerequisites, Chem. 111 and 182 or equivalent. No fee. 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. Fee, \$2. Winter, spring. Powell.

215, 216. *Advanced Theoretical and Physical Chemistry*. (Offered every other year, alternating with 202, 203). Radioactivity, atomic structure, interrelation of the chemical elements, periodic system, energy exchange in atomic and molecular processes, activated molecules. Prerequisite, Chem. 182. Three lectures. No fee. Three credits; winter, spring. Tartar.

218, 219, 220. *Selected Topics in Industrial Chemistry*. An advanced course dealing with the application of fundamental chemical and economic principles to the materials, processes and products of typical industries. Lectures and written reports on journal literature. Prerequisite graduate standing in chemistry as a major. No fee. Two lectures a week. Two credits. Benson.

221, 222, 223. *Advanced Inorganic Chemistry*. Periodic system of the elements. Two quarters devoted to the elements and their ordinary com-

* Not offered in 1931-1932.

pounds, and one quarter to the chemistry of the higher order compounds. Recommended for all majors and graduate students. No fee. Three credits a quarter; autumn, winter, spring. Smith.

224. *Chemistry of Nutrition.* Enzyme and chemical reactions involved in digestion and metabolism. Prerequisite Chem. 111 or 110 and 129. Two lectures and one laboratory period. Lab. fee, \$3. 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. Lab. fee, \$3. Three credits; autumn, winter. Robinson.

228. *Chemical Microscopy.* Methods of micro-analysis involving the use of the microscope. Prerequisite, Chem. 226. Suggested prerequisites, Geol. 123 or Zool. 121. One lecture and two laboratory periods. Lab. fee, \$3. Three credits; spring. Robinson.

230. *Quantitative Organic Analysis.* Special methods used in the analysis of organic substances. Prerequisites, Chem. 132 and 110. Laboratory periods to be arranged. Fee, \$1 per credit. Three or six credits; autumn, winter. Thompson.

231, 232, 233. *Advanced Organic.* Detailed study of special fields of organic chemistry. Any quarter may be taken independently. Prerequisite, Chem. 129 or equivalent. No fee. Three lectures. Three credits a quarter; autumn, winter, spring. Dehn.

236. *Advanced Physical Chemistry Laboratory.* Advanced laboratory course in physico-chemical measurements. Work adapted to the interest and needs of the students and may include measurements in thermochemistry, electrochemistry, spectroscopy, ultramicroscopy, nephelometry, radioactivity, colloid chemistry, etc. Prerequisite, Chem. 182. Fee, \$1 per credit. 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). A detailed study of basic unit operations. Flow of fluids, heat transfer, fuels, combustion, gas producers and filtration. Prerequisite, calculus and Chem. 171. No fee. Three credits a quarter; autumn, winter, spring. Beuschlein.

*244, 245, 246. *Advanced Chemical Engineering.* (Offered every other year, alternating with 241, 242, 243.) Three credits. Beuschlein.

249. *Graduate Seminar.* Assigned readings and reports dealing with special topics. Offered as desired by members of the different divisions of the department. No fee. Hours and credits to be arranged; autumn, winter, spring. Staff.

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. Fee, \$1 per credit. Maximum, forty-five credits. Staff.

* Not offered in 1931-1932.

CIVIL ENGINEERING

Guggenheim Hall

Professors Tyler, More, Harris, May; Associate Professors Wilcox, A. L. Miller; Assistant Professors Collier, Hawthorn, Van Horn, Farquharson; Lecturer Hauan; Instructors Chittenden, Smith, Moritz, Sergev, Rhodes.

53. *Mine Surveying.* Study of special methods used in underground surveying. Observation for meridian; mining claim survey and topography. For mining engineers. Prerequisite, G.E. 21. Lab. fee, \$2. 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. Lab. fee, \$2. Two credits; winter. Chittenden, Hawthorn.

56. *Forest Surveying.* Plane surveying with reference to work in forestry. Orientation. Given at Pack Forest. Prerequisite, C.E. 55. Lab. fee, \$2. Five credits; spring. Chittenden.

57. *Transportation Surveying.* Simple, compound and transition curves, measurement and computation of earthwork. Complete survey notes and map for a short highway or railway grading project. Prerequisite, G.E. 21. Lab. fee, \$2. Four credits; autumn. Hawthorn, Chittenden.

58. *Transportation Engineering.* Highway and railway grades, width of roadbed, cut and fill slopes. Balancing of embankment and excavation quantities. Mass diagram and its use in the computation of "haul." Complete profile, mass diagram and estimate for a short highway or railway grading project. Prerequisite, C.E. 57. Four credits; winter. Hawthorn, Chittenden.

59. *Advanced Surveying.* Base line measurement and triangulation. Barometric, trigonometric and precise leveling. Astronomical determination of azimuth, latitude and time. Use of plane table. Adjustment of instruments. Hydrographic surveying. Prerequisite, G.E. 21. Lab. fee, \$2. Four credits; spring. Hawthorn, Chittenden.

106. *Sanitation and Plumbing.* For architects. Two credits; winter. Hauan.

121. *Roads and Pavements.* Location, construction and maintenance of roads and the construction and maintenance of streets and pavements. Pavement materials, accessories, and construction details. Prerequisite, C.E. 58. Three credits; winter. 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.* Highway and street systems. Selection and design of various types of pavements. Strengthening and protection of 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.

130. *Theory of Building Construction.* For architects. Three credits; autumn. May.

*Not offered in 1931-1932.

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 and reaction of jets with application to impulse wheels; review of hydrostatics. Prerequisite, C.E. 131. Lab. fee, \$2. 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. Lab. fee, \$2. 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. Lab. fee, \$3. Three credits; spring. Van Horn.

154. *Sanitary Design*. The design of sewers, sewage disposal plants and water purification plants. 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. Prerequisite, C.E. 150. Three credits; winter. Tyler.

157. *Reclamation*. Reclamation of land by drainage and levees. Elements of irrigation engineering. Prerequisite, C.E. 142. Three credits; spring. Van Horn.

158. *Sewerage and Sewage Treatment*. Design, construction, operation and maintenance of sewerage systems and sewage disposal plants. Refuse collection and disposal. Prerequisite, C.E. 150. Lab. fee, \$2. 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.* Investigation of the strength and physical characteristics of Portland cement, concrete and clay products. Principles of proportioning concrete. Prerequisite, C.E. 132. Lab. fee, \$2. Three credits; autumn. Collier.

163. *Materials of Construction.* Strength and physical characteristics of timber and steel. Prerequisite, C.E. 132. Lab. fee, \$2. Three credits; winter. Collier.

171. *Structural Analysis.* Reinforced Concrete—Investigation of the stresses in reinforced concrete structures and structural members. Prerequisite, C.E. 132. Lab. fee, \$2. 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.* Investigation of the 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. A, 100, 102 and Speech 103.

CLASSICAL LANGUAGES AND LITERATURE

Denny Hall

Professors Thomson, Sidey; Associate Professors Stone, Densmore; Assistant Professor Read; Associates Ballaine, Boxall.

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 fifty per cent of the hours in the major must be in upper division courses. A student majoring in Greek must have had at least one year of high school Latin or must take Latin 1-2 in the University. At the conclusion of the senior year all major students must take the senior examination.

1-2, 3. *Elementary Greek.* Translation from a wide range of Greek authors. An especial effort will be made to give students who take but one year of Greek an appreciation of its spirit and its bearing on the English language. A maximum of five credits a quarter. Densmore.

4, 5. *Socrates.* A study of the life and personality of the philosopher based on Plato's *Apology* and *Crito* and excerpts from other dialogues, Xenophon's *Memorabilia*, Aristophanes' *Clouds*. Prerequisite, Greek 3. Three credits; autumn, winter. Densmore.

6. *The World of Homer.* Readings from the story of Achilles and the wanderings of Odysseus on a background of a general study of the history of the period down to Hesiod. Prerequisite, Greek 5. Three credits; spring. Densmore.

11. *Greek Civilization.* Institutional and cultural survey of the Greek world from the earliest times to the Roman conquest. Illustrated lectures, conferences and discussions. Knowledge of Greek not required. Five credits; spring. Densmore.

13. *Greek Literature.* The masterpieces in English translations. Knowledge of Greek not required. Five credits; autumn, spring. Sidey.

15-16. *Greek Civilization and Literature.* Duplication of Greek 11, but including the literature in translation as a fundamental expression of the Greek genius. Knowledge of Greek not required. Open to freshmen only. Five credits a quarter; autumn and winter. Densmore.

17. *Greek and Roman Art.* A study of the main features of Greek and Roman architecture, sculpture and other arts, and their influence in modern times. Five credits; autumn. Sidey.

*101, 102, 103. *The Periclean Age.*

104, 105, 106. *Greek Poetry.* The lyric, the drama, the pastoral, the epigram. Prerequisite, Greek 103 or permission of the instructor. Three credits a quarter; autumn, winter, spring. Densmore

* Not offered in 1931-1932.

*151, 152, 153. *Plato*.

191, 192, 193. *Literary Criticism in Connection with Sophocles*. Readings in Aristotle and Longinus. Two to five credits a quarter; autumn, winter, spring. Densmore.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Greek Philosophy*. A survey of the most important documents covering the period of the pre-Socratics; the ethics of Plato and Aristotle; later developments down to Marcus Aurelius and Plotinus. Two to five credits a quarter; autumn, winter, spring. Densmore.

211, 212, 213. *Hellenistic Literature*. The phases covered in 1931-1932 will be primarily archaeological; Pausanias' Attica and selections from other parts, Strabo, Greek and Roman authorities on Greek sculpture. A reading knowledge of Latin required. Two to five credits a quarter; 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 fifty 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. 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. For those who previously have had little or no Latin, and wish to bring their preparation up to college requirements. Five credits a quarter; autumn, winter, spring. Stone.

4, 5, 6. *Cicero or Vergil*. Prerequisite, two years high school Latin or Latin 1-2, 3 in the University. May be substituted for the requirements in ancient language, life and literature. Qualifies a student for Latin 21. Review of grammar and syntax. Selections from Cicero or Vergil. Five credits a quarter; autumn, winter, spring. Boxall.

11. *Roman Civilization*. Class-room work two days a week on the private life of the Romans, with lectures on the alternate days illustrating the part played in history by the Romans, and their contributions to modern civilization. Collateral readings and reports. No knowledge of Latin required. Five credits; winter, spring. Boxall.

13. *Roman Literature*. The masterpieces in English translation. 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 some exercises in grammar and composition. Careful attention to English translation. Prerequisite, three and one-half years high school Latin. Five credits; autumn. Read.

22. *Catullus, Latin Literature* (Mackail). With some exercises in grammar and composition. Prerequisite, three and a half years of high school Latin. Five credits; winter. Read.

*23. *Vergil: Georgics and Bucolics*.

* Not offered in 1931-1932.

24. *Sallust: Jugurtha; Latin Literature* (Mackail). With some exercises in grammar and composition. Prerequisite, three and one-half years high school Latin. Five credits; spring. Read.

*25. *Ovid. Metamorphoses.*

100. *Livy.* One book and selections from the other books. Prerequisite, Latin 21, 22, 24, or special permission. Five credits; autumn. Stone.

101. *Horace.* Selections from the complete works. Prerequisite, Latin 21, 22, 24 or special permission. Five credits; winter. Stone.

102. *Tacitus: Germania and Agricola.* Prerequisites, Latin 21, 22, 24. Five credits; spring. Stone.

*103. *Plautus and Terence.*

104. *Martial: Epigrams.* Prerequisite, Latin 100 or 101 or 102. Three credits; winter. Stone.

106. *Syntax and Prose Composition* (Advanced). Students should, if possible, register for this course in combination with Edu. 75P, as the work of the two courses is closely correlated. Prerequisite, Latin 100 or 101 or 102 or equivalent. Three credits; autumn. Stone.

*107. *Cicero's Letters.*

109. *Pliny's Letters.* Prerequisite, Latin 100 or 101 or 102. Three credits; spring. Stone.

*113. *Roman Home Life and Religion.*

150. *Juvenal.* Selected satires. Prerequisite, Latin 109 or equivalent. Two to five credits; autumn. Sidey.

151. *Cicero: Tusculan Disputations.* Prerequisite, Latin 109 or equivalent. Two to five credits; winter. Sidey.

154. *Lucretius: De Rerum Natura.* General study of the poem with special reference to Books I, III, and V. 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.

207. *Seneca: Moral Essays.* A study of Stoic philosophy among the Romans, including readings from Epictetus and M. Aurelius. Two to five credits; autumn. Sidey.

* Not offered in 1931-1932.

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.* Selected portions of Petronius and Apuleius and some study of the development of Latin Romance. Two to five credits; winter. Sidey.

*213. *Latin of the Italian Humanists.*

216. *Christian Latin.* Selections from Minucius Felix, Augustine, Lactantius and other early Christian writers. Two to five credits; spring. Sidey.

240. *Relations of Latin to English and the Romance Languages.* Prerequisites, Latin 100, or equivalent, and French, Spanish, or Italian 101, or other preparation satisfactory to the instructor. Two credits; spring (see note). Stone.

285, 286. *Vulgar Latin.* Vocabulary and syntax; relations to archaic and classical Latin and to the Romance languages. Prerequisites, completion of an undergraduate major in Latin and three years of either French, Spanish, or Italian, or completion of an undergraduate major in one of the Romance languages and at least four quarters of college Latin. 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

Professors Gould, Preston, Dakan, McMahon, Burd, Coon, Skinner, Smith; Associate Professors Renner, Gregory, Demmery, Hall, McIntyre, Martin; Assistant Professors Farwell, Brown, Miller, Seeman, Butterbaugh; Lecturers McConahey, Robertson, Davis, Draper, Truax, Grass; Instructors Van de Walker, Calhoun, Pearson, Mackenzie, Haas, Wheeler, Harsch; Associate Hamack.

Economics. Courses 1, 2, 3, 100, 103, 104, 105, 106, 108, 121, 122, 124, 129, 131, 159, 160, 162, 164, 168, 173, 175, 181, 204, 206, 208.

Accounting. Courses 62, 63, 64, 65, 110, 111, 112, 154, 155, 156, 157, 185, 191ABC.

Business Correspondence. Course 115.

Business Law. Courses 54, 55, 56, 57.

Business Statistics and Forecasting. Courses 59, 175, 177.

Commercial Banking. Courses 103, 126, 127, 159, 189.

Commercial Teaching. Courses 102, Edu. 75E, Edu. 75F.

Foreign Trade. Courses 7, 116, 127, 143, 144, 145, 173, 195.

Insurance. Courses 108, 141, 142, 149.

* Not offered in 1931-1932.

Investment Banking. Courses 120, 121, 122, 176.

Labor. Courses 105, 162, 167, 181, 208.

Management. Courses 130, 167, 172, 196.

Marketing, Merchandising and Advertising. Courses 106, 134, 135, 136, 137, 138, 139.

Public Utilities. Courses 131, 132, 133.

Real Estate. Courses 164, 169.

Transportation. (Railroad) Courses 104, 107, 150, 151, 195.
(Water) Courses 53, 113, 119, 151, 152, 153, 195.
(Air) Courses 53, 195.

(B.A. 1 and 2 are absolutely prerequisite for all B.A. courses except with permission of the dean.)

1, 2. *General Economics.* General principles of economics. Fee, \$.50. Five credits; autumn, winter, spring. Dakan, Smith.

3. *General Economics.* Same as B.A. 1 above, abbreviated for students in chemistry, pharmacy, forestry and engineering. Three credits; winter, spring. Gould.

7. *Economic Geography.* A study of the environmental laws underlying the distribution of the major classes of raw materials; industrial organization in resource use; conservation of resources; factors locating industries; and the geographic laws of trade. (B.A. 1 and 2 not prerequisite.) Fee, \$.50. Five credits; autumn, winter, spring. Renner, Martin, Seeman.

53. *Sea and Air Navigation.* Principles of navigation; correction of courses; determination of position at sea or in the air; solution of problems. Prerequisite, sophomore standing. (B.A. 1 and 2 not prerequisite.) Five credits; winter. Farwell.

54. *Business Law.* An introduction to the law pertaining to commercial transactions and relationships. This and the following courses are designed to give the fundamentals of those branches of law which bear most closely upon the ordinary business transactions and, as well, to give training in legal reasoning and some acquaintance with the story of the growth and development of the law of English speaking peoples. In the three courses on business law primary consideration is given to the law of contracts and sales, with incidental treatment of such subjects as damages, remedies, negotiation, and business associations, developed in discussion from an analysis of cases and problems. The courses are designed to train the student in the analysis and solution of legal problems arising in ordinary business affairs. Prerequisite, sophomore standing. (B.A. 1 and 2 not prerequisite.) Three credits; autumn, winter, spring. Brown, Harsch.

55. *Business Law.* Continuation of B.A. 54 as outlined. Prerequisite, B.A. 54. Three credits; autumn, winter, spring. Brown, Harsch.

56. *Business Law.* Continuation of B.A. 55. Prerequisite, B.A. 54 and B.A. 55. Three credits; autumn, winter, spring. Brown, Harsch.

57. *Practical Business Relations.* Selected cases and problems from the field covered in B.A. 54, 55 and 56, to which reference may be made for particular description, offered to those unable to devote nine hours to the study of Business Law; a complete course, and 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. (B.A. 1 and 2 not prerequisite.) Five credits; autumn, winter, spring. Brown.

59. *Graphic and Tabular Analysis of Business Problems.* Application of statistical method to business and economic problems. Design and execution of diagrams, maps and tables for effective presentation of statistical results. Analysis of collected material. Five credits; autumn. Demmery.

62. *Principles of Accounting.* Functions of accounts; trial balances; balance sheets; profit and loss statements; books of original entry; ledgers; business forms and papers. Fee, \$.50. Five credits; autumn, winter, spring. Butterbaugh and assistants.

63. *Principles of Accounting.* Accounts peculiar to partnerships and corporations; manufacturing and cost accounts; classification of accounts; problems in valuation and depreciation; profits, surplus, and reserves. Prerequisite, B.A. 62. Fee, \$.50. Five credits; autumn, winter, spring. Hamack and assistants.

64. *Principles of Accounting.* Accounting analysis and control; construction and interpretation of accounting standards and measures; analysis of financial statements from management standpoint; problems in report writing. Prerequisite, B.A. 63. Fee, \$.50. Five credits; autumn, winter, spring. Gregory and assistants.

65. *Accounting Survey.* An elementary survey of the construction and interpretation of accounts; a service course designed solely for students in other colleges who have only one quarter available for accounting. Not open to Business Administration students. (B.A. 1 and 2 not prerequisite.) Five credits; autumn, winter, spring. Van de Walker.

100. *Economic and Industrial Development of the United States.* A survey of the important phases in the development of the American economic and industrial system with reasons therefor. Special attention will be given to manufactures, commerce, labor, finance, and agriculture. Five credits; spring.

102. *Principles of Office Management.* The office manager's problems of office administration. Attacks the problems of office control by the various activities and studies each in relation to all the others. Five credits; winter. Draper.

103. *Money and Banking.* Introductory course. Functions of money; standards of value; and principles of banking with special reference to the banking system of the United States. Five credits; autumn, winter, spring. Preston.

104. *Economics of Transportation.* A survey of the elements of transportation and communication, with particular reference to the history, modern development, and economic significance of rail, water, highway, and air transportation systems of the world; modern communication systems. (Open to sophomores in the College of Business Administration.) Five credits; autumn, spring. Farwell.

105. *American Labor Problems.* An historical survey of labor problems arising out of changing industrial conditions. Methods used by industrial and social agencies in meeting these problems. Not open to students who have credit in B.A. 60. Five credits; autumn, spring. McMahon.

106. *Economics of Marketing and Advertising.* Development of economic principles in marketing and advertising; market processes and systems; the middlemen and their functions. Five credits; autumn, winter, spring. Burd.

107. *Industrial Traffic Management.* A study of the duties of the industrial traffic manager, including the quotation of rates, the classification, routing, tracing and expediting of shipments, auditing freight bills, packing and receiving freight, arranging car supply and steamship space, etc. The Interstate Commerce Act and other carrier regulations will be studied in the light of ruling decisions, and numerous practice problems will be worked. Five credits; spring. Farwell.

108. *Risk and Risk Bearing.* The risk factor in its economic and social consequences and ways of meeting it. Five credits; winter. Smith.

110. *Advanced Accounting.* Problems of single entry; preparation of special working papers and accounting statements; advanced partnership and corporation problems; profits; dividends; applied mathematics of investments, sinking funds, annuities, etc.; problems in auditing. Prerequisite, B.A. 64. Five credits; autumn, winter, spring. Draper.

111. *Advanced Accounting.* Continuation of B.A. 110. Accounting for insolvent firms; statement of affairs; realization and liquidation statements; depreciation; appraisals and valuation of assets; liabilities; special funds; reserves; surplus; special problems connected with the issuance and redemption of corporate securities. Prerequisite, B.A. 110. Five credits; winter, spring. Draper.

112. *Advanced Accounting.* Continuation of B.A. 111. Accountancy of mergers, consolidations and holding companies; consolidated balance sheets and profit and loss statements; application of funds; consignments; agencies; installment sales; branch house accounting; vouchers; the private ledger; construction accounting; estates and allied topics. Prerequisite, B.A. 111. Five credits; autumn, spring. Draper.

113. *Port Development and Terminals.* Factors of a well co-ordinated terminal; modern terminal facilities for the various branches of transportation, rail, water, auto, and air; controlling commissions; free zones; terminal regulations. Prerequisite, B.A. 152 or 150 or 116. Three credits; winter. Farwell.

115. *Business Correspondence.* Business letters; 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.

116. *Principles and Practice of Foreign Trade.* The causes and development of world trade. Its tendencies and significance in the affairs of nations. The possible advantages and disadvantages of foreign trade to a country. Obstacles to its progress; customs barriers, embargoes, depreciated currencies. A comparative survey of the recent international trade of the principal nations of the world. Importing and exporting problems. Not open to students who have credit in 117 or 118. Prerequisite, B.A. 7. Five credits; winter, spring. Skinner.

117, 118. *Commercial Education.* The purpose of this course is to prepare students majoring in commercial teaching to teach shorthand, typewriting, and office practice. This course is required of all commercial teaching majors and is not open to other students. Prerequisite, one year each of high school shorthand and typewriting or equivalent. Fee, \$10 each quarter. Five credits each quarter to commercial teaching majors only; autumn, winter. Hamack.

119. *Water Transportation.* Economics of shipping with particular reference to organization and management; shipbuilding and operating costs; rate practice and control; pool agreements and conferences; ocean routes; shipping subsidies; American Merchant Marine policy, past and present, etc. Prerequisite, B.A. 104 and senior standing. Five credits; spring. Gould.

120. *Business Organisation.* Business corporations; associations, combinations; special reference to their functions, operation, advantages and disadvantages, relation to the anti-trust laws. Five credits; autumn. Dakan.

121. *Corporation Finance.* Financial problems connected with promotion of corporations, underwriting and sale of securities, management, expansion and reorganization of unsuccessful corporations. Prerequisites, B.A. 62, 103. Five credits; autumn, winter. Dakan.

122. *Principles of Investment.* A study of the underlying principles of investment credit; and a description of the origin and purpose of the various credit instruments used; the selection of sound investments; the investment policy of individuals and institutions; care of investments; the investment market and its relation to the money market. Prerequisite, B.A. 103. Five credits; winter, spring. Dakan.

124. *Public Finance.* A brief survey and analysis of fiscal thought; the growth and fundamentals of public expenditures in modern times; the sources and underlying economic principles and theory of public revenues except taxation; the principles and practices of public credit and a critical evaluation of public financial administration. Five credits; autumn. Hall.

126. *Commercial Credit.* Extension of credit; the credit department; sources of information; credit analysis; credit insurance; practical problems. Prerequisite, B.A. 64, 103. Five credits; autumn. Draper.

127. *Foreign Exchange and International Banking.* Theory of international exchange; rates of exchange; financing imports and exports; specie movements; foreign money market factors; foreign banking by American institutions; financing foreign trade; present status of foreign exchange. Prerequisite, B. A. 103. Five credits; spring. Skinner.

129. *Taxation.* The economic theory and principles basic to problems in taxation; taxation in national, state and local governments; the character of various kinds of taxes; an evaluation of the model tax system of the National Tax Association; theories and problems of classification, equity and incidence in taxation. Prerequisite, B.A. 124. Five credits; winter. Hall.

130. *Industrial Management.* The study of productive enterprises based on scientific method. Organization, location, physical properties, operation and control. Not open to students who have credit in B.A. 163. Five credits; autumn, winter. McIntyre.

131. *Economics of Public Utilities.* The development of the fundamental economic theory underlying public utility industries; their economic, social and legal characteristics; monopolistic nature; problems of joint, special and differential costs; load factors, diversity factors, etc.; basic factors in rate-making; the determination of price and fundamentals of sound rate practice. Five credits; autumn. Hall.

132. *Management of Public Utilities.* Basic administrative problems of plant location; differential rates and rate schedules; off-peak power; contract rates; prices as affected by volume of sales; public relations; problems of production and interconnection with special attention to Pacific Coast conditions. Prerequisite, B.A. 131. Five credits; winter. Hall.

133. *Control of Public Utilities.* Fundamental basis of utility control; legislative and administrative problems of regulation; state and federal regulation of public utilities; growth and activity of regulatory commissions; court decisions on fair value and fair return evaluated; the determination of fair value and fair return; problems and practice of utility taxation;

the public utility holding company and the problems of regulation raised thereby; municipal ownership and operation with its incidental problems. Five credits; spring. Hall.

134. *Wholesaling*. The wholesale functions. Agencies performing these functions. Historical development and economic justification of both functions and agencies. Co-operative and other group activities involving the wholesale functions. Recent trends and future prospects. Prerequisite, B.A. 106. Five credits; autumn. Miller.

135. *Retailing*. The various types of retail organizations. Their evolution, present status and future prospects. The economic functions performed by each type. Their relative efficiency. Prerequisite, B.A. 106. Five credits; winter. Miller.

136. *Advertising*. Advertising as a business force. Its economic justification as a factor in marketing. Analysis of current criticisms. Advertising organizations. Their functions and procedure. Prerequisite, B.A. 106. Five credits; spring. Miller.

137. *Problems in Wholesaling*. Individual and group study of problems in wholesale distribution of consumers' goods and industrial goods. Co-operatives, auctions, commodity exchanges, terminal markets, lease systems, sales agencies, etc. Compiling, organizing and interpreting data from original and library sources. Wide reading in current literature. Required business contacts. Prerequisite, B.A. 134, 135, 136 and consent of instructor. Fee, \$.50. Five or ten credits each quarter with a maximum of fifteen credits for the course; autumn, winter, spring. Burd, Miller.

138. *Problems in Retailing*. Individual and group study of problems in retail distribution. Buying, selling, turnover, price policies, stock and budgetary control, personnel, sales promotion, methods of reducing costs, etc. Compiling, organizing, and interpreting data from original and library sources. Wide reading in current literature. Required business contacts. Prerequisites, B.A. 134, 135, 136 and consent of the instructor. Fee, \$.50. Five or ten credits each quarter with a maximum of fifteen credits for the course; autumn, winter, spring. Burd, Miller.

139. *Problems in Advertising*. Individual and group study of problems in advertising. The single advertisement, the campaign, media, the advertising agency, costs, measurement of results, etc. Compiling, organizing, and interpreting data from original and library sources. Wide reading in current literature. Required business contacts. Prerequisites B.A. 134, 135, 136 and consent of the instructor. Fee, \$.50. Five or ten credits each quarter with a maximum of fifteen credits for the course; autumn, winter, spring. Burd, Miller.

141. *Insurance I*. A general course in the principles of insurance. The economic basis of insurance; the functions of the various types of insurance. Five credits; autumn.

142. *Insurance II*. Application of the general principles to the various forms of insurance such as life, health, accident, fire, marine, casualty, automobile, etc. Prerequisite, B.A. 141. Five credits; winter.

145. *World Trade*. Economic conditions of Canada, Mexico, and Central and South America, and the trade relations of these regions with the rest of the world, especially with the United States. Prerequisite, B.A. 7. Five credits; autumn, winter. Skinner.

149. *Marine Insurance*. Liabilities of ocean carriers; plans of marine insurance; classification societies; boards of marine underwriters; surveyors;

risks covered by United States and foreign companies; insurable interests; warranties, particular average; general average; marine certificates; types of policies; problems and cases involving claims. Prerequisite, B.A. 152 or 150 or 116. Five credits; autumn. Farwell.

150. *Railroad Transportation.* A study of the methods by which railroads are financed, administered, and operated; comparison of American and foreign systems; survey of railroad legislation in the United States, with particular reference to federal regulation since 1920. Prerequisite, B.A. 104. Five credits; spring. Farwell.

151. *Transportation Rates.* The principles of rate making in the various fields of transportation; rail, marine, motor, air, telephone, telegraph, and radio rates, and the factors that influence them; present rate practice; legislation and ruling decisions affecting the rate making power. Prerequisite, B.A. 104. Five credits; autumn. Gould.

152. *Principles of Ship Operation.* The course deals with operation as distinguished from administration, and emphasis is placed on the economic factors which influence the construction, maintenance and operation of ships. Types of vessels are considered, the stress and stability of hulls, methods of propulsion, private agencies involved in operation. Not open to students who have credit in B.A. 42 and B.A. 49. Prerequisite, B.A. 104. Five credits; autumn, winter. Gould.

153. *Business Administration of Shipping.* Organization and main activities of officials, departments, and committees in the different branches of transportation; common shipping documents required of carriers, forwarders, foreign governments, and the United States government; charter parties; carriers' liabilities; claims; problems of regulation. Not open to students who have credit in B.A. 67. Prerequisite, B.A. 152 or 150 or 116. Five credits; autumn, winter, spring. Gould.

154. *Cost Accounting I.* Organization of cost department, relation of cost to other departments; production factors; cost finding methods; material and labor records. Preparation of operating statements. Prerequisite, B.A. 112. Five credits; winter. McConahey.

155. *Cost Accounting II.* Production and service departments; distribution of manufacturing expense; preparation of cost reports in planning and controlling production; standard costs, etc. Prerequisite, B.A. 154. Five credits; spring. McConahey.

156. *Auditing.* Auditing procedure; balance sheet audits; analysis of asset and liability values; profit and loss statement audits; analysis of income and expense; certifications and reports; classifications of audits and investigations. Prerequisite, B.A. 112. Five credits; autumn. McConahey.

157. *Income Tax Accounting.* Government decisions affecting the practical determination of taxable income; persons, corporations, partnerships subject to tax; exemption and exception; deductions and allowances; preparation and analysis of returns. Prerequisite, B.A. 112. Five credits; autumn. McConahey.

159. *Advanced Money and Banking.* This course presupposes a knowledge of our existing financial organization and devotes attention to questions of banking and monetary policy. Topics included are: banking structure; bank management; federal reserve policy; money, bank credit and prices; foreign banking systems; international financial policy; agricultural credit; financial problems of special groups. In addition, each student makes a

special study of a selected subject and prepares a report or term paper thereon. Prerequisite, B.A. 103. Five credits; spring. Preston.

160. *Advanced Economics*. A study of 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. Five credits; autumn. McMahon.

*162. *European Labor Problems*.

164. *Economics of Real Estate*. Economic principles underlying the utilization of land; forces influencing the growth and structure of cities; urban land values; land ownership; city and regional planning. Five credits; autumn, spring. Demmery.

167. *Personnel Administration*. Labor surveys, employment forms, job analysis and job specifications, time study, foreman training, wage determination, labor turnover, employees' associations and effective correlation of labor with manager and plant. Five credits; winter. Mackenzie.

168. *Development of Economic Thought*. A study of the contributions of the classical and neo-classical economists and their contemporary critics. Primary sources will be used and attention will be given to the industrial, social, and political background of economic thought. Prerequisite, 135 credits and B.A. 160. Five credits; winter. Coon.

169. *Applied Economics of Real Estate*. Principles and practices of the real estate business; appraisals, financing and the selling of real estate; property management. Prerequisite, B.A. 164. Five credits; winter. Demmery.

172. *Executive Technique and Budgetary Control*. Internal organization of the business, departmental organization and co-ordination; various systems of management; use of reports and charts and consideration of problems presented by local industries. Five credits; spring. Mackenzie.

173. *International Commercial Policies*. Principles and practices in the economic and commercial relations of the nations of the world, considered with particular reference to American foreign trade. Five credits; autumn. Skinner.

175. *The Business Cycle*. Survey of past business cycles; analysis of present business conditions; investigation of the causes of business fluctuations, more particularly the business cycle; and proposals for controlling business fluctuations. Prerequisite, B.A. 103. Five credits; winter. Demmery.

176. *Investment Analysis*. An analytical study of typical industrial, public utility and railroad securities. Analysis of financial operations, revenue and expense reports and their relation to investment values. The principles of valuation and rate structure of public utilities. Problems. Prerequisites, B.A. 64, 121, and 122. Five credits; spring. Dakan.

177. *Business Forecasting*. Application of the methods of forecasting business conditions; the use and appraisal of business statistics, business barometers and the important non-business factors which affect business and financial conditions; 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; influence on the pro-

* Not offered in 1931-1932.

duction and distribution of wealth. Attempts to control consumption through private and governmental agencies. Prerequisite, B.A. 105. Five credits; winter. McMahon.

185. *C.P.A. Problems*. Selected problems covering various accounting principles. Work taken from American Institute and state C.P.A. examinations. Emphasis placed on speed, accuracy and forms of presentation. Prerequisite, B.A. 112. Five credits; winter. McConahey.

189. *Bank Credit Administration*. A study of the administration of bank credit based on actual problems selected from portfolio of Pacific Northwest banks. Prerequisite, B.A. 103. Three credits; winter. Truax.

191. *Problems in Accounting and Administration*. Selected problems in advanced accounting and administration and the application of theory to actual practice. Prerequisite, B.A. 112. Five credits; autumn, spring. Davis, Robertson.

195AC. *Research in Foreign Trade*. Two-five credits; autumn, spring. Skinner.

196ABC. *Research in Public Utilities and Management*. Two-five credits; autumn, winter, spring. Hall.

COURSES FOR GRADUATES ONLY

204ABC. *Graduate Seminar in Economics*. Designed 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 selecting 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, B.A. 168 or the equivalent, and consent of the instructor. Seven credits each quarter; autumn, spring. Coon.

206ABC. *Graduate Seminar in Finance*. This course is intended 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. Prerequisite, 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. Students electing this course will be expected to devote approximately half of their time to it. Prerequisites, at least one advanced course in labor, and consent of the instructor. Seven credits each quarter; winter, spring. McMahon.

Teachers' Courses in Business Administration

Educ. 75E. *Commercial Teachers' Course*. Five credits (two credits only count in education); spring. Draper.

Educ. 75F. *Teachers' Course in Shorthand and Typewriting*. Five credits (two credits only count in education); spring. Hamack.

EDUCATION

Education Hall

Professors Bolton, Uhl, Bishop, Cole; Associate Professors Jessup, Williams, Dvorak, Draper; Assistant Professors Foster, Corbally, Powers.

Note: All special teachers' courses are listed and numbered as Education courses.

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 of the senior year. Placements for the spring term are limited. Courses 60, 70, and 71 and one teachers' course in a special subject, numbered 75, are regularly required for the five-year normal diploma.

As a result of a petition by the students, an education library fee of 50 cents is charged each student for each course in education, except in courses 60, 62, which have a fee of \$1; 71, which has a fee of \$4; 90, 191, which have a fee of \$3; and 290, a fee of \$1.50. According to the agreement, students will not be required to purchase more than one textbook in any one course.

I. ELEMENTARY COURSES (UPPER DIVISION CREDIT)

9. *Psychology of Secondary Education.* The psychological basis of secondary education. Deals with the growth of mental functions, individual differences, and the psychology of teaching procedures. Emphasizes conduct as a conditioning process. Prerequisites, Edu. 60, 90, and Psych. 1. Three credits; autumn, winter, spring. Bolton, Powers.

60. *Principles of Secondary Education; Problems of the Senior High School Teacher.* The history of secondary education in the United States is treated as a background for introducing present-day problems of articulation, guidance, extra-class activities, and curricula. The senior high school as an institution, the senior high school teacher and senior high school curricula are basic units of the course. Lectures and laboratory exercises. The student may fulfill the requirement in secondary education by taking Edu. 60 or 62. Credit may not be earned in both courses. Fee, \$1. Three credits; autumn, winter, spring. Draper.

62. *Principles of Secondary Education; Problems of the Junior High School Teacher.* This course is the same as Edu. 60 with the exception that the emphasis is upon the junior high school as an institution, the junior high school teacher and the junior high school curricula. Lectures and laboratory exercises. Students who register for this course may not receive credit in Edu. 60. Fee, \$1. Three credits; autumn. Draper.

70. *Introduction to High School Procedures.* Methods and observation of high school teaching. Lectures and laboratory exercises. The lectures will describe and interpret types of methods. The laboratory exercises will consist of controlled observation of high school teaching and the assembling of materials to be applied in observation and practice teaching. Prerequisite, Edu. 60 or 62, 90, and 9. Five credits when taken in conjunction with Edu. 75, otherwise four credits; autumn, winter, spring. Williams, Corbally, Powers.

71. *Cadet Teaching.* One lecture a week, conferences with the director and supervisors, assigned readings, and one hour each day devoted to observation and cadet teaching under supervision of the Seattle city schools. Prerequisites, Edu. 60 or 62, 90, 9, 70, and 75 or approved equivalent. Fee, \$4. Eight credits; autumn, winter, spring. Foster, Corbally, Powers.

Cadets electing the fall semester will register for eight credits. Fall registration may show a maximum of nineteen credits, as three credits will apply on the winter schedule. The maximum registration for the winter quarter will be fourteen credits. Cadets electing the spring semester will register for eight credits for the winter quarter. The registration of cadets for the spring semester may show a maximum of twenty-one credits for the winter quarter, as five of the eight credits will apply on the spring schedule. The maximum registration for the spring semester will be eleven credits. (Physical education majors note 71P.)

Cadets registering for the fall semester will report to the office of the director, 114A Education Hall, Monday, September 21, 8 a.m., for assignment. Spring semester cadets will report Saturday, January 30, 8 a.m. for assignment.

Applications for cadet teaching must be filed in the office of the director one quarter preceding the beginning date of cadet teaching. All registration blanks involving cadet teaching must be submitted to the director for approval before registration can be completed. Three successive free hours should be provided in the schedule for cadet teaching. The same free hours must be provided for the two quarters in which cadet teaching falls.

71P. Cadet Teaching for Physical Education Majors. Eight credits; three quarters required. Cadets will register for eight credits in the fall quarter. Fall registration may show a maximum of twenty-one hours, since two and one-half hours will be automatically allotted to each quarter; hence the registration for the winter and spring quarters will not exceed thirteen and one-half hours. Cadets will be assigned for one semester in elementary school teaching and one semester in junior or senior high school teaching. Cadet teaching in the elementary schools will be three days a week, one hour per day, for one semester, and in the high school, two days a week, one hour per day, for one semester.

90. Measurement in Secondary Education. The use of tests and scales in secondary education. The measurement of individual differences by intelligence tests, elementary statistical methods, as applied to records and the handling of educational data, and the construction of educational achievement or subject tests and scales. Prerequisite, Edu. 60. Lab. fee, \$3. 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 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. No lab. fee. Prerequisite, at least 20 credits of college chemistry of average B grade. Two credits; autumn, winter, spring. Tartar.

75D. Civics. Attitude of approach, arrangement of material, methods of presentation; development of an appreciation of the reality of our political

system; use of material, textbooks, current articles, legislative bills, sample ballots, observation of local government agencies. Two credits; spring.

Cole.

75E. *Commercial Course*. Typical business courses are examined and made the basis of discussions on needs of local business conditions. Study of the content of high school commercial courses and of texts. Prerequisite, 30 credits of the 54 required for a major in commercial teaching including fifteen credits in accounting. Five credits; spring. Two credits only count as education credit; three credits as business administration.

Draper.

75F. *Commercial Course, Shorthand and Typewriting*. To prepare students for teaching shorthand and typewriting. Correlation of this work with actual work in business houses. Prerequisites, 30 credits of the 54 required for a major in commercial teaching, and proficiency in shorthand and typewriting. Five credits; spring. Two credits only count as education credit, three credits as business administration.

Hamack.

75G. *Dramatic Art*. Two credits; spring.

Blaisdell.

75H. *English*. Methods and problems in the teaching of English in the high school. This course or 75I, Composition, and 75J, Literature, are required of majors in English for a normal diploma. Students failing in an examination on English composition given at the beginning of this course will be required to earn credit for 75I, Composition, before entering 75H, English. Two credits; autumn, winter, spring.

Sperlin.

75I. *English Composition*. The materials and methods of teaching composition to secondary school students. Two credits; autumn, winter.

Sperlin.

75J. *English Literature*. A study of the classics accepted for entrance to the University from the point of view of their interpretation and of their presentation to high school students. Two credits; spring.

Sperlin.

75K. *French*. Aims, and methods best suited to attain them. Prerequisites, French 41, 101, 102, 103, 158, and 159. Two credits; autumn.

Frein.

75L. *German*. Aims and methods of teaching German; preparation of the teacher; lesson plans; tests; courses of study for high schools; textbooks and aids in teaching; realia in German; observation in elementary classes. Prerequisite, Ger. 110, or consent of instructor. Two credits; spring.

Meisnest.

75M. *History*. Special reference to the work of the high school. Required of majors in history who expect to teach. 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; adaptations to part-time, evening and extension classes. A consideration of current methodology as applied to home economics. Standards and operation of specific methods under provision of the Smith-Hughes and George-Reed Acts. A study of related science and related art courses. Evaluation of texts, references, illustrative material, equipment, tests and measurements. Prerequisite, 25 credits of home economics. Three recitations. Three credits each quarter; only two credits counted toward the normal diploma, the other four credits counted in home economics; autumn, spring.

Raitt.

75O. *Human Geography*. A survey of the present day content of the science of geography, together with the method of presenting it in grade school and high school teaching; regional, industrial and commodity geography and geography's relation to the social sciences are considered. Prerequisite, Geog. 1 and five additional credits. Two credits; spring.

Renner.

For teachers' course in journalism, see Jour. 125.

75P. *Latin*. Methods and problems in the teaching of high school Latin. Prerequisite, 20 credits of college Latin. Except by special arrangement, this course must be taken in combination with Latin 107. Two credits; autumn. Stone.

75Q. *Mathematics*. Problems peculiar to the teaching of high school mathematics. Nature and value of mathematics with their pedagogic bearings. Critical review of courses and methods of teaching. Required of mathematics majors who are candidates for the normal diploma. Prerequisite, Math. 109. Three credits (two credits in education, one credit elective); spring. Jerbert.

For teachers' course in music, see Music 116.

75U. *Physical Education for Men*. The elementary and secondary school program. Fundamental principles underlying curricula construction; special aims and objectives; standards for evaluating practice in the field; correlation of physical education with the various other school agencies that affect the physical, moral and social welfare of children. Prerequisite, Phys. Ed. 145. Two credits; winter. Foster.

75V. *Physical Education for Women*. A study of the sociological, biological, and educational foundations of physical education, with reference to objectives and selection of activities, programs, and curriculum in physical education. 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*. Problems and methods in the organization of courses in debate and oratory and in the preparation of students for special contests. Required of those who intend to teach public speaking. Two credits; spring. Orr.

For teachers' course in sociology, see Sociology 164.

75Y. *Spanish*. Methods of teaching Spanish. Practice in the classroom. Prerequisites, Spanish 101, 102, 103, 159. Two credits; autumn. Umphrey.

75Z. *Zoology*. For students preparing to teach zoology in high schools. Prerequisite, 20 credits in zoology. Two credits; winter. Guberlet.

II. ADVANCED COURSES

*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*. Physical, intellectual, emotional, social and moral characteristics of adolescents. The new freedom of youth; the youth movement in foreign countries; new social standards and new demands. Educative activities suited to the period of secondary education, including the basic philosophy of the junior high school, the senior high school, and the junior college. The organization of adolescent education in Europe. Adolescent intelligence. Who should go to high school and college? The last fourth of the course is devoted to character education in adolescence. Five credits; winter. Bolton.

* Not offered in 1931-1932.

107. *Modern Psychology and Education*. Three credits; autumn. Powers.

*109. *Psychology of High School Subjects*.

120. *Educational Sociology*. Representative aspects of the problem of making the school form a whole with the rest of life; a systematic view of the larger social factors and relationships underlying and surrounding the school as an institution. The main emphasis falls upon generalization. Pivotal topics are: The social inheritance; political aspects of public education; the national mosaics of interrelated "solutions" and the ideal of progress; democratic assumptions and transitional practices; informal versus formal education; co-operation of selective factors in American education; localism; nationalism and cosmopolitanism in educational thought,—leading up finally to current problems, such as moral and character education and curriculum materials. Three credits; autumn, winter. Bishop.

131. *School Administration, State and County*. An analysis of modern practice and historical background of the organization, supervision and financial support of public education. Especially planned for superintendents and supervisors, and those interested in school administration. Four credits; winter. Jessup.

132. *School Administration, City*. Organization, supervision and financial support of city and town schools. For the superintendent, principal or supervisor who wishes to become familiar with modern problems and practice in school administration. Four credits; spring. 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. Problems based upon the organization of the school, the teaching staff, the high school population, curriculum making and extra class and intramural activities will be considered. Registration in this course is limited to those who have had experience as elementary principals, high school principals, vice-principals or those who have served at least one year as head of a department, except in special cases in which the instructor's permission has been secured. Three credits; spring. Corbally.

135. *Organization and Administration of Junior High School*. An intensive study of problems relating to organization and supervision such as: buildings, grounds and equipment; selection, preparation and revision of curricula and courses of study; organization of the extra class activities; units of organization; co-ordination with elementary and secondary units; the testing program; evaluation of pupils' achievement; educational and vocational guidance. Two hours of class work each week and one hour of field study. Class is limited to 20 students. 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; spring. Jessup.

145F. *The Health Education Movement*. Its place in the elementary and secondary school program and in the community at large. The part of the school nurse, the physical education, home economics and classroom teachers in this work. Open to students majoring in any subject, who expect to teach in elementary or high schools. Three credits; spring. Gross, Rountree, Soule.

145G. *School Hygiene*. The place and scope of school hygiene; physical factors which affect adjustment of the child in school; the program of health-

*Not offered in 1931-1932.

ful activities; hygiene of instruction, including class schedules and pupil load. 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. Designed for administrative officers of the school as well as health and physical education majors. Three credits; spring. Belshaw.

146. *Extra-Class and Intramural Activities.* Students will do individual work in organizing research projects in the library and in participating in the supervising and directing of the particular activities in which they are interested in the Seattle public schools. 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.* Methods and literature of personal, vocational, and educational guidance in the public schools, advisory systems, child accounting, classification, promotional plans, placement. Class limited to 20 students. Three credits; winter. Corbally.

153. *Elementary School Curriculum.* The construction and organization of the elementary school curriculum. Subjects, time schedules, principles, objectives, activities, classification, adaptation, projects, platoon plan, etc. Four credits; spring. Jessup.

163. *Secondary School Curricula.* The origin and development of secondary school curricula; constructive criticisms of curricula; objectives and curriculum values; pupils and curricula; local conditions and curricula; principles of constructing and administering curricula. Prerequisites, Edu. 60 or 62 and 70. Three credits; spring. Uhl.

164-165. *Technique of Curriculum Making.* An elementary course for students who are interested in the technique of curriculum revision. Class work will be devoted to the discussion of various techniques and attempts made to evaluate them. 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.* A study of educational thought of the past designed to give perspective and meaning to educational practices in method. Intensive reading, discussion and interpretation of principles in Comenius' Great Didactic, Rousseau's Emile, and educational writings of Plato, Vives, Montaigne, Herbart, Loyola, Richter, Pestalozzi, Hoole, etc. Three credits; autumn. Williams.

184. *Comparative Education.* Modern education in foreign countries especially in Germany, France, England, Norway, Sweden, and Canada. Relation between social ideals of nations and their educational systems. Post-war reorganization. Influence upon educational theories and practices in America. Four credits; winter. Jessup.

188. *Philosophy of Education.* The philosophies responsible for the American school system. The fundamental philosophy of education on which the aims and objectives of a democratic society may be developed.

Education in relation to other factors in twentieth century life. Mobilization of thought, social progress, socializing agencies, dynamic and static societies, aims of education, problems of methods, curriculum building, etc. Five credits; spring. Bishop.

191. *Advanced Educational Measurements.* The course deals with the theory of educational measurements, the construction and validation of educational measurements and a detailed study of representative tests from the point of view of construction, reliability, and validity. A practical problem in the field of mental and educational measurements is carried out. Prerequisite, Edu. 90 or its equivalent. Lab. fee, \$3. Three credits; winter. Dvorak.

III. COURSES FOR GRADUATES ONLY

201. *Advanced Educational Psychology.* A critical survey of the most recent literature of educational psychology especially from the experimental side. Students must have as prerequisites courses in general and educational psychology. Three credits; spring. Powers.

209-210. *Seminar in Psychology of High School Subjects.* Consideration of experimental studies in the problems of the learning and teaching processes involved in the subjects of the high school curriculum. Three credits each quarter; winter, spring. Williams.

220-221. *Seminar in Educational Sociology.* Introductory summary of the tendencies and 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. The student will be introduced to contemporaneous and historical discussions setting forth numerous approaches to the problem of selecting defensible education procedures, and to studies illustrating the results of application of such approaches. The basic hypotheses will be critically examined, and each student will undertake enough original work to assure his grasp of the method. Five credits; spring. Bishop.

230. *Seminar in Administration. (Legislation).* A comparative study of school legislation in the various states. Intensive investigations of special topics relating to needed legislation in Washington and other states. Four credits; winter. Jessup.

231. *Seminar in Business Administration.* An intensive study of various methods of raising and distributing school revenues. Special consideration to needs in Washington. Five credits; winter. Cole.

240. *Technique of Objective Supervision.* The construction and application of objective technique for the evaluation of teaching practices. Problems in producing and interpreting stenographic reports, photographic records, slides, and films of teaching procedures, phonographic records of classroom recitations, etc. Three credits; spring. Williams.

243-244. *Supervision of Secondary School Subjects.* The objectives, activities, content, procedure, standards of achievement, and devices for measurement in each of the secondary school subjects will be presented. This course is for principals and superintendents and will summarize for them the principal investigations and writings in all departments of secondary schools. Three credits each quarter; autumn, winter. Uhl.

246, 247. *The Organisation of Supervisory and Administrative Programs.* This course deals with supervisory and administrative problems and with procedures to meet these problems. Each student will conduct practical projects directly connected with school systems. Five credits each quarter; winter, spring. Cole, Jessup.

260-261. *Seminar in Secondary Education.* Research in secondary education. Conferences with the instructor. Two credits each quarter; winter, spring. Draper.

263. *Junior College.* A study of the facts and conditions which have led to the development of the junior college movement with an investigation of the purposes, objectives, curricula, economic and educational advantages of the junior college. Three credits; spring. Dvorak.

270-271. *Problems in Modern Methods.* A seminar for advanced students. A critical evaluation of methods in examinations, grading, supervised study, the project, socialized recitation, problem method, assignment, laboratory procedure, etc. Three credits each quarter; autumn, winter. Williams.

287-288-289. *Seminar in Philosophy of Education.* An analysis, evaluation, and synthesis of the principles, data, and means of education. Required of candidates for the degree of doctor of philosophy. Three credits each quarter; autumn, winter, spring. Uhl and staff.

290. *Educational Statistics.* A thorough course of graduate nature in the statistical treatment and interpretation of educational data. Designed to enable the student to carry on research work involving the numerous quantitative measures for thesis or other advanced work. Required of candidates for the master's and doctor's degrees in education and normally should be one of the first courses completed for these degrees. Fee, \$1.50. Five credits; autumn. Dvorak.

291. *Methods of Educational Research.* Practices and methods in carrying out and writing up research problems. 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.* Original investigation of special problems. Results are usually reported in one of the seminars and when especially meritorious may be published. Special problems directed by members of the department. Credits to be arranged; autumn, winter, spring. Staff.

ELECTRICAL ENGINEERING

Engineering Hall

Professors Magnusson, Loew; Associate Professor Shuck; Assistant Professors Hoard, G. S. Smith, Lindblom, Eastman.

101. *Direct Currents.* Short course in continuous current machinery, for non-electrical students, to be taken in connection with E.E. 102. Prerequisite, Physics 98. 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. Lab. fee, \$4. Two credits; autumn, winter, spring. Eastman, Smith.

103. *Direct Currents.* A short course in direct current machinery, for civil engineering students. Prerequisite, Physics 98. Three credits; winter. Lindblom.

104. *Direct Currents Laboratory*. Direct current machinery, for civil engineering students. Prerequisite, Physics 98. Lab. fee, \$2.00. One credit; winter. 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 generators and motors. To be taken with E.E. 110. Prerequisite, Physics 98. Four credits; autumn, winter. Smith, Lindblom.

110. *Direct Currents Laboratory*. Direct current machinery. Prerequisite, Physics 98. Lab. fee, \$4. To be taken in connection with E.E. 109. Two credits; autumn, winter. Hoard, Lindblom.

111. *Direct Currents*. Continuation of E.E. 109 in direct current machinery. Storage batteries. Regulation and control of direct current systems. To be taken in connection 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. Lab. fee, \$4. 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 without the aid of advanced mathematics. For electricians having at least two years of practical experience with electrical machinery. 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, Eastman.

122. *Alternating Currents Laboratory*. Experimental work on alternating current machinery. To be taken with E.E. 121. Prerequisite, E.E. 102. Lab. fee, \$4. Two credits; autumn, winter, spring. Smith, Lindblom.

123. *Alternating Currents*. A short course in alternating current machinery for civil engineering students. Prerequisite, E.E. 103, 104. Three credits; spring. Shuck.

124. *Alternating Currents Laboratory*. Alternating current machinery for civil engineering students. Prerequisite, E.E. 103, 104. Lab. fee, \$2. One credit; spring. Shuck.

131. *Electric Communications*. Wire and radio, telephone and telegraph. Theory, construction, and operation of electric communication systems. Central telephone station practice. Prerequisite, Physics 98. Two credits; autumn. Eastman.

132. *Telephone Transmission*. Theory of telephone transmission; reflection phenomena; measurements of line constants; design of telephone equipment. Prerequisite, E.E. 161. Lab. fee, \$2. Four credits, winter. Eastman.

**Will be offered if a sufficient number of students elect the course.

****141. Illumination.** Electric lamps; commercial photometry; adaptation of electric lighting to commercial requirements. Junior or senior elective. Prerequisites, E.E. 109, 110. Lab. fee, \$2. Four credits; spring. Shuck.

152. Electrical Machine Design. Complete design of one direct current generator or motor. Prerequisites, E.E. 111, 112. Three credits; winter, spring. Loew, 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; energy storage in magnetic and dielectric fields; vector diagrams and the symbolic methods of analysis; power factor and power measurements; hysteresis and eddy currents; theory of the transformer, singlephase and polyphase 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. Lab. fee, \$4. Four credits; autumn, spring. Smith, Shuck.

163. Alternating Currents. Theory of alternators, rotary converters, synchronous and commutator motors and transmission lines; high tension phenomena; corona; commercial wave forms; unbalanced and inter-linked systems. To be taken with E.E. 164. Prerequisite, E.E. 161. Six credits; autumn, winter. Loew, Shuck.

164. Alternating Currents Laboratory. To be taken with E.E. 163. Prerequisite, E.E. 162. Lab. fee, \$4. Four credits; autumn, winter. Hoard, Smith.

****171. Electric Railways.** Equipment, roadbed, construction and operation. Prerequisite, E.E. 109, 110. Four credits; winter. 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. Radio. Lineal, open and complex oscillations; coupled circuits, resonance; theory and operation of the vacuum tube as a detector, amplifier and oscillator; dynatron characteristics. Prerequisite, E.E. 161, 162. Lab. fee, \$2. Five credits; winter, spring. Eastman.

183. Radio. Spark telegraphy; continuous wave telegraphy; radio telephony; theory of antennae and radiation; amplifier circuits. Prerequisite, E.E. 181. Lab. fee, \$2. Five credits; spring. Eastman.

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.

191. Engineering Equations. Mathematical investigation of electrical phenomena with quantitative solutions of typical engineering problems. Prerequisites, E.E. 161, 162. Three credits; winter, spring. Loew.

****Will be offered if a sufficient number of students elect the course.**

190, 192, 194. *Seminar*. Prerequisites, E.E. 161, 162. Four or five credits; autumn, winter, spring. Magnusson, Loew.

195. *Electric Transients*. Exponential law of simple transients; single and double energy transients; current oscillations and traveling waves; natural period of transmission lines; short circuits transients; surges; corona; lightning phenomena. Prerequisites, E.E. 163, 164. Two credits; autumn, winter. Magnusson.

196. *Electric Transients Laboratory*. To be taken in connection with E.E. 195. Prerequisite, E.E. 164. Lab. fee, \$2. Two credits; autumn, winter. Smith.

198. *Electric Transients Laboratory*. Continuation of E.E. 196. Lab. fee, \$2. Two credits; 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. A, 100, 102 and Speech 103.

ENGINEERING SHOPS

Shop

Associate Professor Schaller; Assistant Sullivan.

53. *Foundry*. Bench and floor molding, use of molding machines, core making, cupola operation, and electric melting. Lab. fee, \$3. One credit; autumn, winter, spring. Sullivan, Schaller.

54. *Forge*. Mechanical and heat treatment of steel; gas and electric welding. Lab. fee, \$2. One credit; autumn, winter, spring. Schaller.

55. *Machine*. Machine shop practice. Lab. fee, \$2. One credit; autumn, winter, spring. Schaller, Sullivan.

104. *Non-Ferrous Metals and Alloys*. Foundry practice and heat treatment of non-ferrous metals and alloys. Lab. fee, \$3. One credit; winter. Schaller.

105. *Advanced Machine Shop Practice*. Prerequisite, Shop 55. Lab. fee, \$2. One credit; autumn. Sullivan.

106. *Advanced Machine*. Advanced machining problems. Jigs and fixtures. Prerequisite, Shop 105. Lab. fee, \$2. One credit; winter. Sullivan.

107. *Shop Planning*. Design and equipment of a representative manufacturing plant. Prerequisite, Shop 106. Lab. fee, \$2. One credit; spring. Schaller.

115. *Shop Management*. Designing of plants both as to location and physical characteristics, as well as a study of their effective operation. Three credits; winter. Schaller.

120. *Factory Cost Analysis*. Analysis of shop practice with a view to determining costs of operation and production. Three credits; autumn and spring. Schaller.

ENGINEERING ENGLISH

For courses in Engineering English, see department of English, Comp. A, 100, 102 and Speech 103.

ENGLISH

Parrington Hall

Professor Griffith (Executive Officer); Literature: Professors Padelford, Benham, Cox, Taylor; Associate Professors Milliman, Harrison, Moore; Assistant Professors Winther, Eby; Instructor Cornu; Lecturer Sperlin; Associates Wagenknecht, Butterworth, Childs, Kahin, Zillman. Public Speaking: Professor Orr; Assistant Professor Rahskopf; Instructors Windesheim, Bird; Associate Pellegrini; Assistants and teaching fellows. Drama: Professor Hughes; Assistant Professors Conway, Burton James, Florence James; Associate Blaisdell. Composition: Associates Lawson, Hall, Walters, Vickner, Kerrigan, Brown, Cederstrom, Nix, Gillette, Atkinson, Okerlund; Assistants and teaching fellows.

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. Comp. 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. 1 and 2 is Comp. 16 and 17 provided that these last two courses are taken concurrently with Literature 64, 65 or 73, 74.

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. This 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. The "year-courses" are taught in small classes to facilitate discussion and to increase contacts between teacher and student. They are grouped as follows:

- Group I. Old and Middle English (150, 151, 152)
Shakespeare (170, 171, 172)
English Literature 1476-1642 (153, 154, 155)
- Group II. Seventeenth Century Literature (167, 168, 169)
Eighteenth Century Literature (144, 145, 146)
- Group III. Early Nineteenth Century Literature (177, 178, 179)
Late Nineteenth Century Literature (174, 175, 176)
American Literature (161, 162, 163)

For the major in literature two of the above courses from two different groups are required and one from each group is recommended. For majors in speech, drama, and minors in literature one year-course is 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 Literature 197, 201, 12 credits in one graduate year-course, and four credits in each of two other subjects so arranged as to supplement the undergraduate training and to correlate with the major graduate year-course. Minors present 12 graduate credits which shall complete the undergraduate major in English and 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 or 100. No credit; autumn, winter, spring. Miss Lawson in charge for all colleges except Engineering, where Miss Hall is 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. Five credits each; autumn, winter, spring.

Miss Lawson in charge.

4-5, 6. *Composition.* For students in fine arts, except music, and in forestry. 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 English 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. 64, 65, or 73, 74. When so studied this course substitutes for Comp. 2. Two credits; winter, spring.

Childs, Walters, Kahin, Zillman.

51, 52, 53. *Advanced Composition.* Composition based upon models from current magazines. May be taken for upper division credit by 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. May be taken for upper division credit by upper division students. Prerequisites, Comp. 1 and 2, or Speech 37, or 40. Two credits; autumn, winter, spring. Wagenknecht.

61, 62, 63. *Verse Writing.* Principles of versification with practice in verse writing. Prerequisite, Comp. 1-2. Two credits; autumn, winter, spring. Hughes.

67, 68, 69. *English Prose Style.* A study of composition to develop effective presentation of material. Current books and magazines are used as models. Upper division credit for upper division students. Prerequisites, Comp. 1 and 2 or equivalent. Two credits; autumn, winter, spring.

Milliman.

100. *Technical Composition.* An intensive course in writing scheduled for sophomores or juniors in the Colleges of Engineering and Mines. An examination taken in the sophomore year tests the ability of the student to recognize and construct clear English sentences and decides his admission to this course. Three credits; autumn, winter, spring. Hall.

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, Composition 100. Three credits; autumn, winter, spring. Hall.

110, 111, 112. *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, spring. Hughes.

156, 167, 168. *Advanced Composition: Narration*. Two 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. Bibliographies, briefs, oral and written arguments are required of each student. May be taken for upper division credit by upper division students. Five credits; autumn and winter. Windesheim.

39. *Advanced Argumentation and Debating*. May be taken for upper division credit by upper division students. Prerequisite, Speech 38. Three credits; spring. Windesheim.

40. *Essentials of Speaking*. This course seeks to remove self-consciousness, to teach a method for effective organization of material, and to establish the power to think creatively before people. Five credits; autumn, winter, spring. Orr in charge.

41. *Advanced Speaking*. A more technical study of the problem of speech delivery than Speech 40. Delivery of speeches of different types before audiences when possible. May be taken for upper division credit by upper division students. Prerequisite, Speech 40. Fee, \$.50. Three credits; autumn, winter, spring. Rahskopf, Bird.

43. *The Speaking Voice*. A study of the vocal mechanism and the establishment of fundamental co-ordinations of mind, voice, and body, which are essential to effective speaking. May be taken for upper division credit by upper division students. Fee, \$.50. Three credits; autumn, winter, spring. Orr, Rahskopf.

47, 48. *Theatre Speech*. To prepare the speech of students for desirable usage in the theatre. Work consists of an analysis of English speech sounds, an investigation of contemporary attitudes toward pronunciation in the English and American theatre, and practice for the immediate application of the principles involved. Prerequisite, Speech 43. Fee, \$.50. Two credits; autumn, winter, spring.

79. *Oral Reading of Literature*. Required of majors and minors in English. May be taken for upper division credit by an upper division student. Three credits; 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. Short original talks are prepared and delivered to develop clear statement, sound argument, and effective presentation. Not open to liberal arts students nor to students who have credit for Speech 40. Three credits; spring.

Windesheim.

138. *Rhetoric of Public Speaking*. The development of an effective oral style based upon the study of modern public speeches. Prerequisite, Speech 40. Three credits; spring.

Rahskopf.

*139. *Forms of Public Address*.

186. *Mind and Speech*. The study of speech as a phase of human behavior; its development; its relation to personality; its instinctive, intellectual and emotional aspects, and its social significance. Three credits; autumn.

Rahskopf.

187. *Advanced Voice Problems*. A study of minor voice and speech defects with special attention given to diagnosis and remedy. A laboratory course. Prerequisite, Speech 43. Fee, \$.50. Three credits; winter.

Orr.

188. *Advanced Problems in Speaking*. Laboratory and research. Prerequisite, Speech 40. Fee, \$.50. 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. Supplemented by assigned readings, reports, and discussions. Three credits; autumn, spring.

Orr, Rahskopf.

Teachers' Course. See Edu. 75X.

COURSES FOR GRADUATES ONLY

214, 215, 216. *Public Speaking*. Fee \$1. Three to five 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. Standard and original plays used as material. Members of class form nucleus for workshop play productions. Prerequisites, Speech 43, 47, 48. Lab. fee, \$1. Two credits; autumn, winter, spring.

Blaisdell.

104, 105, 106. *Elementary Theatre Workshop*. Construction of actual stage settings, properties, costumes, models. Design, make-up, stage lighting. General theatre mechanics. One hour lecture, four hours laboratory. Lab. fee, \$3. Three credits; autumn, winter, spring.

Conway.

111, 112, 113. *Playwriting*. Principles of dramatic composition with experimental creative work. Deserving plays, written in this course, will be produced in the laboratory theatre. The course may be substituted for other courses in the department with the consent of the department. Five credits; autumn, winter, spring.

Hughes.

* Not offered in 1931-1932.

114, 115, 116. *Advanced Theatre Workshop*. Continuation of the elementary course. Students will be given charge of productions in the laboratory theatre. Four hours laboratory. Prerequisites, Drama 104, 105, 106. Fee, \$2. Two credits; autumn, winter, spring. B. W. James.

121, 122, 123. *Advanced Acting and Directing*. A practical course in the arts of acting and directing. Standard plays used as material. Members of the class given first consideration for parts in the major production each quarter. Opportunity given students to direct laboratory plays under supervision. Fee, \$1. Prerequisites, Drama 51, 52, 53. Three credits; autumn, winter, spring. F. B. James.

127, 128, 129. *History of the Theatre*. The origins of theatre art. Evolution of the physical playhouse. Invention and development of stage machinery and scenery. Traditions of acting and costuming. Masks and marionettes. Modern movements in the theatre. 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 and countries are studied and discussed. Three credits; autumn, winter, spring. Hughes.

191, 192, 193. *Major Conference*. Individual conferences to correlate the various fields of drama study, and to solve special problems in the training of each student. 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 Edu. 75G.

COURSES FOR GRADUATES ONLY

210, 211, 212. *Research in Drama*. Individual conference. Permission of instructor necessary for enrollment. Time to be arranged. Three to five 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

57. *Introduction to Poetry*. Designed to develop appreciation and understanding of poetry. Study of the poetic mind and of the material and methods of poetic art. Illustrative reading from poets of all periods. Not open to students who have had English 21, 83, or 84. Three credits; autumn, winter, spring. Cornu, Zillman.

60. *Introduction to Shakespeare*. Detailed study of some of Shakespeare's principal plays. Not open to students who have had 6 hours of English 70, 71 or 72. Five credits; autumn, winter, spring. Wagenknecht, Childs.

64, 65, 66. *Literary Backgrounds*. Survey of English classics emphasizing study of literary forms and the relation of literature to social and political movements. Grade of A or B grants upper division credit to an upper division student for the quarter in which the grade is earned. Required in the freshman year of pre-journalism students. Three credits; autumn, winter, spring. Wagenknecht, Butterworth, Kahin, Zillman.

73, 74. *Introduction to Modern Literature*. Essays on European and American thought of the nineteenth century and after, accompanied by readings in poetry, novel, and drama. Three credits; autumn, winter, spring. Milliman, Harrison, Cornu, Childs, Walters.

90. *Chaucer*. Selections from the *Canterbury Tales*. Not open to students who have had English 131. Upper division credit for upper division students. Three credits; autumn, winter, spring. Kahin.

97, 98, 99. *The Bible as Literature*. The literature of the Old Testament. Open to all. May be taken by upper division students for upper division credit. Two credits; autumn, winter, spring. Wagenknecht.

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, 118, 119. *History of the English Language*. The development of the English language from Early Germanic to the present day presented in three aspects; pronunciation, vocabulary, and syntax. The tradition that produced the "accepted standard" of our speech is studied each quarter. Open to sophomores who intend to major in English. Two 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. Benham.

144, 145, 146. *Eighteenth Century Literature*. The classic period, Johnson and his Age, and eighteenth century romanticism in successive quarters. Three credits; autumn, winter, spring. Cox, Cornu.

*147, 148, 149. *The English Novel*.

150, 151, 152. *Old and Middle English Literature*. Prerequisite, English 90. Three credits; autumn, winter, spring. Butterworth.

153, 154, 155. *English Literature: 1476-1642*. The Renaissance, Spenser and his contemporaries, and non-Shakespearean Elizabethan drama in successive quarters. Three credits; autumn, winter, spring. Taylor.

161, 162, 163. *American Literature*. From the beginnings to 1870. Three credits; autumn, winter, spring. Harrison, Moore, Eby.

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, 169. *Seventeenth Century Literature*. A study of Milton and his contemporaries. Three credits; autumn, winter, spring. Benham, Cornu.

170, 171, 172. *Shakespeare*. Studies of the plays and poems of Shakespeare. Prerequisite, English 60, 70, 71, or 72. Three credits; autumn, winter, spring. Benham, Taylor, Moore, Eby.

174, 175, 176. *Late Nineteenth Century Literature*. Poetry, novels, essay, and drama. Three credits; autumn, winter, spring. Winther.

177, 178, 179. *Early Nineteenth Century Literature*. Poetry, novels, essay, and drama. Three credits; autumn, winter, spring. Eby, Cornu.

180, 181, 182. *Old English Language*. The reading of Anglo-Saxon classics in the original and the study of grammatical forms. Three credits; autumn, winter, spring. Butterworth.

*183, 184, 185. *General Literature*.

* Not offered in 1931-1932.

191, 192, 193. *Major Conference*. Individual conferences to correlate studies in the different literary periods and for guidance in individual reading. Each student meets his instructor once a week in conference. Three credits; autumn, winter, spring. Staff.

*194. *Major Thesis*.

197. *Major English*. Correlation of English studies. Required of majors in literature and elective to majors in other divisions of English. Survey of classics to aid in preparation for the senior examination. Three credits; autumn. Griffith.

Teachers' Courses. See Edu. 75H, 75I, 75J.

For courses in foreign literature taught in English, see Department of General Literature.

COURSES FOR GRADUATES ONLY

201, 202*, 203*. *Introduction to Graduate Study*. Methodology and bibliography of the English language and literature. Normally the first graduate course in English. Two credits, autumn. Benham.

205, 206. *Chaucer*. The works of Chaucer and the problems of Chaucerian scholarship. Three to five credits; autumn, winter, spring. Griffith.

*207. *English Literature from Chaucer to Spenser*.

*208, 209, 210. *English Drama to 1642*.

211, 212, 213. *Seminar in Sixteenth Century Literature: Spenser*. Four or five credits; autumn, winter, spring. Padelford.

217, 218, 219. *Seminar in Shakespeare*. Problems in the study of Shakespeare and his contemporaries. Three to five credits; autumn, winter, spring. Taylor.

221, 222, 223. *Seminar in Seventeenth Century Literature*. Studies in the renaissance and the reformation, the literature of the Puritan and the Cavalier, the Jacobean and restoration drama, and the beginnings of English science. Three to five credits; autumn, winter, spring. Benham.

224, 225, 226. *American Literature*. Three to five credits; autumn, winter, spring. Moore.

227, 228, 229. *Seminar in American Literature*. For advanced graduate students in American Literature. Three to five credits; autumn, winter, spring. Harrison, Eby.

230, 231, 232. *Old English*. Anglo-Saxon grammar; readings in Old English prose and poetry; Beowulf. Three credits; autumn, winter, spring. Butterworth.

233, 234. *Advanced Old English*. Prerequisites, English 230, 231, 232 or equivalent. Three to five credits; winter. Butterworth.

237. *Gothic*. Prerequisites, 230, 231, 232 or equivalent. Three to five credits; autumn. Butterworth.

238, 239, 240. *Seminar in Early Nineteenth Century Literature*. Three to five credits; autumn, winter, spring. Cox.

*241, 242, 243. *Victorian Literature*.

* Not offered in 1931-1932.

244, 245, 246. *Eighteenth Century Literature*. Three to five credits; autumn, 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.

FISHERIES

Fisheries Hall

Professors Thompson, Guberlet; Instructor Schultz.

101, 102, 103. *Systematic Ichthyology*. Classification and anatomy of fishes. Prerequisite, Zool. 127. Two laboratory periods and three lectures a week. Lab. fee, \$4. Five credits; autumn, winter, spring.

Schultz and Assistant.

105, 106, 107. *Commercial Aquatic Invertebrates*. Classification and life history of commercially important invertebrates, especially molluscs and crustacea. Prerequisites, Zool. 125, 126. Lab. fee, \$4. Five credits; autumn, winter, spring.

125, 126, 127. *Early Life History of Fishes*. Spawning, egg production, and larval history of fresh water and marine fishes; artificial propagation. Prerequisites, Zool. 5, Fish. 101, 102, 103. Lab. fee, \$4. Five credits; autumn, winter, spring.

154. *Diseases of Fish*. Nature and causes of disease in fish. Prerequisites, Zool. 1-2, Fish. 101, 102. Three lectures and two laboratory periods. Lab. fee, \$4. Five credits; autumn. Guberlet.

157, 158. *Later Life History of Fishes*. Growth, maturity, and migrations. Prerequisites, Fish. 101, 102, 103. Lab. fee, \$4. Five credits; autumn, winter. Schultz.

159. *Conservation*. Theory of overfishing and statistical methods of observation. Prerequisites, Fish. 126, 158. Lab. fee, \$4. 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. Lab. fee, \$1 per credit. Two to five credits; any quarter. Thompson, Schultz.

195, 196, 197. *Seminar*. Reports and discussions of current fisheries literature. Prerequisite, 15 credits in fisheries. Two credits; any quarter. Staff.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Research*. Prerequisite, 25 credits in fisheries or its equivalent in zoology. Lab. fee, \$1 per credit. Credits to be arranged; any quarter. Thompson.

205, 206, 207. *Graduate Seminar*. Required of all graduate students. Two credits; any quarter. Thompson.

FORESTRY AND LUMBERING

Anderson Hall

Professors Winkenwerder, Kirkland, Grondal; Assistant Professors Alexander, Mills; Instructor Harrar.

1a, 1b. *Dendrology*. Nomenclature, classification and identification of forest vegetation. Two recitations and one laboratory period per week. Lab. fee, \$.50 a quarter. Three credits; autumn, winter. 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.

3. *Introduction to Forestry*. Continuation of For. 2 but need not be preceded by it. Three credits; winter. Winkenwerder.

4. *Forest Protection*. Classification of injuries, factors influencing the spread and severity of forest fires, slash disposal, methods of detection and suppression. Required of freshmen. Three credits; winter, spring. Winkenwerder.

6. *General Forestry*. For students not majoring in forestry. Offered primarily for business administration students who desire to prepare for work in lumber marketing. Others admitted until section is full. Three credits; winter. Winkenwerder.

10-11. *Wood Technology*. Structure, identification and uses of commercial woods, physical properties, elementary microscopy. Prerequisites, For. 1a, 1b, 1c. One lecture and two laboratory periods. Lab. fee, \$1 each quarter. Three credits; autumn, winter. Alexander.

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. Required of sophomores. Five credits; winter. Mills.

40. *Silviculture*. Field studies of forest types and silvicultural problems. Three credits; spring. Alexander.

60. *Forest Mensuration*. The theory of scaling, construction of volume tables, taper tables, and determining the content of stands. Prerequisite, Math. 56. Lab. fee, \$1. Two credits; autumn. Alexander.

61. *Forest Mensuration*. Methods of measuring growth and yield of stands. Prerequisite, For. 60. Lab. fee, \$1. Two credits; winter. Alexander.

62. *Forest Mensuration*. Field practice in scaling, volume table construction, cruising, mapping, and growth and yield studies. Prerequisite, C.E. 55, and For. 61. Fee, \$4. Seven credits; spring. Alexander.

*103. *Advanced Wood Technology*.

* Not offered in 1931-1932.

104. *Timber Physics*. General mechanics, stresses, tests, theory of flexure, moisture and strength; mechanical properties of wood. Required of juniors. Prerequisite, Math. 51, 52, 56, For. 10-11, Physics 1 and 2. Lab. fee, \$2. Five credits; spring. Alexander.

105. *Wood Preservation*. Nature of decay of timber; methods and economics of preservation. Prerequisite, For. 10-11. Three credits; autumn. 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*. Protection against insect and fungus attacks, animals, avalanches, land slides, floods, shifting sands. Prerequisite, For. 4. Three credits; autumn. Winkenwerder.

119. *Forest Administration*. Objects, principles and methods of administering private and public forests and forest industries. Four credits; spring. Kirkland.

121. *Foundations of Silviculture*. Three credits; autumn. Alexander.

122. *Type and Site Classification*. Intermediate cuttings; methods of cutting for natural regeneration; methods of artificial reproduction. Three credits; winter. Alexander.

123. *Forest Nursery Practice*. Preparation of nursery seed beds; vegetative propagation; transplanting. One lecture, one laboratory. Lab. fee, \$1. Two credits; spring. Kirkland.

*126. *Forest Economics*.

140. *Construction*. Machinery and methods of construction; plans, specifications and cost estimates for roads, logging railroads, wooden bridges, land clearing, Forest Service improvement work and logging construction. Two lectures, one three-hour laboratory period. Lab. fee, \$2. Three credits; winter. 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. Three credits; spring. Kirkland.

152. *Forest Organization*. Principles of forest organization and regulation of the cut; advantages of foresight and planning in forest operations for a term of years; sustained yield management of forests; forest working plans. Required of students in senior or graduate year. Prerequisite, For. 151. Three credits; winter. Kirkland.

157. *General Forest Products*. Timbers of commerce, their origin, purposes and uses; identification of wood; domestic and industrial utilization. Primarily for business administration students and open to students in other departments. (Not open to students majoring in forestry). Three credits; winter. Grondal.

158. *Forest Utilization*. Pulp and paper manufacture, tannic acid, naval stores and other secondary forest products; lumber and its economic uses

* Not offered in 1931-1932.

in construction. Required of juniors and graduates. Prerequisites, For. 10-11, and 10 hours of chemistry. Five credits; winter. Grondal.

160, 161, 162. *Forest Investigation*. The object of this course is to enable students to prepare themselves for work in certain special fields which the faculty of the College of Forestry is prepared to give, but for which there is not sufficient demand to warrant the organization of regular classes. Opportunities are offered for special work 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. Lab. fee arranged.

*170. *Advanced Milling and Marketing*.

171. *Forest Geography*. Advanced dendrology. Silvicultural regions, their relation to regional industrial development and general problems of lumbering and management. Three credits; spring. Winkenwerder.

183. *Milling*. The sawmill; yard arrangements; practical operation, practical problems at local sawmills. For seniors and graduates. Prerequisites, M.E. 82, For. 15, 104, 158. Five credits; autumn. Grondal.

184. *Manufacturing Problems*. Technical trade requirements, routine of sawmill practice; relation of waste to marketing; lumber grades and their uses. Exports. Required of all students specializing in milling and marketing. Prerequisites, For. 183, B.A. 57, B.A. 65. Five credits; spring. Grondal.

187. *Field Practice in Forest Engineering*. Field projects conducted in logging operations. Topographic mapping, timber cruising, railroad location, time studies of logging operations and job analysis. Approximately five to six weeks devoted to project work in one logging operation; two to four weeks to field studies on other representative operations in Oregon, Washington, and British Columbia; one to two weeks to compilation and completion of data and maps. Prerequisites, For. 15, 62, 104, 122, C.E. 57, M.E. 82. Lab. fee, \$3. Sixteen credits; autumn. Mills.

188. *Theory and Practice of Kiln Drying*. Theory of seasoning; design, construction and practical operation of dry kilns. Special seasoning problems. Prerequisites, For. 10-11, 158. Lab. fee, \$3. Five credits; winter. Grondal.

189. *Wood Pulp*. Design of waste conversion plants; wood pulp manufacture. Prerequisites, For. 10-11, 158. Lab. fee, \$3. Five credits; spring. Grondal.

191. *Logging Engineering*. Logging machinery equipment and logging methods; lectures and demonstrations at plants manufacturing logging machinery. Prerequisites, For. 187, M.E. 82 and M.E. 70. Five credits; winter. Mills.

192. *Forest Engineering*. Planning of logging operations. Application of various phases of engineering to problems of logging and forest management. Field trips to nearby logging operations to study application of class room work. Three lectures, five three-hour laboratory periods per week. Eight credits; spring. Mills.

194. *Seminar*. Review and advanced work in dendrology, mensuration, silviculture and lumbering. Prerequisites, For. 15, 62, 151. Three credits; winter. Kirkland, Harrar.

196. *Forest Management*. Lectures, assigned readings and extensive field work on large size tracts of timber. Required of all students majoring

* Not offered in 1931-1932.

in forest management. Prerequisites, For. 119, 152, 194. Lab. fee, \$3. Sixteen credits; autumn. Kirkland.

197. *Forest Management Plans*. Full development and use of data obtained on autumn field trip; precise valuation of forest area by small units; forecasting future value changes; selection of stands for immediate cutting; organizing the forest property to conserve earning and productive power. Prerequisite, For. 196. Two lectures, two laboratories. Lab. fee, \$3. Four credits; winter. Kirkland.

199. *Timber Valuation*. Detailed comparative valuation of large tract of timber based on time studies of various methods of operation. Designed for logging engineering majors and for forest management majors who wish to get the logging engineering aspects of forest management. There will be class discussions and reports, as well as individual conferences. Five credits; winter. Mills.

COURSES FOR GRADUATES ONLY

202. *Thesis*. Autumn, winter, or spring; three to six credits per quarter; total requirement nine credits. Instructors assigned according to nature of work. Staff.

208. *Graduate Seminar*. Reviews, assigned readings, reports, and discussions on current periodical literature and the more recent Forest Service and state publications. Three credits a quarter; winter. Staff.

213, 214, 215. *Research*. Ample opportunity is offered for advanced research in any of the special phases of forestry. Instructors assigned according to nature of work. Lab. fee, arranged according to materials required. Credits to be arranged; any quarter. Staff.

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. Kirkland.

223. *Advanced Forest Management*. About one week of field work on a tract of 50,000 to 100,000 acres. Formation of a working plan for regulation of the yield and organization of all forest work on the area, with estimates of outlay and income. The basic field data are supplied. Eight credits; spring. Kirkland.

GENERAL ENGINEERING

Education Hall

Associate Professors Wilcox, Warner; Assistant Professors Van Horn, Farquharson; Instructors Chittenden, Smith, Rowlands, Moritz, Brown, Jacobsen, Tymstra, Jensen, Lamson.

1. *Engineering Drawing*. Lettering; engineering sketching, fundamental principles of working drawings. Must be preceded or accompanied by solid geometry. Lab. fee, \$1. 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.

3. *Drafting Problems*. Detailed analysis and solution of engineering problems dealing with space and dimensions by the use of drafting room methods. Descriptive geometry. Prerequisites, G.E. 1 and G.E. 2. Three credits; autumn, winter, spring. Warner.

7. *Engineering Drawing*. A special short course for forestry. Lettering, use of instruments, orthographic projection, working drawings and tracings. Lab. fee, \$1. Three credits; spring. 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, Farquharson.

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. Lab. fee, \$2. Three credits; autumn, winter, spring. Van Horn.

ENGINEERING ENGLISH

For courses in Engineering English, see department of English, Comp. A, 100, 102 and Speech 103.

GENERAL LITERATURE

Denny Hall

Committee in charge—*Dean Thomson; Professor Benham; Associate Professors Stone, deVries.*

Advisers—*Associate Professors deVries, Stone.*

A major in General Literature requires a reading knowledge of two foreign languages, General Literature 101, 191, 192, 193, and sufficient other courses to make a total of from 36-60 credits.

In preparation for this major and for General Literature 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. English 64, 65, 66, 80, 98.

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 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 to correlate studies and for guidance in individual reading. Each student is expected to meet his instructor once a week in conference. Three credits; autumn, winter, spring.

Stone, deVries.

GEOLOGY AND GEOGRAPHY

Johnson Hall

Professors Landes, Weaver; Associate Professors Renner, Goodspeed, Martin; Assistant Professors Seeman, Earle; Research Assistant Professor Fuller.

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, 100, 112, 113, 212 and Geography 11.

(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.

1. *Introduction to Earth Science.* A broad treatment of the earth sciences involving a study of the materials of the earth, morphology of the landscape, dynamic processes in earth building, organic evolution and the fossil record of the rocks; the development of geology, geography and meteorology as sciences together with their social values. Lectures, laboratory and field trips. Lab. fee, \$1. Five credits; autumn and winter. Landes.

5. *Rocks and Minerals.* A study of the origin, occurrence and structural relations of many rock types; sight recognition of the more common rocks and minerals; relative importance and values from an economic standpoint. Lectures and laboratory work, with occasional half-day field trips. Prerequisite, at least a high school course in chemistry. Not open to students who have had Geol. 1a. Lab. fee, \$2. Five credits; autumn. Goodspeed.

6. *Elements of Physiography.* Geological processes and agencies affecting the earth's surface. Genetic interpretation of the topographic map, constructional and destructional landforms, relation of topography to structure. Lectures and laboratory work. Lab. fee, \$2. 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. Lab. fee, \$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. Lab. fee, \$2. 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. Lab. fee, \$2. Five credits; winter. Renner.

107. *Principles of Historical Geology*. Same as Geol. 7, but with additional work and readings. Prerequisite, junior standing. Lab. fee, \$2. Five credits; spring. Weaver.

*112. *Physiography of the Eastern United States*.

113. *Physiography of the Western United States*. The physical regions of the western half of the United States considered from the standpoint of the present topography as a result of structure and paleo-physiography. Prerequisite, five credits of geology or a course in physical geography. Lab. fee, \$2. Five credits; spring. Renner.

121. *Mineralogy*. The elements of crystallography and blowpipe analysis, followed by descriptive and determinative mineralogy. Prerequisites, Geology 5 and at least a high school course in chemistry. Lab. fee, \$2. 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, 121 (except for U.D. Chem. students). Lab. fee, \$2. Three or five credits; autumn. Goodspeed.

124. *Petrography*. Systematic study, both macroscopically and in thin sections with the petrographic microscope, of igneous, sedimentary and metamorphic rocks. Prerequisite, Geol. 123. Lab. fee, \$2. 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. Lab. fee, \$2. 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. Lab. fee, \$2 to \$5. 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. Prerequisite, Geol. 7 or Zool. 1 and 2. Lab. fee, \$2. Five credits; winter. Weaver.

131. *Stratigraphy*. Studies concerning the origin, deposition and methods of correlation of sedimentary strata. Prerequisites, Geol. 7, 122, and 125. Three credits; winter. Weaver.

132. *Invertebrate Paleontology*. A study of the more important type

* Not offered in 1931-1932.

fossils of each geologic period. Prerequisite, Geol. 130. Lab. fee, \$2. 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. A consideration of the problems of faunal migration. Prerequisites, Geol. 130 and 132. Five credits; spring. Weaver.

135. *Study of Ammonites*. For advanced students in paleontology or zoology. Two credits; winter. Weaver.

190. *Undergraduate Thesis*. Preparation of a thesis in geology or any of its several branches. Completed thesis must be submitted at least one month before graduation. Prerequisite, senior standing. Total of five hours 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, or Geol. 1, 6.

For students in business administration, Business Administration 7, Geography 102 and 104 or 105 are suggested; for students in Oriental Studies, Geography 1 and 103.

1. *Elements of Geography*. A study of the world from a regional standpoint, as a basis for the understanding of the adjustments which man makes to his environment. All the branches of human ecology, viz. economic geography, social geography, political and historical geography are touched upon.

This course is planned as a science requirement for Liberal Arts students and also as a basic course in a broad, cultural education.

Teachers of geography will find it of especial benefit in providing them

with the latest content and philosophy of their subject. Lab. fee, \$1. Five credits; autumn, winter, spring. Seeman.

Economic Geography. (See Bus. Adm. 7.) Renner, Seeman, Earle.

11. *Weather and Climate.* Weather elements and controls, causes and effects of atmospheric conditions; principles and methods of weather forecasting and use of instruments. A brief study of the earth's climates and their controls; a consideration of the chief systems of climatic classification which have been proposed. Lab. fee, \$1. Five credits; winter. Renner.

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. Lab. fee, \$1. Five credits; autumn, winter, spring. Seeman.

102. *Economic Geography of North America.* A regional study of the continent, explaining the regional specialization in industry and geographic division of labor; analysis of the environmental factors which have occasioned the growth and character of the various sections of the United States; waterpower, conservation, growth of cities, foreign policies and internal problems. Prerequisite, Geog. 1 or Bus. Adm. 7 or Hist. 8 and 9. Not open to students who have had Geog. 100. Five credits; autumn. Renner.

103. *Political and Economic Geography of Asia.* A study of the various countries of Asia and their division into geographic regions. A review of the factors of historical and social geography which have occasioned the present political and economic status of Asia. Prerequisites, Geog. 1 or 11 or Bus. Adm. 7, or one course in Oriental studies. Lab. fee, \$1. Five credits; winter. Earle.

104. *Industrial and Political Geography of Europe.* A study of the geographic factors which have occasioned the growth of industrial Europe; Europe as an economic competitor of America; the geographic background for the rise of the Great Powers of Europe. Prerequisites, Geog. 1 or 11 or Bus. Adm. 7. Lab. fee, \$1. Five credits; spring. Earle.

105. *Economic Geography of Latin America.* A study of Latin America as an economic market for the United States; American Imperialism in the Caribbean, the environmental bases of Pan Americanism and Pan Latinism; the Monroe Doctrine and its significance. Prerequisite, Geog. 1, or Bus. Adm. 7 or Hist. 154. Five credits; spring. Seeman.

106. *Geography of Africa and Australasia.* A study in regional geography dealing with the native ecology and European imperialism, expansion and commerce. Prerequisite, Geog. 1 or Bus. Adm. 7. Five credits; winter. Earle.

111. *Principles of Meteorology.* Same as Geog. 11 but with additional work and readings. Not open to those who have had Geog. 11. Prerequisite, junior standing. Lab. fee, \$1. Five credits; winter. Renner.

*114. *Oceanography.*

175. *Problems in Political Geography.* A reading course in the geographic backgrounds of politics and history; regular conferences and reports, intensive investigation of a selected topic. Instructor's permission necessary for registration. Open to qualified sophomores. Hours to be arranged. Five credits; autumn, winter, spring. Renner and Seeman.

190. *Undergraduate Thesis.* Preparation of a thesis in geography or climatology. Completed thesis must be submitted at least one month before

* Not offered in 1931-1932.

graduation. Hours to be arranged. Five credits; autumn, winter, spring.
Staff.

COURSES FOR GRADUATES ONLY

200. *Seminar in Geography*. Credit and hours to be arranged; each
quarter. Earle.

211. *Research in Climatology*. Credit and hours to be arranged; each
quarter. Renner.

250. *Philosophy and Literature of Geography*. Credit and hours to be
arranged; each quarter. Renner.

Teachers' Course in Geography. See Edu. 750. Renner.

GERMANIC LANGUAGES AND LITERATURE

Denny Hall

*Associate Professor Eckelman; Assistant Professor Groth; Lecturer Meis-
nest; Associates Wesner, Terzieff, Ankele.*

Requirements for a departmental major: at least 35 hours in the depart-
ment chosen from courses other than German 1, 2, 3. At least 50 per cent of
the hours in the major must be in upper division courses. For the depart-
mental or academic major or minor wishing a departmental recommendation
to teach, see Education, major and minor requirements.

Students of mathematics and the applied sciences should take German
1, 2, 3, *with honors*, 60, and the Upper Division Scientific courses for spec-
ialized reading. Students of history and the social sciences should elect
German 5 and 6, or eight credits second year work, and the third-quarter
Recent Writers course, where special vocabulary studies will be provided.

Credit is allowed for any quarter in any course except 1-2. All courses
are conducted in German unless otherwise specified.

1-2. *First Year*. Stage pronunciation, grammar, reading of easy prose
and verse, conversation. Five credits a quarter; autumn, winter, spring.

Meisnest, Groth, Wesner, Terzieff, Ankele, Eckelman.

3. *First Year Reading*. Reading of modern prose, conversation, com-
position, continuation of grammar. Prerequisite, Ger. 1-2 or one year in high
school. Five credits a quarter; autumn, winter, spring.

Meisnest, Groth, Wesner, Terzieff, Ankele.

5. *Second Year Reading*. Pronunciation, vocabulary building, reading
of modern prose, simple conversation. Prerequisite, Ger. 3 or two years high
school. Three credits; autumn, winter, spring.

Meisnest, Groth, Ankele, Terzieff.

6. *Second Year Rapid Reading*. Modern prose, vocabulary building,
simple conversation. Prerequisites, Ger. 5 or 10; Ger. 3 Grade A, or on con-
sent of instructor. Three credits; winter.

Terzieff.

7. *Second Year Rapid Reading*. Modern prose, vocabulary building,
simple conversation. Prerequisite, Ger. 5 or 6 or 10 or 11. Three credits;
spring.

Terzieff.

10, 11, 12. *Second Year Review Course*. Modern prose, grammar re-
view with emphasis on syntax, simple conversation. Prerequisite as for Ger.
5. Two credits; autumn, winter; three credits, spring.

Groth, Wesner, Terzieff, Ankele.

60, 61. *Lower Division Scientific German*. Introduction to chemical German. Class work. Suitable outside reading. Vocabulary building. Prerequisite, Ger. 5, or 10 or 11; Ger. 3 Grade A or B, or combinations with consent of instructor. Three credits; autumn, winter; two credits, spring.

Wesner.

70. *German Literature in Translation*. A survey of the German novel during the last half of the nineteenth century. Its reflection of the main currents of thought. Lectures, discussion, special reports. No knowledge of German required. Three credits; spring.

Eckelman.

100. *Schiller*. Life and dramatic works. *Jungfrau von Orleans*. Other selections. Discussion, oral and written reports. Prerequisite, three years high school or eight credits second year German. Three credits; winter.

Ankele.

101, 102, 103*. *Recent Writers*. Prose and dramatic literature adapted to rapid reading and representative of German middle class and industrial life. Discussion, oral and written reports. Prerequisite, three years high school or eight credits second year German in college. Three credits; autumn, spring.

Wesner, Groth.

106. *German Literature in Translation*. Goethe, the poet. The lyric, prose and dramatic works of Goethe's formative period inclusive of *Faust*, Part I. Lectures, discussion, special reports. No knowledge of German required. Three credits; autumn.

Eckelman.

107. *German Literature in Translation*. The contemporary short story, novel and *Bildungsroman*. Helene Boehlau, L. Thoma and others; J. Wasserman, Thomas Mann. No knowledge of German required. Two credits; spring.

Groth.

108. *German Literature in Translation*. A survey of the nineteenth century drama up to the present. The forerunners of Ibsen in Germany; Hauptmann; the post-war expressionism. Lectures, discussion, special reports. Two credits; winter.

Eckelman.

109*, 110, 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.

Meisnest.

117, 112, 113. *Upper Division Scientific German*. Scientific essays, monographs, technical periodicals. Each student does private reading in his own field under guidance of the instructor and major professor. Conferences. Prerequisites, Ger. 5 and 10, 60 or 61, or three years in high school. Two or three credits a quarter; autumn, winter, spring.

Eckelman, Groth, Meisnest.

*118, 119, 120. *German Prose Reading*.

121. *Phonetics*. General differences between German and English pronunciation; organs of speech; systematic study of the nature, production and classification of the German speech sounds; stage pronunciation; phonetic transcription; drill and practice in oral expression and reading. Important for teachers of German. Prerequisite, Ger. 3. Two credits; autumn, spring.

Meisnest.

*130-131-132. *German Institutions*.

133*, 134, 135*. *Modern Novels*. From the best prose literature after 1880. Storm's *Schimmelreiter*, Frenssen, Otto Ernst and others. Literary topics, oral and written reports. Prerequisite, Ger. 100 or equivalent. For majors, minors and advanced students. Three credits; autumn.

Eckelman.

* Not offered in 1931-1932.

136*, 137, 138*. *Modern Drama*. Contemporaries of Ibsen in Germany. Wilbrandt's *Meister von Palmyra*. Hauptmann, Sudermann and others. Literary topics, oral and written work. Prerequisite, Ger. 100 or equivalent. Three credits; winter. Eckelman.

*139, 140. *Studies in German Literature*.

*141. *History of German Literature*.

*142. *Lyrics and Ballads*.

150, 151*. *Lessing*. Life and dramatic works. Minna von Barnhelm, Emilia Galotti, Nathan der Weise. Assigned topics. Prerequisite, Ger. 100 or equivalent. Three credits; spring. Ankele.

*153. *Goethe's Dramatic Works*.

183, 184, 185. *Nineteenth Century Literature*. Seminar. The drama and novel to 1880. Kleist, Grillparzer, Hebbel, Ludwig, Raabe, Kellar, 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*.

253, 254, 255. *Middle High German*. An introduction to the language and literature of the German 12th century. Seminar for advanced students. Three credits a quarter; six credits only with the consent of the instructor; autumn, winter, spring. Eckelman.

*256, 257, 258. *Gothic*.

*259, 260, 261. *Old Saxon*.

Teachers' Course in German. See Edu. 75L.

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.

* Not offered in 1931-1932.

HISTORY

Denny Hall

Professors Meany, Richardson, McMahon, Barnes; Associate Professor Lucas; Lecturer Beardsley; Assistant Professors Creer, Dahlin, Quainton; Instructor Dobie.

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 fifty 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 such as political and social science, modern foreign languages and literature, English and American literature, and philosophy. Selection should be made, under advice, among the following courses and sequences in correlated fields:

I. *Political and Social Sciences.* Anthropology, one of the following: 51, 110, 185; Economics and Business Administration 1, 2, 103, 127; or 1, 2, 61, 162; or 1, 2, 160, 168 171; or 7, 143, 144, 145, 173; or 60, 161. Geography 1 or 102; Oriental Studies 116 (correlating with ancient and medieval history courses); Political Science 1, 51, 123; or 1, 51, 111; or 1, 51, 112; or 1, 156; or 1, 120; or Law 122; Sociology 1 or 150; Zoology 16.

II. *Language and Literatures.* English 64, 65, 66, or 153, 154, 155, to be taken in correlation with History 5-6; English 161, 162, 163, or 164, 165, 166, to be taken in correlation with American history courses; English 167, English 144; or English 141, 142, 143; General Literature 101.

Survey courses in foreign literatures (given in English language unless otherwise specified); General Romanic 34, 35, 36 (or 134, 135, 136); French 118, 119, 120; Italian 184; Spanish 118, 119, 120 (in Spanish). German 106, 107, 108. Scandinavian, 109, 110, 111.

Medieval Latin is desirable for those who intend to study history for advanced professional purposes and to this end Latin 216 or 285, 286 is recommended. In general, a reading knowledge of the basic language in the chosen field is indispensable for satisfactory graduate work.

III. *Philosophy.* Philosophy 1, or 2, or 101, 102, 103.

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 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 recommendations 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. (See Education bulletin, page 12).

B. Satisfaction of requirements for an academic major or minor.

The former must have a minimum of 48 credits, including course 1-2, with electives on the advice of the head of the department. The latter must have a minimum of 20 credits, including course 1-2, with electives on the advice of the head of the department.

I. FOR ACADEMIC MAJOR

1. *Required*: 1-2, Medieval and Modern, ten credits; 57-58-59, United States, or 143, 144, 145, United States, nine 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.

NOTE: 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 the performance of special work under the direction of the instructor. Since majors in history are required to select at least fifty 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.

2. *Preferential Group* of courses from which 10 additional credits must be taken. Of these five and not more are to be selected from the European courses below, and the remainder from the American group: course 149, National Development, five credits, or 163-164-165, Northwest History, six credits; course 114, Renaissance, five credits, or 115, Reformation, five credits, or 129, French Revolution, five credits, or 130, Europe 1814-1870, five credits, or 131, Europe since 1870, five credits, or 182, England in the 19th Century, five credits.

II. ACADEMIC MINOR

1. *Required*. 1-2. Medieval and Modern European History (or its equivalent), 10 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, 10 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, Quainton, 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. Five credits a quarter. By special work under direction

of the instructor upper division students may receive upper division credit.
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 boundary 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; autumn. Creer.

103. *The Roman Republic.* Three credits; spring. Creer.

*104. *The Roman Empire from Augustus to Justinian.*

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; winter. Creer.

113. *Medieval Civilization.* Five credits; spring. Lucas.

114. *The Renaissance.* Five credits; autumn. Lucas.

115. *The Reformation.* Five credits; winter. Lucas.

117. *France from the Reformation to the French Revolution.* Prerequisite, Hist. 1-2; five credits; autumn. Quainton.

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.

* Not offered in 1931-1932.

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.
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 Edu. 75M.

COURSES FOR GRADUATES ONLY

201-202-203. *Methods of Historical Research and Criticism*. Required of all graduate students majoring in history. Two credits; autumn, winter, spring. Creer.

207-208-209. *Problems and Sources of Greek and Roman History*. Two to three credits a quarter; autumn, winter, spring. Creer.

211-212-213. *Research in European History (1300-1600)*. Two to 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*. Two credits a quarter; autumn, winter, spring. McMahon.

227-228-229. *Seminar in State History*. Two credits a quarter; autumn, winter, spring. Meany.

231-232-233. *Seminar in European History (1600-1815)*. Two credits a quarter; autumn, winter, spring. Quainton.

HOME ECONOMICS

Home Economics Hall

Professor Raitt; Associate Professors Denny, Rowntree; Assistant Professors Bliss, Dresslar, Payne, Rivers; Instructors Terrell, O'Keefe.

(For curricula in Home Economics see College of Science Bulletin.)

Food Selection and Preparation. Courses 9, 115, 116, 117, 120, 121, 200.

Nutrition. Courses *103, 104, 105-106, 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. Lab. fee, \$6. Six credits; autumn, winter, spring. Bliss, O'Keefe.

25-26. *Textiles*. Economic and esthetic values in all types of standard and new fabrics for clothing and house furnishing. Identification of fibers; relation of raw material, construction, and finish to quality and cost of fabrics. Historic development of the textile industry. Lab. fee, \$2. Three credits a quarter; autumn, winter, spring. Denny.

45, 46. *Household Management*. Organization, operation, equipment and care. The first quarter will include studies of housing standards and laws; practice in applying the principles of scientific management to household operations; personal and household accounts and budgets. The second quarter will include a study of 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. Lab. fee, \$2. Three credits a quarter; autumn, winter, spring. O'Keefe.

47. *Home Furnishing*. Structural art principles applied to treatment of interiors and the choice and arrangement of house furnishings. Cost estimates adapted to various income levels. Prerequisite, P.S.D. 9. Saturday excursions. Lab. fee, \$3. Three credits; winter, spring. Denny.

Health Education. (See P.E. 8-9) Food selection in relation to nutritive requirements of various age groups. Consideration of simple corrective diets. The aim of the course is to develop critical judgment and the ability to evaluate current literature in regard to diet. Lab. fee, \$1. Two lectures a week for one quarter. Two credits; autumn, winter, spring.

Rivers, O'Keefe, Bliss.

101, 102. *Needlecraft*. Interpretation of the needle arts of various nationalities. A study of historic laces. Application of authentic and original designs. Prerequisites, H.E. 112, and P.S.D. 9. Lab. fee, \$2. Two credits a quarter; autumn, winter. Payne.

*103. *Nutrition for Graduate Nurses*.

104. *Nutrition*. Open to men only. Nutritive requirements and food values; relative economy and efficiency of foods. Of special interest to majors in physical education, military training, mining, and forestry. Two credits; spring. Rowntree.

105-106. *Nutrition*. (For student nurses.) Principles of human nutrition. Prerequisites, H.E. 9, Chem. 1-2, Physiol. 7. Lab. fee, \$6. Five credits a quarter; autumn, winter. Bliss.

107-108. *Nutrition*. Fundamental principles of human nutrition; chemistry of digestion and metabolism; study of modern dietary standards and the relative economy and efficiency of foods. For dietitians and teachers of home economics. 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. Lab. fee, \$6. Five credits a quarter; autumn, winter. Rowntree.

109. *Household Budgets*. Survey of cost of living studies. Factors that control expenditures and distribution at different income levels. Study of household accounting. Five credits; winter. O'Keefe.

112, 113, 114. *Costume Design and Construction*. Principles of art applied to costume design. Clothing budgets. Free-hand designing. Economic problems in textile and clothing industries. Prerequisites, P.S.D. 9. Lab. fee, \$2 or \$3 for 112. Three or five credits, depending upon diagnostic tests; autumn. Lab. fee, \$2 for 113, 114. Three credits a quarter; winter, spring. Payne.

115, 116, 117. *Food Preparation*. A study of food production, composition and marketing. Relation of the fundamental sciences to the processes and techniques of food preparation. Evaluation of time and labor saving methods. Place and significance of the economic and esthetic aspects of food. Quantitative experimental work in food preparation. An introduction to research

* Not offered in 1931-1932.

methods. Prerequisites, Chem. 1-2, Physiol. 7. Lab. fee, \$2 or \$6 for 115. Three or five credits, depending upon diagnostic tests. Lab. fee, \$4 for 116. Three credits. Lab. fee, \$6 for 117. Five credits. Autumn, winter, spring.

Dresslar.

119. *Textiles*. Identification, analysis and use of textiles with special reference to fabrics of art value in interior decoration. Comparative costs. Standard tests. Open to fine arts majors only. Lab. fee, \$3. Five credits; autumn.

Denny.

120. *Food: Advanced Food Preparation*. Finer processes in technique with emphasis upon esthetic values. Contribution of various countries to the art of food preparation. Food customs and their significance. A survey of the literature of the subject. Prerequisite, 116. Lab. fee, \$6. Three credits; autumn.

Dresslar.

121. *Institution Food Preparation*. For dietitians and other administrators in community feeding. A study of large quantity manipulation, cost accounting, standardization of formulas, and menu planning. Prerequisite, H.E. 116. Lab. fee, \$3. Five credits; winter, spring.

Terrell.

122. *Institution Marketing*. An analysis of 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; winter, spring.

Terrell.

125. *Institution Equipment*. The course deals with construction, operation and care of equipment and the placing with reference to routing of work, departmental relations and economy of installation. One hour conference and eight hours laboratory a week. Prerequisites, H.E. 116, 106 or 108, 124. Three credits; winter, spring.

Terrell.

133. *History of Costume*. Development of fashion as an expression of the esthetic, social and economic life of the times. Creative designing. Of special interest to students in dramatics and commercial costume design. Prerequisites, H.E. 112, 113, 114, P.S.D. 169. Lab. fee, \$3. Five credits; spring.

Payne.

144-145. *Household Economics*. Economics of the household, personal and household accounts and budgets. Organization of the household. Prerequisites, Econ. 1, Soc. 1, junior standing. Two credits a quarter; winter, spring.

Raitt.

148. *Home Management House*. Seniors live in home management house in groups of three for three weeks. They are responsible for organization of the group, financial management, records, housekeeping, food preparation and service, and hospitality. Two credits; autumn, winter, spring.

Rivers.

160, 161. *Advanced Costume Design and Construction*. Emphasis upon creative designing of costumes and accessories. Economic aspects of the clothing industry. The social significance of style control. Prerequisite; H.E. 114, P.S.D. 9 and 169. Lab. fee, \$3. Three credits a quarter; winter, spring.

Payne.

188. *Advanced Textiles*. Analysis of fabrics. Methods, technique and evaluation of testing. Textile legislation and standardization. Prerequisite, H.E. 25-26, Econ. 1. Lab. fee, \$3. Two credits; autumn. Denny.

190. *Child Nutrition and Care*. Problems of maternity and infancy; standards for normal growth and development; prevention of defects and formation of health habits; evaluation of methods of improving health of children. Work centers around University child nutrition service. Open to advanced undergraduates and graduates. Lab. fee, \$2. Five credits; winter, spring. Rowntree.

191. *Diet Therapy*. Varying dietetic requirements under different pathological conditions. For students who expect to qualify as professional dietitians. Open to advanced undergraduates and graduates. Prerequisite, H.E. 108. Lab. fee, \$3. Four credits; spring. Rowntree.

198. *Historic Textiles*. Study of tapestries, brocades, damasks, embroideries, laces and prints from ancient times to the present, including modern fabrics of art value. 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 Edu. 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. Lab. fee, \$4. 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, nutritive values of foods, animal feeding, or dietary studies. Lab. fee, \$2 per credit. Credits to be arranged; autumn, winter, spring. Rowntree.

207, 208, 209. *Research in Textiles*. Prerequisites, H.E. 26, Econ. 1. Lab. fee, \$1 per credit. Credits to be arranged; autumn, winter, spring. Denny.

211, 212. *Research in Costume Design*. Prerequisites, H.E. 114, 133. Credit to be arranged; autumn, winter, spring. Payne.

214, 215. *Readings in Nutrition*. Assigned readings and reports dealing with recent contributions to nutrition with special emphasis given to training for independent work. 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 Accounts and Budgets*. Prerequisites, H.E. 144-145, Econ. 1. Credit to be arranged; autumn. Raitt.

JOURNALISM

Commerce Hall

Professor McKenzie; Associate Professor R. W. Jones; Laboratory Director Kennedy; Assistant Professor Christian; Instructor Wintermute.

1. *Journalism as a Profession.* Survey of newspaper making in its various phases. Required in the freshman year of pre-journalism majors. Lab. fee, \$1. One credit; autumn. McKenzie.

2. *The Newspaper and Society.* Surveying—who read the newspapers, why, and what do they read; do newspapers influence public opinion; criticisms of newspapers, and replies; ethics of advertising; journalism of the future. Required in the freshman year of pre-journalism majors. Prerequisite, Journ. 1, except for non-journalism majors. Lab fee, \$1; 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. Lab. fee, \$2. Three credits; spring. Kennedy.

51. *News Writing.* Practice in news writing; study of news sources. Not open to freshmen. Required in the sophomore year of pre-journalism majors. Lab. fee, \$2. Five credits; autumn, winter, spring. Christian, Wintermute, Bermann.

61. *The Smaller Newspaper.* Editorial, advertising, and circulation problems peculiar to the community weekly. Not open to freshmen. Lab. fee, \$1. Three credits; spring. Jones.

90, 91, 92. *Current Events.* Current state, national and world movements. Lab. fee, \$1 a quarter. One credit a quarter; autumn, winter, spring. Jones, Wintermute.

101. *Reporting.* Study of all types of stories covered by a reporter. Required of majors in journalism. Prerequisite, Jour. 51. Lab. fee, \$2. Five credits; autumn, winter, spring. Christian.

120. *Copy Reading.* Required of majors in journalism. Prerequisite, Jour. 101. Lab. fee, \$2. Three credits; autumn, winter, spring. Christian, Wintermute.

125. *Principles of High School Journalism.* Discussion of high school and junior college publications; relationship of local press to high school press organizations. Prerequisite, Jour. 101. Lab. fee, \$2. Five credits; spring. Stewart.

130. *Fundamentals of Advertising.* The theory of advertising display, attention devices, media. Lab. fee, \$2. Five credits; autumn. Jones.

131. *Display Advertising.* Layouts and copy for publication advertising; copy writing exercises. Prerequisite, Jour. 130. Lab. fee, \$2. Five credits; winter, spring. Jones.

133. *Advertising Typography.* Type families; application of type; advertising type units; type problems. Prerequisite, Jour. 3. Lab. fee, \$2. Five credits; autumn. Kennedy.

135. *Publicity.* General publicity methods. Lab. fee, \$1. Prerequisite, Jour. 51. Two credits; winter. Christian.

136. *Comparative Journalism.* Prerequisite, Jour. 51. Lab. fee, \$2. Three credits; winter. Christian.

138. *History of American Journalism*. Prerequisite, Jour. 51, for journalism majors only. Lab. fee, \$2. Three credits; autumn. Jones.

140. *Problems of Publishing*. Simplified accounting for newspaper plants; business office management. Required of majors in journalism. Prerequisite, Jour. 3. Lab. fee, \$2. Five credits; winter. Kennedy.

142. *Specialized Reporting and Advanced News Writing*. Literary and dramatic criticism; the sports page; financial, marine and business reporting; political reporting; foreign correspondence. Required of seniors in journalism. Cannot be taken before the fourth year except by special permission. Prerequisite, Jour. 101. Lab. fee, \$2. Three credits; spring. Christian and Staff.

145. *Law of the Press*. Prerequisite, Jour. 51 for journalism majors only. Lab. fee, \$1. Three credits; winter. Jones.

150. *Editorial Writing*. Prerequisite Jour. 101. Lab. fee, \$2. Three credits; spring. Jones.

171-172. *Magazine and Feature Writing*. Practice in writing special newspaper and magazine articles; study of current magazines, trade journals and newspaper supplements. Articles are graded according to their probable marketability. Lab. fee, \$4 a quarter. Three credits a quarter; autumn, winter. Jones.

173, 174-175. *Short Story Writing*. Critical appreciation of the short story; practical work in analyzing current short stories and in the writing of short stories. Lab. fee, \$4 a quarter. Five credits a quarter; autumn, winter, spring. McKenzie.

195, 196, 197. *Daily Newspaper Practice*. A laboratory course dealing primarily with the editorial problems connected with daily newspapers. The course will emphasize some of the editorial problems connected with the publication of the University of Washington Daily. Registration restricted to 15 students who must have upper division standing. Lab. fee, \$4 a quarter. Registration by special permission of the dean of the School of Journalism only. A limited number of additional students may register for this course, without credit, by permission of the instructor. One to three credits; autumn, winter, spring.

199. *Problems of Journalism*. This course deals with the editorial and business sides of daily and weekly newspapers; merchandising and promotion methods; changes in periodical, daily and weekly publications since 1900; involves considerable 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. Advanced students only. Two credits; spring. McKenzie.

225, 226, 227. *Advanced Short Story*. Prerequisite, Jour. 175. Writing and criticism of a minimum of three magazine short stories a quarter; 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. Lab. fee, \$2 a quarter. 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

Professors Shepherd, Lantz, Goodner, Bissett, Ayer, O'Bryan, Nottlemann, Mechem; Associate Professor Nielson; Assistant Professors Cheadle, Richards; Lecturer Beardsley.

FIRST YEAR

All first year subjects are required

†100. *Introduction to Law.* Shepherd's Syllabus and Selected Materials. Place of law in society; content, classification, and determination of rules and principles of law; historical development of English courts and procedure; American judicial system, federal and state. Three credits a quarter; autumn, winter. Nielson.

†101. *Contracts.* Williston's Cases. Mutual assent; consideration; beneficiaries; assignments; conditions express and implied; measure of damages in contract actions; impossibility; illegality; discharge of contracts. Four credits, autumn; three credits, winter and spring. Shepherd.

†102. *Torts.* Bohlen's Cases, 3rd ed. Intentional interference; privilege to interfere; legal cause; negligent interference; unintended non-negligent interference; deceit; defamation; privilege to publish defamation; malicious prosecution; right to privacy; interference with advantageous relations; damages for wrongful interference. Three credits a quarter; autumn, winter, spring. Richards.

103. *Personal Property.* Bigelow's Cases on Personal Property. Distinction between real and personal property; acquisition of title; gift; bailment; lien; pledge; fixtures; emblements. Three credits; autumn. Cheadle.

†104. *Real Property.* Bigelow, Introduction to Real Property; and Aigler, Cases on Titles. Tenure, estates, seisin, future and incorporeal interests, joint ownership, disseisin, uses and trusts; adverse possession, prescription, accretion; mode of conveyance; execution and delivery of deeds; description of property; creation of easements; estates created; covenants for title; estoppel; priority, notice and record. Three credits a quarter; winter, spring. Mechem.

†105. *Criminal Law and Procedure.* Derby's Cases on Criminal Law, supplemented by the statutes and decisions of the State of Washington. Classification of crimes; the criminal act; mental element of crimes; criminal responsibility; defenses; parties to crime; crimes against the person; crimes against property; crimes against habitation; crimes against government; sumptuary laws. Constitutional rights of accused; criminal procedure; jurisdiction of crimes; arrest; preliminary examination; grand jury; indictment and information; pleas; trial; due process of law; verdict; motions in arrest and for new trial; sentence and appeal. Three credits, winter; four credits, spring. O'Bryan.

SECOND AND THIRD YEARS

†110. *Sales.* Woodward's Cases on Sales, 2nd ed. Subject matter of sale; executory and executed sale; bills of lading and *jus disponendi*; stoppage *in transitu*; fraud; factors' acts; warranty; remedies; statute of frauds; Uniform Sales Act; Washington cases and statutes. Three credits a quarter; autumn, winter. Ayer.

† No examination for credit until completion of the entire course.

111. *Wills*. Costigan's Cases, 2nd ed. History; testamentary capacity; wills distinguished from other dispositions of property; kinds of wills and testaments; execution of; revocation; republication and revival; planning and drafting of. Four credits, autumn. Richards.

112. *Agency*. Wambaugh's Cases, 2nd ed. Who can act, what can be done, and appointment; power and responsibility of agent; parties to writings; undisclosed principal; duties of principal and agent to other; termination; ratification; notice. Five credits; spring. Ayer.

113. *Persons*. Woodruff's Cases on Persons and Domestic Relations. 3rd ed. Marriage; rights of husband and wife to property, earnings, services, etc. of the other; married women's contracts, conveyances and suits between husband and wife; conveyances and devises; liability of married women for torts and crimes; divorce and separation; infant's contracts and conveyances, torts and crimes. Three credits; spring. Lantz.

†114. *Equity*. Cook's Cases on Equity. General nature of equity; powers of courts of equity; relation to common law; injunction against torts; nuisance; trespass; waste; easements; protection of personality; protection of public and social interests; specific performance of contracts; mutuality; statute of frauds; vendor and vendee; defenses to specific performance; reformation and rescission for mistake; defenses. Three credits a quarter; autumn, winter, spring. Nottelmann.

†115. *Evidence*. Hinton's Cases on Evidence. The court and jury; presumptions and burden of proof; judicial notice; admission and exclusion of evidence. Witnesses: competency; privileges; examination. Hearsay: exceptions to the hearsay rule; former testimony; dying declarations; admissions and confessions; statements against interest; regular entries; official entries and certificates; reputation; statements of relationship; spontaneous statements. Opinions and conclusions from lay and expert witnesses. Circumstantial evidence: character; conduct; miscellaneous facts; physical objects. Preferred evidence; attesting witnesses; original documents. Extrinsic evidence to contradict, vary, explain, or apply written instruments. Three credits a quarter; autumn, winter, spring. Nielson.

†116. *Negotiable Instruments*. Britton's Cases on Bills and Notes. Negotiability; form requisite; acceptance, delivery, consideration, negotiation, transfer, holder in due course; liability of parties, maker and acceptor, drawer and indorser, transferor; discharge. Three credits a quarter; autumn, winter. Lantz.

117. *Legal Ethics*. Costigan's Cases. History and organization of legal profession in England and in the United States; lawyer's qualifications; admission and discipline; ethical duties to courts; ethics of legal employment in general; solicitation of legal business; ethical duties in criminal cases, in civil cases; pecuniary relations of lawyers and clients; canons of professional ethics. Two credits; autumn. Goodner.

118. *Conflicts*. Lorenzen's Cases on Conflict of Laws. A study of principles for the ascertainment of the proper law governing contracts, torts, marriage, parent and child, divorce, voluntary transfer of property, inheritance of property; powers of executors, administrators and receivers, and the effect of judgments. 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

† No examination for credit until completion of the entire course.

immunities of citizens; operation of 14th amendment in securing civil rights; due process and equal protection of law; procedure, protective and regulatory power (police power). Four credits; winter. 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; spring. Cheadle.

121. *Administrative Law*. Freund's Cases and Selected Materials. 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. Shepherd.

122. *International Law*. Hudson's Cases. 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. (May receive political science credit.) Three credits a quarter; autumn, winter. Martin.

†123. *Private Corporations*. Richards' Cases on Private Corporations, 2nd ed. Legal conception of a corporation; organization; corporations *de jure* and *de facto*; subscriptions to stock; corporate powers; *ultra vires*; directors; rights and liabilities of stockholders: voting and voting trusts, dividends, pre-emptive rights, inspection of books; watered stock; "no par" stock; powers of majority stockholders; stockholders' suits; promotion and underwriting; creditors; merger, consolidation, and reorganization; procedure in organization, reorganization and issues of security; Uniform Corporation Act; Uniform Stock Transfer Act; Washington cases and statutes. Three credits a quarter; winter, spring. Nielson.

124. *Community Property*. Bissett's Cases on Community Property, and selected materials. 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. Prerequisites, Law 103, 104 and 132. Three credits; winter. Mechem.

125. *Trade Regulations*. Oliphant's Cases. Historical introduction; contracts not to compete; competitive practices; combinations. Three credits; spring. Cheadle.

126. *Trusts*. Costigan's Cases on Trusts. Distinction between trusts and other relationships; nature and requisites of trusts; charitable trusts; remedies of beneficiary and creditors; transfer of trust property; duties, powers and liabilities of trustee; priorities; resulting and constructive trusts; termination of trusts. Five credits; autumn. Nottelmann.

127. *Code Pleading*. Hinton's Cases, 2nd ed. Splitting and consolidation of demands; form of action; special proceedings; real party in interest; joinder of parties; complaint; facts constituting cause of action; demurrers; answer; general and specific denials; new matter; several defenses; reply; new assignment; departure. Four credits; 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; autumn. Beardsley.

129. *Briefmaking*. Preparation of briefs on points of law for argument

† No examination for credit until completion of the entire course.

of motions or demurrers, trial briefs, and briefs on appeal. Two credits; winter. 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; spring. Beardsley.

131. *Quasi-Contracts*. Casebook and description of course to be announced later. Three credits; winter. Cheadle.

132. *Rights in Land*. Bigelow's Cases on Rights in Land, and Aigler's Cases on Titles. Rights of possession of land with respect to air, water, and land; creation, nature and extent of profits, easements, and licenses; covenants and other agreements affecting use of land. Prerequisite, Law 104. Four credits; autumn. Mecham.

133. *Public Utilities and Carriers*. Smith and Dowling, Cases on Public Utilities. Duties of carriers as to transportation and delivery; liability at common law and under legislative acts; limitation of liability; connecting service; nature and obligation of public callings; powers and principle of government regulation; duties of service; measure of liability; adequacy and reasonableness of service; rate regulation and control. Three credits a quarter; winter, spring. Nottelmann.

134. *Partnership*. Gilmore's Cases. What constitutes a partnership; creation of a partnership; nature and characteristics of a partnership; nature, extent and duration of partnership liability; powers of a partner; rights and duties of partners *inter se*; remedies of partners *inter se*; rights and remedies of creditors; termination of partnership; limited partnership. Four credits; autumn. O'Bryan.

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. Creation of estates for years, from year to year, and at will; tenancy at sufferance; waste; nature, suspension and apportionment of rents; surrender of leases; statutory remedies. Prerequisite, Law 104. Three credits; spring. Mecham.

136. *Insurance*. Vance's Cases on Insurance. Marine, fire, and life insurance; insurable interest, concealment, representations, warranties, waiver and estoppel, subrogation, powers of agents, assignees and beneficiaries, construction of the policy. Three credits; winter. Lantz.

137. *Water Rights*. Bingham's Cases on Water Rights. Riparian rights and liberties; rights by appropriation and use; relative validity of titles to riparian and non-riparian rights and liberties of use; extinguishment of riparian rights; theory and practice under modern water codes; administrative and judicial powers of water commissioners and boards; rights of diffused and underground waters; interstate streams; federal control of water power; federal and state powers of control; important Washington decisions on conflicts of rights of riparian owner and appropriator. Three credits; autumn. O'Bryan.

138. *Future Interests*. Kales' Cases on Future Interests. Classification of future interests; rule against perpetuities; rule in Shelly's case; construction of limitations; conditions, restraints on alienation; powers. Five credits; autumn. Mecham.

139. *Bankruptcy*. Holbrook and Aigler's Cases, 2nd ed. Jurisdiction; prerequisites to adjudication; in voluntary proceedings; in involuntary proceedings; preferences; assignments for benefit of creditors; appointment of

a receiver; admission in writing; administration; receiver; provable claims; the trustee; writing; exemptions; compositions; discharge. Four credits; winter. Richards.

140. *Mining Law*. Costigan's Cases on Mining Law. Preliminary definitions; who may and who may not locate mining claims; discovery of lode and placer claims; location of lode and placer claims; location of tunnel sites and blind veins in tunnels; annual labor; abandonment and forfeiture; resumption of work; subsurface rights; applications for patents; adverse claims and protests. Three credits; winter. O'Bryan.

141. *Admiralty*. Sayre's Cases on Admiralty. Territorial extent and subject matter of admiralty jurisdiction; law applicable to maritime workers; maritime liens; salvage; general average; limited liability; contracts of affreightment and charter parties; the Harter Act; sovereign immunity; admiralty procedure. Four credits; autumn. Lantz.

‡142. *Practice and Procedure I*. Trial to the court, without a jury. Upon statement of fact furnished, students assigned to the case draw, serve and file process and pleadings. When an issue of fact is made, case is tried and determined upon testimony of witnesses produced by respective parties. When determined, findings of fact, conclusions of law and judgment or decree are drawn by attorneys for the prevailing party. The course covers both law and equity cases under code procedure. Credit will be based upon general efficiency shown in the pleadings, and conduct of the trial. Three credits; autumn. Goodner.

‡143. *Practice and Procedure II*. Trial to the court and jury. In addition to the general procedure outlined in the statement of Law 142, special attention will be given to the selection of the jury, including challenges, both for cause and peremptory. Course will cover as wide a range of civil actions as time will permit and two or more criminal prosecutions. Credit will be based upon general efficiency and intelligent effort, rather than upon the verdict of the jury. Three credits; winter. Goodner.

‡144. *Practice and Procedure III*. This course includes the drawing and probating of wills, and in cases of intestacy, securing the appointment of an administrator, under Washington law. Matters of guardianship and adoption are also included. Credit will be based upon general efficiency and promptness in conduct and closing of the estate. Three credits; spring. Goodner.

‡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. Four credits, autumn; three credits, winter, spring. Ayer.

146. *Taxation*. Rottschaefer's Cases. Power to tax; purposes for which taxes may be levied; distribution of tax burdens; exemptions; taxation of persons and property; inheritance and estate taxes; income taxes; franchise and excise taxes; taxpayer's remedies. Four credits; autumn. Cheadle.

*147. *Municipal Corporations*. Tooke's Cases.

199. *Problems 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. Shepherd.

*Not offered in 1931-1932.

‡ Two hours additional work may be required in order to get the prescribed credits.

† No examination for credit until completion of the entire course.

Note: An average of fourteen 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.

LIBERAL ARTS

Education Hall

Professor Cory.

1. *Introduction to Modern Thought.* Especially for lower division students, but open to all, and designed to help students to get their intellectual bearings. Required reading and lectures on the new theories of matter; the making of earth; the origin and nature of life; mind and behavior; utilitarian, ethical and aesthetic values. 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.* Lectures on the nature of beauty and its relations to usefulness, goodness, and truth. Demonstrations and discussions of the techniques and provinces of dancing, music, architecture, sculpture, painting, poetry and drama. 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

Professors Henry, Smith; Assistant Professors Worden, Alfonso; Instructor Andrews; Associate Putnam.

The following courses are open only to students registered in the Library School.

151, 152, 153. *Books and their Authors.* A course for pre-library students in which a rapid survey is made of the literature of the principal nations of the world, to familiarize the student with authors, titles, literary movements, etc. Based on study of secondary materials rather than study of the literature itself. Required of all pre-library students; not open to any others. Five credits; autumn, winter, spring. Worden.

170. *Introduction to Children's Work.* A basic course; children's reading interests, principles of book selection, administration of a children's room, and its relation to the rest of the library; also methods of work with children. Three credits; autumn. Andrews.

171. *Library Economy.* Study of library routine and mechanical devices. Two credits; autumn. Worden, Putnam.

175, 184, 191. *Cataloging, Classification, Subject Headings.* Lectures, recitations and laboratory. Four credits each; autumn and spring. Three credits; winter. Alfonso.

177, 185. *Reference.* This course aims to give a working knowledge of important types of reference books. Lectures and problems cover books and methods. Three credits a quarter; autumn and winter. Smith, Alfonso.

178. *History of Books and Libraries.* Lectures, readings and reports. Two credits; autumn. Henry.

179, 188, 196. *Book Selection.* To cultivate taste and good judgment in evaluation of books through a study of the principles of book selection, annotation and book reviewing. Two credits; autumn, winter; two to four credits; spring. Worden.

180. *Story Telling*. Selection and adaptation of stories, planning story hour programs, and practice in telling stories to children. 189, 183, 181, 190, 199 required if this course is elected. One credit; winter, spring. (Consult dean on electives.) Andrews.

181, 199. *Advanced Children's Work*. Organization of a children's department, practical problems of book buying, and other problems of administration. One credit each; winter, spring. (Consult dean on electives.)

182. *School Work*. Administration of school libraries. 189, 183, 181, 190, 199 required if this course is elected. One credit; winter, spring. (Consult dean on electives.) Andrews.

183, 190. *Selection of Books for Children*. Reading and evaluating books for children; history of the development of children's books and present tendencies in their production. Two credits; winter and spring.

Andrews.

186. *Practice*. Each student is required to do four weeks (42 hours per week) of practice work under expert supervision. The practice is given in neighboring Northwest libraries. Five credits; winter. Worden.

187. *Library Organization and Extension*. Legalization and organization of a general library system for city, county or state, as the unit of organization. Organization of various types of libraries with varying degrees of equipment. Two credits; winter. Henry.

193. *Government Documents*. Acquisition, care and reference use of federal, state, municipal and foreign publications. Practical problems dealing with document catalogs, indexes, and checklists. Two credits; spring.

Alfonso.

194. *Bibliography, Subject and Trade*. Preparation of bibliographic lists; lectures on sources and methods of work. Problems cover arrangement and form of entry. Three credits; spring. Smith, Putnam.

197. *Library Administration and Library Literature*. Lectures, readings and discussions on library legislation, local taxation, library budget, and all means of realizing the educational and social functions of the library. Reading and class discussion of literature of libraries and librarianship. Two credits; spring. Henry, Putnam.

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*.

*204, 205, 206. *Administration of Children's Libraries*.

*207, 208, 209. *Story Telling*.

*210, 211, 212. *School Work*.

*213, 214, 215. *Field Work*.

* Not offered in 1931-1932.

MATHEMATICS

Philosophy Hall

Professors Moritz, Winger, Carpenter; Associate Professors Gavett, Ballantine; Assistant Professors Neikirk, McFarlan, Mullemeister, Cramlet, Jerbert, Jacobsen.

Suggested courses of study will be found in the College of Science bulletin.

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.

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, Science, Education, Fisheries, Law, and Pharmacy. 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 high school algebra. Five credits; winter.

6. *Analytic Geometry.* Especially for students in the Colleges of Liberal Arts and Science. Prerequisites, Math. 1, 2 and 4. Five credits; spring.

11. *Theory of Investments.* Primarily for commerce students. Interest and annuities; annuities, amortization, capitalization and depreciation, sinking funds, etc. Prerequisite, one year algebra, one year geometry. Five credits; autumn, winter, spring.

12. *Mathematics of Finance and Insurance.* Application of mathematical principles to quantitative problems in finance and insurance. Prerequisite, Math. 11. Five credits; spring.

13. *Elements of Statistical Method.* Fundamental methods of statistical investigation and interpretation, with applications to problems in social, natural, economic and business fields. Emphasis will be given to critical examination of data, defining of statistical units, properties and appropriate uses of the more common averages and various methods and co-efficients of comparison. Application of various calculating instruments demonstrated. Prerequisite, one year algebra, one year plane geometry. Fee, \$1. Five credits; each quarter. Gavett.

51. *Trigonometry.* Primarily for engineering, mines and architecture students. Prerequisites, one and one-half years algebra and one year plane geometry. Four credits; autumn, winter, spring.

52. *College Algebra*. Primarily for engineering, mines and architecture students. Prerequisite, Math. 51. Four credits; autumn, winter, spring.

53. *Analytic Geometry*. Primarily for engineering, mines and architecture students. Prerequisite, Math. 52. Four credits; each quarter.

54, 55, 56. *Mathematics for Architects*. Advanced numerical and graphical methods and solution of plane triangles by trigonometric methods. Prerequisite, one and one-half years algebra, one year plane geometry. Three credits a quarter; autumn, winter, spring.

61, 62, 63. *Calculus*. Primarily 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. Prerequisites, 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. Classification of quadric surfaces. Prerequisites, Math. 2 and 6 or 53. Two credits; spring. Moritz.

107, 108, 109. *Calculus*. Elements of 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*. A study of skew correlation, curve fitting, the normal probability curve, the series of Bernoulli, Lexis, and Poisson. Other topics suggested by the interests and preparation of the class. Some knowledge of the calculus is indispensable. Prerequisite, Math. 13. Three credits; spring. Gavett.

114, 115. *Ordinary and Partial Differential Equations*. With applications to problems in physics, chemistry, astronomy and engineering. Prerequisite, Math. 109 or 63. Three credits; autumn; four credits, winter. Ballantine, Jerbert, Winger.

116. *Advanced Calculus*. Definite integrals and gamma functions, line integrals and Green's theorem, elements of vector analysis, Fourier's series, introduction to the calculus of variations, and applications. Prerequisites, Math. 114, 115. Five credits; spring. Carpenter.

*117, 118, 119. *Projective Geometry*.

121-122-123. *Finite Collineative Groups*. Groups of linear transformations in the binary and ternary domains with applications to geometry. The structure of the principal groups, together with their invariant configurations and invariant curves. Prerequisite, Math. 117. Two credits; autumn, winter, spring. Winger.

131. *Selected Topics in Mathematics*. A course in directed reading for prospective high school teachers. Particular emphasis will be placed upon historical and recreational aspects of mathematics. Prerequisite, Math. 109. Three credits; spring. Jerbert.

*161, 162, 163. *Analytical Mechanics*.

* Not offered in 1931-1932.

164, 165, 166. *Mathematics of Physics and Chemistry*. For students of science, engineering and aeronautics, aiming to give the student sufficient mathematics to enable him to read the easier scientific papers in the current literature. It presupposes a thorough grasp of elementary physics and mathematics through the calculus. Math. 114 should be taken before or concurrently. Three credits a quarter; autumn, winter, spring. Neikirk.

Teachers' Course in Mathematics. See Edu. 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*. Two credits; autumn, winter, spring. Carpenter.

*204, 205, 206. *Modern Algebra*.

207, 208. *Analysis Situs*. Three credits; autumn, winter. Ballantine.

209. *Finite Differences*. Three credits; spring. Ballantine.

*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*.

*235, 236, 237. *Metric Differential Geometry*.

241, 242, 243. *Functions of Complex Variables*. Two credits; autumn, winter, spring. Jerbert.

251, 252, 253. *Mathematical Journal and Research Club*. (No credit.)

MECHANICAL ENGINEERING

Engineering Hall

Professors Eastwood, Wilson, Winslow; Associate Professor McIntyre; Assistant Professors McMinn, Edmonds.

70. *Elementary Heat Engineering*. General course arranged for students not taking M.E. 82. Three credits; winter. Edmonds.

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, or spring.

Eastwood, McMinn, Edmonds, Winslow.

* Not offered in 1931-1932.

83. *Steam Engineering Laboratory*. Calibrations of thermometer, gages and indicator springs; tests of the simple steam engine; one complete engine and boiler test with report. Preceded or accompanied by M.E. 82. Lab. fee, \$2. Three credits; autumn, winter, spring. Wilson, McIntyre.

107. *Heating and Ventilation*. An abridged course for students in the department of architecture. 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.

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. Prerequisite, M.E. 114, M.E. 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, winter. Winslow.

140. *Time Study and Job Analysis*. Job standardizing in modern industry. Personnel requirements and training. Analyzing job. Computing, checking, summarizing, explaining, 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. Lab. fee, \$2. Three credits a quarter; autumn, winter, spring. Wilson.

167. *Engineering Materials*. Properties of various materials used in engineering construction, including iron, steel, reinforced concrete and timber. Recitation and laboratory. Prerequisite, C.E. 132. Lab. fee, \$2. Three credits; autumn, winter, spring. Winslow, 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, with 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. 83, 123. 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.

*Not offered in 1931-1932.

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

211-212-213. *Research*. Autumn, winter, spring. Three credits a quarter. Eastwood

ENGINEERING ENGLISH

For courses in Engineering English, see department of English, Comp. A, 100, 102 and Speech 103.

METALLURGY

Mines Laboratory

See Mining, Metallurgy and Ceramics.

MILITARY SCIENCE AND TACTICS

The Armory

Colonel H. T. Matthews, Major Fraser, Major deRohan, Captain Milner, Captain Crim, Captain Priest, Captain Cooper, Captain Wiltamuth, Lieut. Luce, Lieut. Young, Warrant Officer Moller, Master Sergeant Lang, Staff Sergeants Compton, Bailey; Sergeants Collins, Hogwood; Privates First Class Freeman, Whitchurch, Roberts.

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 thirty (\$30) dollars. 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 Commandant may direct, and will become the personal property of the student.

At the close of each academic year of satisfactory military training in the basic course, the student's accounts with the department will be audited, and he will be entitled to a refund from the University of not to exceed \$7.50 per year, or a total of \$15 for the two years of his basic training, less any charges against the student for lost property that may have been entrusted to him and not otherwise accounted for. To obtain this refund, the student

must adjust his accounts at the end of each academic year and claim the refund within one year thereafter.

Upon 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 the Commandant.

Each student registering in the department of military science will be charged a laboratory fee of 25 cents per quarter.

FIRST YEAR

1-2-3. *Basic Infantry*. National Defense Act; military courtesy; military hygiene and first aid; physical drill; rifle marksmanship, scouting and patrolling; ceremonies; drill and command. Three hours a week. Fee, \$.25. Two credits a quarter; autumn, winter, spring.

4-5-6. *Basic Coast Artillery*. Drill and command; physical training; National Defense Act; military courtesy and discipline; military hygiene and first aid; rifle marksmanship and gallery firing; cordage and mechanical maneuvers; powders and projectiles; use and care of telephones; nomenclature, action, care and adjustment of 155 mm and 3" antiaircraft gun materiel; emplacing of and artillery drill on 155 mm and 3" antiaircraft guns; ceremonies and inspections. Three hours a week. Fee, \$.25. Two credits a quarter; autumn, winter, spring.

11-12-13. *Band*. Fee, \$.25. Two credits a quarter; autumn, winter, spring.

SECOND YEAR

51-52-53. *Basic Infantry*. Scouting and patrolling; musketry; automatic rifle; physical drill; combat principles; drill and command. Three hours a week. Fee, \$.25. Two credits a quarter; autumn, winter, spring.

61-62-63. *Basic Coast Artillery*. Drill and command; physical training; fire control and position finding for seacoast, antiaircraft and heavy mobile artillery; use, care and adjustment of azimuth instruments, antiaircraft data computers, plotting boards and other fire control materiel; characteristics and identifications of warships; aiming and laying of guns and mortars; ceremonies and inspections. Three hours a week. Fee, \$.25. Two credits a quarter; autumn, winter, spring.

65. *Basic Coast Artillery*. Forestry students only. Military sketching; camp messing and sanitation; camp discipline; rifle and pistol marksmanship; personal hygiene and first aid; cordage. Fee, \$.25. Two credits; spring quarter; Pack Forest.

81-82-83. *Band*. Fee, \$.25. Two credits a quarter; autumn, winter, spring.

THIRD YEAR

104. *Advanced Infantry*. Map reading and military sketching, drill and command. Fee, \$.25. Three credits; any quarter.

105. *Advanced Infantry*. Combat principles of the platoon and company; 37 mm and 3-inch mortar; machine guns, technique of fire, direct and indirect laying, machine gun characteristics, organization, elementary and advanced drill, machine gun in attack and defense, exercises with weapons and instruments, range and target exercises; drill and command. Fee, \$.25. Three credits; any quarter.

106. *Advanced Infantry*. Machine guns. Continuation of Mil. Sci. 105. Drill and command. Fee, \$.25. Three credits; any quarter.

114. *Advanced Coast Artillery.* Drill and command; military map reading and sketching; determination of co-ordinates by transit traverse and calculations; study of trajectory and the effects of velocity, air density, temperature and altitude; problems in computation of firing data for heavy mobile artillery. Fee, \$.25. Three credits; any quarter.

115. *Advanced Coast Artillery.* Drill and command; thorough knowledge of fire control installations for seacoast artillery; computation of data for firing at moving naval targets; dispersion; conduct of fire; observation of fire; spotting and adjustment of fire; armor attack; analysis of drill and target practice. Fee, \$.25. Three credits; any quarter.

116. *Advanced Coast Artillery.* Drill and command; gunnery, fire control and position finding for antiaircraft artillery; identification of aerial targets; observation and adjustment of antiaircraft fire; antiaircraft machine guns—stripping, nomenclature, action and care; searchlights and sound locators; antiaircraft artillery development. Fee, \$.25. Three credits; any quarter.

124. *Advanced Ordnance.* Ordnance materiel; drill and command. Fee, \$.25. Two credits; autumn.

125. *Advanced Ordnance.* Ordnance materiel. Fee, \$.25. Two credits; winter.

126. *Advanced Ordnance.* Ammunition—manufacture and use of all types. Fee, \$.25. Two credits; spring.

NOTE: The student must take in addition approved technical subjects from the lists obtainable from office of the professor of military science and tactics.

127. *Ordnance Laboratory.* An experimental study of the various Ordnance mechanisms to determine their characteristics, functioning, assembly and adjustment. Fee, \$.25. One credit; any quarter.

128. *Ordnance Laboratory.* Continuation of Mil. Sci. 127. Fee, \$.25. One credit; any quarter.

129. *Ordnance Laboratory.* A laboratory study of the various explosive compounds used in ammunition to include their preparation, purification, surveillance, etc. Fee, \$.25. One credit; any quarter.

FOURTH YEAR

130. *Advanced Camp.* Practical training in musketry, gunnery, rifle marksmanship, unit administration and supply, leadership and command. Compulsory for all advanced military students. Three credits. Six weeks in summer following third year.

154. *Advanced Infantry.* Administration: lectures on practical administration of a company including interior economy and management, preparation of rosters, reports, correspondence and orders. Military law, military history and National Defense Act, military resources and military strength of the United States, the state of national defense for war at critical periods, the cost of American wars, the traditional policy of the United States, drill and command. Fee, \$.25. Three credits; any quarter.

155. *Advanced Infantry.* Field engineering, combat principles of the platoon and company in attack, night operations, security on the march and at rest. Estimates of situation, orders, messages and problems, drill and command. Fee, \$.25. Three credits; any quarter.

156. *Advanced Infantry*. Combat principles, continuation of Mil. Sci.
155. Drill and command. Fee, \$.25. Three credits; any quarter.

157. *Military Thesis on Infantry*. Five credits; autumn, winter, spring.

164. *Advanced Coast Artillery*. Drill and command; military history and policy; administration, interior economy and management of batteries; messing; reports, records and military correspondence; military law and procedure of courts-martial. Fee, \$.25. Three credits; any quarter.

165. *Advanced Coast Artillery*. Drill and command; railway, heavy tractor and antiaircraft artillery—their tactical employment, mission and selection of positions; role of artillery in action—defensive and offensive; field engineering for artillery; motor transportation—truck and tractor driving, motor convoy rules and discipline. Fee, \$.25. Three credits; any quarter.

166. *Advanced Coast Artillery*. Drill and command; orientation—determination of meridian by stellar and solar observations and by special methods; problems in conversion from geographic to grid co-ordinates; artillery materiel including the development of heavy tractor, railway and antiaircraft artillery. Fee, \$.25. Three credits; any quarter.

167. *Military Thesis on Coast Artillery*. Five credits; autumn, winter, spring.

174. *Advanced Ordnance*. Drill and command; military law; administration. Fee, \$.25. Two credits; autumn quarter.

175. *Advanced Ordnance*. Ordnance engineering; principles of design, manufacture and supply. Prerequisites, Mil. Sci. 124, 125, and 126. Fee, \$.25. Two credits; winter quarter.

176. *Advanced Ordnance*. Organization of the ordnance department; property accountability; industrial mobilization. Fee, \$.25. Two credits; spring quarter.

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, including their theory, use, and application. Fee, \$.25. One credit; any quarter.

178. *Ordnance Laboratory*. A critical examination of the various gun sights, quadrants, range finders, etc., to determine the characteristics and probable errors. Fee, \$.25. One credit; any quarter.

179. *Ordnance Laboratory*. A laboratory study of various items of ordnance to determine the manufacturing operations involved in their production. Also a study of the use of gauges and other instruments for determining form and dimension. Fee, \$.25. One credit; any quarter.

MINING, METALLURGY AND CERAMICS

Mines Laboratory

Professors Roberts, Daniels, Wilson; Associate Professor Corey; Assistant Pittman.

I. MINING

Note—Mining, metallurgical, geological, or ceramic experience. Each student is required to spend at least one summer vacation, or its equivalent, in practical contact with the industry, and to submit upon his return to college a detailed report of his observations. Work of this nature offers an opportunity to secure data and material for the graduation thesis.

51. *Elements of Mining.* The field of mining, considering prospecting, boring, drilling, explosives, rock breaking, timbering, methods of development and working, transportation and drainage. Prerequisite, sophomore standing. Three recitations. Three credits; autumn. Daniels.

101. *Milling.* Preliminary course, designed to familiarize all students in the college with the principles and uses of the various types of crushing, sampling, concentrating and washing machinery in Mines Laboratory. Prerequisite, junior standing. Two recitations and one laboratory period. Lab. fee, \$5. Three credits; autumn. Roberts.

103. *Mine Rescue Training.* Twenty-five hours of instruction. Practice in the care and use of oxygen rescue apparatus, smokeroom training, and first-aid-to-the-injured work in the U.S. Bureau of Mines Safety Station. A government certificate is given on completion of the course. Required of all students in the College of Mines. One credit; winter. Daniels.

106. *Mine Excursion.* A five days' trip, taken in the spring of the junior year to a neighboring mining region; detailed examinations of mining and metallurgical industries. Expense is approximately \$25. One credit; spring. Roberts, Daniels.

107. *Mine Excursion.* A five days' trip taken in the spring of the senior year, similar to Min. 106. One credit; spring. Roberts, Daniels.

122. *Coal Mining Methods.* Prospecting, development, and operating methods used in the mining of coal and bedded deposits, with particular attention to economical and safe exploitation. The various systems of room-and-pillar and longwall mining to meet varying conditions are included, and studies are made of nearby mining operations. Prerequisite, Min. 51. Three recitations. Three credits; winter. Daniels.

151. *Mining Engineering.* A study of mine exploration, development, mining methods, and mining machinery, with especial reference to the practice at particular mines. Laboratory practice with air compressors, machine drills, pumps, and ventilation equipment. Prerequisite, senior standing. Two recitations, one laboratory period. Lab. fee, \$5. Three credits; autumn. Roberts.

152. *Ore Dressing.* The principal branches of ore dressing, with laboratory practice in complete mill tests of certain ores, checked by assays. Prerequisite, senior standing. Three recitations and two laboratory periods. Lab. fee, \$10. Five credits; spring. Roberts.

162. *Cost of Mining.* An economic study of mining, with illustrations of the capital required for opening mines of several types, the detailed costs of particular methods of mining, the costs of treatment, the returns

from typical ores, the life of mines, mine taxation, and amortization. Open to seniors in any department. Three recitations and one laboratory period. Four credits; winter. Roberts.

*163. *Mine Operation.*

170. *Coal Mining Plant.* Machinery and appliances employed in equipment and operation of coal mines, including hoisting, transportation, pumping, coal cutting, loading, and conveying equipment. Special emphasis is placed on principles of mechanized mining and the relationship between methods and machinery. Prerequisite, senior standing. Three recitations. Three credits; autumn. Daniels.

171. *Mine Gases and Ventilation.* Mine gases, methods of ventilation, control and distribution of air currents, ventilating fans and equipment, for both coal and metal mines. Mine lighting, safety, and prevention of accident hazards are included. Prerequisite, Min. 122. Three recitations. Three credits; winter. Daniels.

176. *Coal Preparation.* Fundamental principles underlying beneficiation of coal and non-metallic minerals; methods of preparation for market; testing procedure, laboratory work in float-and-sink methods, wet and dry washing processes, and consideration of economic factors, costs, and efficiencies. Laboratory work supplemented by field studies of washing plants. Prerequisites, Min. 101, Met. 103. Two recitations and two four-hour laboratory periods. Lab. fee, \$10. Five credits; winter. Daniels.

178. *Coal Preparation Machinery.* Types of machines and equipment used in preparation of coal and non-metallics, such as screens, crushers, jigs, tables, wet and dry washers, classifiers, and thickeners. Operation, adjustment, control, and selection of efficient types. Both laboratory and full-size pieces of equipment are available for detailed study. Prerequisite, Min. 176. Two recitations. Two credits; spring. Daniels.

182. *Mine Management.* Organization and administration of engineering plants, the keeping and interpretation of cost accounts, the efficiency of labor and methods, the financial, legal and social aspects of engineering operation. Prerequisite, senior standing. Three recitations. Three credits; spring. Daniels.

191, 192, 193, 194. *Thesis.* Preparation of a graduation thesis in mining, metallurgy or ceramics. A fee of \$5 a quarter is required to cover cost of materials. Completed thesis must be submitted at least 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. A fee will be required if the work involves the use of laboratory materials or equipment. Completed thesis must be submitted at least one month before graduation.

* Not offered in 1931-1932.

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.

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

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, Chem. 111. One recitation and three laboratory periods. Lab. fee, \$20. Five credits; autumn. Corey.

102. *Metallurgical Laboratory*. Experiments illustrating metallurgical principles. Prerequisite, Met. 53. One laboratory period. Lab. fee, \$10. Two credits; spring. Corey.

103. *Fuels*. A study of all types of fuels now used in industry and a consideration of the most effective utilization of the country's present supplies. Consideration of future development of fuels. Laboratory work in analysis. Prerequisite, junior standing. Three recitations and one laboratory period. Lab. fee, \$5. Four credits; winter. Daniels.

104. *Non-ferrous Metallurgy*. Metallurgy of copper, lead, zinc, gold and silver, especially the methods of roasting, smelting, lixiviation and refining. Prerequisite, Met. 53. Five recitations. Five credits; autumn. Corey.

153. *Wet Assaying*. Technical methods for the determination of copper, lead, zinc, etc., in ores and furnace products. For students in ceramics, analysis of clays and ceramic products. Prerequisites, Chem. 111. One recitation and two laboratory periods. Lab. fee, \$12. Three credits; winter. Corey.

155. *Iron and Steel*. Metallurgy and manufacture of commercial iron and steel; especial reference to 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 and industrial products. Prerequisite, Met. 153. Two laboratory periods. Lab. fee, \$12. Two credits; spring. Corey.

162. *Metallography*. The constitution and microstructure of metals and alloys, especially iron and steel, and their relations to the physical and mechanical properties of the metal. Prerequisite, senior standing. Open to all upperclass engineering students. Two recitations. Two 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. Lab. fee, \$5. Three credits; winter. Corey.

165. *Metallurgy Calculations*. Physical chemistry of the metallurgist, slag calculations, etc., illustrated by figures quoted from the present practice at a number of smelting plants. Prerequisite, senior standing. Three recitations. Three credits; winter. Corey.

166. *Electrometallurgy*. Study of methods and practice with special consideration of the possibilities of electrometallurgical industries in the Pacific Northwest. Prerequisite, senior or graduate standing. Three credits; spring. Corey.

221, 222, 223. *Advanced Metallurgy*. Studies in metallurgy. Prerequisite, graduate standing. Hours and credits to be arranged. Corey.

III. CERAMICS

90. *Ceramic Materials*. Origin, occurrence, physical properties, and preparation of clays, feldspars, limestone, magnesite, silica, mineral pigments and other 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. The removal of water from plastic materials. 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 credits; spring. Wilson.

104. *Calculations for Bodies and Glazes*. Physics and chemistry of preparing, drying, firing, and testing ceramic materials and glazes. The blending of raw materials for ceramic bodies 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*. Testing of clays and other ceramic materials. Determination of fineness of grain, shrinkage, porosity, and specific gravity; plasticity, bonding power, vitrification, fusion, chemical purification, action of colloids, hydrogen-ion concentration, etc. Prerequisite, junior standing in mines or engineering. Lab. fee, \$5 a quarter. 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. The design and production of new processes and products. Prerequisite, Cer. 90 to 110. Lab. fee \$10 a quarter. Three laboratory periods and two recitations. Five credits a quarter; autumn, winter, spring. Wilson.

****131, 132, 133. General Ceramics.** Occurrence, winning and preparation of materials used in ceramics. Technology of pottery, glass, lime, plasters, cements, metal enamels, or refractories. Hours and credits to be arranged. Wilson.

221, 222, 223. Ceramic Research. Studies of the ceramic resources of the Pacific Northwest or in the development of new products or processes. Pre-requisite, graduate standing. Hours and credits to be arranged. Wilson.

IV. MINING AND METALLURGICAL RESEARCH

The Technical Staff of the United States Bureau of Mines Northwest Experiment Station in Co-operation with the Instructors in the College of Mines.

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. Subjects of research relate to the mining and metallurgical 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

Professors Rosen, Venino, Wood; Associate Professor Newenham; Assistant Professors Van Ogle, Lawrence, McKay, Munro, Wilson; Instructors Kirchner, Welke, McCreery, Oliver, Terry, Woodcock, Bostwick; Associate Bogardus.

(Institutional Member of National Association of Music Schools)

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.

1, 2, 3. Elementary Applied Music. Credit to non-music majors and to music majors who have fulfilled entrance requirement in applied music through another branch.

Students in other colleges and schools of the University may earn one or two credits a quarter in the applied music courses. Students of the College of Fine Arts carry a larger number of credits, one and one-half to three. Students enrolled in these courses will be given opportunity, on demonstration of the required ability, to participate in public recitals of the department.

The various branches of applied music will be designated by capital letters, immediately following the course numbers:

- A. *Piano.* Venino, Van Ogle, McCreery.
- B. *Violin.* Rosen, Oliver.
- C. *Voice.* Bogardus, Lawrence, Hamm.

**** Will be offered if a sufficient number of students elect the course.**

D. *Violoncello*. Kirchner, Anderson.

E. *Organ*. Wood.

F. *Band and Orchestra Instruments*. Welke.

4, 5, 6. *Music History and Appreciation*. Study of development of musical literature. Includes study of typical examples together with fundamentals of form and design essential for intelligent enjoyment of music. Historical material necessary to give perspective for musical understanding. Assigned reading, analysis of various forms, discriminative listening. Required of all music majors. Three credits a quarter; autumn, winter, spring. Wilson, Woodcock.

7, 8, 9. *Elementary Applied Music*.

†10, 11, ‡12. *Choral Study*. The University chorus provides opportunity for those qualified to study the more serious as well as the lighter forms of choral composition. Candidates must satisfy the director as to the extent of their musical ability. Fee, \$1 for courses 10, 11. One credit a quarter; autumn, winter, spring. These courses may carry upper division credit in cases where the student has previously been enrolled in music courses for at least two years. Lawrence.

14. *Elementary Sight Reading and Ear Training*. Reading, hearing and representing simple music material. Reading of easy melodies with sol-fa syllables in first nine major and minor keys; aural recognition and representation of intervals found in major and minor triads with inversions; ability to write from dictation, simple four-measure phrase; transposition of simple melodies at piano; writing of original melodies involving easy tonal and rhythmic problems; understanding of terms which indicate tempo, dynamics, mood; elements of notation. Students who pass the entrance examination in sight-reading and ear-training with sufficiently high rating may be excused from this course. Prerequisite for Music 15. Daily. No credit. Autumn, winter, spring. Staff.

15, 16. *Sight Reading and Ear Training*. Intensive laboratory course in unison, two-part and three-part singing, involving more difficult tonal and rhythmic problems, chromatics and the minor mode; dictation; ear-training; melody writing; transposition; keyboard practice; notation; terminology. Prerequisite, Music 14 or exemption by examination. Three credits; autumn, winter, spring. Staff.

18, 19, 20. *Applied Music*.

22, 23, 24. *Music Appreciation*. The presentation of characteristic vocal and instrumental compositions in music literature for the purpose of increasing the understanding and enjoyment of good music. Designed for the general student. No credit to music majors. Two credits; autumn, winter, spring. Staff.

25, 26, 27. *Choral Study*. For freshmen. Part songs for men's voices. Candidates admitted only upon examination. Fee, \$1 for 25 and 26. Three credits a quarter; autumn, winter, spring. Lawrence.

28, 29, 30. *Choral Study*. Part songs for women's voices. Only advanced students will be admitted. Two credits a quarter; autumn, winter, spring. Wilson.

†Only those who have successfully completed the work in course 11 will be eligible for registration in course 12.

‡Audition required.

31, 32, 33. *Elementary Orchestra*. A study of many of the easier compositions in orchestral literature. Three rehearsals a week, one of which may be spent with chamber music or other ensemble groups recommended by the instructor. Two credits a quarter; autumn, winter, spring. Welke.

34, 35, 36. *Voice Training—Applied Music*. Principles of correct breathing and tone production essential to good singing. One credit a quarter; autumn, winter, spring. Bogardus.

40, 41, 42. *Elementary Orchestral Instruments*. Fundamental playing principles of each instrument and method by which all instruments may be taught in one class. Wind instruments, fall and winter. Strings, spring quarter. Fee, \$1. Daily. Three credits; autumn, winter, spring. Welke.

51. *Elementary Harmony*. The harmonic series, intervals, and chord structure. Use of primary harmonies and bytones. Analysis and keyboard practice. Prerequisite, some knowledge of the piano, Mus. 16. Five credits; autumn, winter, spring. Staff.

53. *Intermediate Harmony*. Secondary harmonies. Prerequisite, Mus. 51. Five credits; autumn, winter, spring. Staff.

56. *Elementary School Music*. The principles and procedures involved in teaching music in the primary grades with special emphasis upon material, appreciation, child voice and reading. Prerequisite, Mus. 15, 16. Five credits; autumn, spring. Munro.

61. *Advanced Ear Training*. Dictation and keyboard practice supplementary to harmony courses. Prerequisite, Mus. 16. Three credits a quarter; autumn, winter, spring. Wilson.

65, 66, 67. *Choral Study*. Not open to freshmen. Part songs for men's voices. Candidates admitted only upon examination. Fee, \$1 for 65 and 66. Three credits a quarter; autumn, winter, spring. Lawrence.

68, 69, 70. *Applied Music*.

84, 85, 86. *Advanced Voice Training—Applied Music*. One credit a quarter; autumn, winter, spring. Bogardus.

101. *Advanced Harmony*. Chromatic harmonies and modulation. Prerequisite, Mus. 53. Five credits; autumn, winter, spring. Staff.

104. *Advanced Music History*. A detailed study of the romantic and modern schools. Weber, Schubert, Schumann. Two credits; autumn. Van Ogle.

105. *Advanced Music History*. Chopin, Berlioz, Liszt. Two credits; winter. Van Ogle.

106. *Advanced Music History*. Strauss, Sibelius, modern 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 teaching of music in grades 4, 5, and 6. Study made of suitable material vitalized by class demonstration. Prerequisite, Mus. 56. Two credits; autumn, winter. Munro, Newenham.

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, Newenham.

116. *Junior High School Music*. Consideration of such special problems as the testing and care of the adolescent voice, part-singing, listening lessons, organization of vocal and instrumental ensembles, specialized courses and material. Prerequisite, Mus. 114 and 115. Two credits; spring, summer. Munro, Newenham.

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. *Applied Music*.

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 compositions with the idea of increasing skill in part-singing and promoting musicianship. Two credits; autumn, winter, spring. Wilson.

130, 131, 132. *University Band*. Continuation of the work of the freshman and sophomore years in the study and production of more difficult compositions for band. One credit a quarter; autumn, winter, spring. Welke.

133, 134, 135. *University Symphony Orchestra*. Complete symphony orchestra, maintained for study and production of more difficult orchestral compositions. Players admitted only upon examination. Membership to be mark of recognition. 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*. Continuation of instruction plan of 40, 41, 42; more advanced work in ensemble and orchestral routine, with regular class work. Required of all majors in instrumental public school music curriculum. Prerequisites, 40, 41, 42. Daily. Fee, \$1. 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. *Advanced Music Appreciation*. Historical background; Russian music; Russian folk songs; the Five Nationalists, Balakirew, Borodin, Cesar Cui, Moussorgsky, Rimsky Korsakow. Two credits; autumn. Van Ogle.

152. *Advanced Music Appreciation*. Tschaikowsky, Rubinstein, Brahms, Cesar Franck. Two credits; winter. Van Ogle.

153. *Advanced Music Appreciation*. Scriabin the mystic; Stravinsky the realist; Debussy and impressionism; modern Spanish music. Two credits; spring. Van Ogle.

154. *Senior High School Music*. Study of the music curriculum in the high school with special attention to organization, feasible credit courses, assembly music, choral and instrumental groups. Prerequisite, Mus. 116. Three credits; autumn. Munro, Newenham.

155. *Music Supervision*. Development of appreciation in the grades and high school. Comparative study of music courses and texts in general use. Prerequisite, Mus. 154. Three credits; winter. Munro, Newenham.

156. *Music Supervision*. General supervisory problems dealing with the training of teachers to meet the needs of school music in rural communities; special music programs and contests in school and community; survey and evaluation of music tests and measurements. Prerequisite, Mus. 155. Three credits; spring. Munro, Newenham.

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. *Applied Music*.

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. Two days devoted to vocal and two to instrumental compositions of the period. Four credits; autumn. Staff.

†191. *Eighteenth and Nineteenth Century Music*. Study of the music of these periods through ensemble performance projects. Four credits; winter. Staff.

†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; winter, spring. McKay.

199. *Senior Recital*. Two credits; winter or spring.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Graduate Composition*. Credits to be arranged, 24 to 36. McKay.

204, 205, 206. *Research*. Problems in music education. Credits to be arranged. Maximum 12 credits. Newenham.

207, 208, 209. *Thesis*. Either an original contribution from the student's field of research, or an acceptable original composition in one of the larger forms, performed before a committee of the faculty. Nine credits; autumn, winter, spring. Staff.

218, 219, 220. *Graduate Applied Music*. Open only to students having 30 undergraduate credits in one branch of applied music.

COLLEGE COURSES IN APPLIED MUSIC

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 into a more advanced course without having satisfactorily completed the work and passed an examination in the course in which he has been placed.

† Not offered until 1932, 1933.

The courses outlined are not arbitrary. They indicate the amount and character of the work the student is expected to cover for his musical degree. Credit will be given for equivalent courses pursued elsewhere prior to entering the University, providing application is made upon entrance.

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.

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 Litolf (vol. 1512).

(d) Mendelssohn, *Childrens' 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; Tschaiikowsky, 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, bk. 1; Hasert, op. 50, bk. 1; Loeschorn, op. 136, bk. 1.

(b) Bach, Little Preludes.

(c) Sonatinas or selections from easier compositions of Haydn, Mozart or Beethoven.

(d) Schumann, selection from *Kinderszenen* (Rider's Piece, Knight Rupert, In Memorium, 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 68A, 69A, 70A.

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. 299, bk. 2; Loeschorn, op. 136, bk. 1, or like studies.

(b) One of the easier sonatas of Haydn, Mozart or Beethoven.

(c) 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, Albums of the Master Series (Hughes), published by G. Schirmer or volumes containing like compositions by the same composers.

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; Schumann, Whims; 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

1. Major scales to be played in thirds, sixths and tenths, 4/4 measure, a quarter note to M.M. 88 in the following form: one octave in quarter notes, two octaves in eighth notes, three octaves in triplets and four octaves in sixteenth notes. Diminished seventh arpeggio, hands together, quarter note to M. M. 80 in same form as scales. Major and minor arpeggi, quarter note to M.M. 72, same form as scales, omitting triplets.
2. Czerny, op. 740, bk. 1, or Cramer.
3. Bach, Three Part Inventions.
4. At least one of each of the following: Mozart Sonatas, Beethoven Sonatas.
5. Selections from compositions of the romantic and modern schools.

SOPHOMORE YEAR

1. Any major or minor scale in the same form as that of the previous year, a quarter note to M.M. 116. Any major or minor arpeggio, hands together, M.M. 108 in the same form as that of previous year. Any dominant seventh arpeggio, hands together in the same form as that used for the diminished seventh, quarter note M.M. 88.
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

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

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 sonata or concerto not included in the previous years of study.
3. Compositions of romantic composers.
4. Compositions of modern composers.

VOCAL MUSIC

The course in vocal music is even more flexible than that outlined for piano study. The purpose is to develop the voice and musical understanding so that the best in vocal music may be faithfully interpreted. The fact of having studied music for four years will not necessarily entitle a student to graduation.

Freshman. Practical work in voice placing, breathing studies from among the following: Concone, op. 9; Marchesi, op. 1; Panofka, op. 85; Vaccai, bk. 1; simple Italian and English songs.

Sophomore. Progressive tone work; Bordoni, Concone, Marchesi, Panofka, simple Italian arias, Italian and English songs.

Junior. Tone work; advanced technique; arias from Italian, French and German operas; German song classics; modern French and English songs.

Senior. Tone work and technique; repertoire in opera and oratorio; recitals; senior program.

VIOLIN

Freshman. Violin Method, books 1 and 2, Rosen; exercises, op. 45, bk. 1, Wohlfahrt; bk. 1, De Beriot, exercises, op. 68.

Sophomore. Scales, Hrimaly; studies, Blumenstengal, op. 33, Mazas, bks. 1 and 2; Concerto, Accoly, Scene de Ballet, De Beriot.

Junior. Scales; exercises, bks. 1 and 2, Schraedieck; etudes, Kreutzer, Fiorillo, Rode, Rovelli; Concerto, 9, and 7, De Beriot; one sonata by Handel.

Senior. Scales, Rosen; etudes, Dancla; op. 7, Gavini; op. 35, Dont; sonata for violin alone, Bach; Concerto, Bruch, Mendelssohn, D-Minor Wieniawski and no. 4 Vieuxtemps.

In the last quarter the student is obliged to memorize one sonata by Bach for violin alone and one of the concertos given in the fourth year.

FEEES

Since most of the work in the courses in applied music must necessarily be of the character of individual instruction, the student is required to pay tuition fees for this work in addition to the general University tuition fee.

All fees are payable in advance to the comptroller of the University. The following quotations of regular fees are based on one lesson a week. More than one lesson a week will be charged for at the same rate. All lessons are one-half hour in length.

Classes. Mus. 10, 11, 25, 26, 28, 29, 40, 41, 42, 65, 66, 140, 141, 142, \$1.

Piano. Mr. Venino, \$25 a quarter; Mrs. Van Ogle, \$25 a quarter; Mrs. McCreery, \$20 a quarter; Miss Hinman, \$15 a quarter.

Vocal Music. Mrs. Bogardus, \$25 a quarter; Mr. Lawrence, \$25 a quarter.

Violin. Mr. Rosen, \$25 a quarter; Mrs. Oliver, \$18 a quarter.

Organ. Mr. Wood, \$25 a quarter.

Violoncello. Mr. Kirchner, \$25 a quarter; Mrs. Anderson, \$20 a quarter.

Band and Orchestra Instruments. Mr. Welke, \$20 a quarter.

Arrangements may be made for individual instruction in other musical courses if necessary or desirable.

Piano for practice may be rented at the comptroller's office at the following rates:

One hour daily, \$3 a quarter.

Organ for practice; one hour daily, \$12.50 a quarter.

Key deposit, \$1 a quarter.

Violin practice room, \$1.50.

All rental charges must be paid in advance. No rebate in these charges will be allowed. Lessons lost through enforced absence may not be made up unless the teacher in charge has been previously notified of the intended absence and is willing to accept the excuse for the absence.

NAVAL SCIENCE AND TACTICS

Good Roads Building

Commander Harvey W. McCormack, U.S.N., Professor; Commander F. H. Kelley Jr., U.S.N., Lieutenant Commander R. A. Hall, U.S.N., Lieut. C. F. M. S. Quinby, U.S.N., Lieut. A. L. Hamlin, U.S.N., Lieut. (JG) D. J. Tortorich, U.S.N., Assistant Professors; Malcolm Hamilton, (C.G.M., U.S.N.R.), C. E. Dunlap (C.S.M., U.S.N.R.), R. B. Littell (C.Y., U.S.N.R.), J. C. King (C.T.C., U.S.N.R.) Instructors.

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.)

FIRST YEAR

1-2-3. *Basic Course—Ordinance and Gunnery.* Infantry and artillery drill, and care and use of rifles and pistols. First aid and military hygiene, naval customs and etiquette. Seamanship—handling of boats under oars and sail, life boat work, knotting and splicing. Signaling, rules of the road. Weather and laws of storms. Lectures on general naval subjects. Anchor gear, handling heavy weights, handling steamers, duties of an officer. Four hours a week plus one additional hour of drill. Three credits a quarter; autumn, winter, spring.

SECOND YEAR

51-52-53. *Basic Course—Navigation and Nautical Astronomy.* Dead reckoning, piloting and observations for latitude; solutions of astronomical triangle, line of position, compass compensation, aerial navigation. Naval leadership, naval administration and discipline, naval communications. Lectures on general naval subjects. Four hours a week plus one additional hour of drill. Three credits a quarter; autumn, winter, spring.

55. *Seamanship.* Types of ships; hull and fittings; rope; knotting and splicing; mechanical appliances on shipboard; block and tackles; handling of heavy weights; small boats and fittings; handling small boats in surf; ground tackle; the steering of steamers. Three credits; winter.

56. *Seamanship.* Rules of the road; maneuvering to avoid collision; piloting; buoyage; handling steamers alongside dock; weather and laws of

storms; handling steamers in heavy weather; rescuing crew of a wreck; man overboard; stranding; instruments and accessories of navigation; magnetic and gyro compasses; charts, sailing directions, and light lists; tides; ocean currents. Prerequisite, Nav. Sci. 55. Three credits; spring.

61. *Sea Navigation*. Definitions used in navigation; construction of mercator charts and small plotting sheets; the magnetic compass; dead reckoning and current sailing; great circle sailing; piloting and use of charts; fixing ship's position by bearings; chronometers and sextants; nautical astronomy; the nautical almanac; time; the horizon system; correction of sextant altitudes; observations for latitude; meridian altitudes and reductions to meridian of sun, moon and stars; latitude by polaris. Prerequisite, sophomore standing. Three credits; autumn.

62. *Sea Navigation*. Solutions of astronomical triangle; azimuth of sun and stars; Haversine Cosine method; lines of position; fixes and running fixes; Dreisenstok method; star identification; tides and tidal effects; practical problems in fixing position at sea by various methods. Prerequisite, Nav. Sci. 61. Three credits; winter.

63. *Advanced Sea Navigation and Aerial Navigation*. Compensation of magnetic compass; navigators' day's work at sea; use of mooring board in navigation; use of radio bearings; star altitude curves (Weems); instruments of aerial navigation; aircraft compasses and sextants; aerial navigation; graphic solutions. Prerequisite, Nav. Sci. 62. Three credits; spring.

THIRD YEAR

101-102-103. *Advanced Course—Ordnance and Gunnery*. Armor, projectiles and ammunition, machine guns and major caliber naval guns, fire control, torpedoes. Principles of training, fire control, duties of gunnery officer and battery officer; defense against torpedo attack and aircraft; aerial gunnery and bombing. Engineering—principles of engineering, description of boiler, reciprocating engines, and steam turbines. Four hours a week plus one additional hour of drill. Three credits a quarter; autumn, winter, spring.

FOURTH YEAR

151-152-153. *Advanced Course*. Outline of international law and military law. Naval communications, naval leadership, naval administration and discipline, naval aviation, general information. Four hours a week plus one additional hour of drill. Three credits a quarter; autumn, winter, 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; Assistant Professors Adams, Leahy; Assistant Scott.

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 and a hospital diploma.

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. 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.* Informational study of nursing from the earliest times; traditions of nursing as a profession. A survey of the present field of nursing and discussion of problems. Open to any woman student in the University. Two credits; winter. Soule.

5. *Home Care of the Sick.* Practical course for women students. Instruction given in baths and bed making, care of patients ill with common communicable diseases, care of chronics, invalids and babies. Fee, \$1. Two credits; winter, spring. Leahy.

50. *Principles and Practice of Elementary Nursing.* This course includes the elementary nursing technique used in general care of patients. It is intended to give the student an understanding of the responsibilities which she must assume on entrance to the Hospital School of Nursing. Open only to nursing majors. Fee, \$2 (Harborview section, no fee). Two lectures and three 2-hour laboratory periods. Five credits; autumn, spring. Adams.

51. *Methods of Case Study.* Principles and practice of advanced nursing in relation to special types of disease. Project and clinics, practice in classrooms and wards. One credit; autumn, spring. Nursing instructor.

52. *Introduction to Hospital Practice.* Three months' experience in practical application of principles of hospital organization and economy, including one month practice in supply division, household, drugs, surgical; one month medical or surgical wards; one month dietary department. Six credits; autumn, spring. Nursing instructor and department heads.

60. *Principles of Medicine and Nursing in General Medical Diseases.* A survey of the field of medicine, metabolism, and cardiology, with etiology, pathology, symptoms, complications, treatment, and prevention, and specialized nursing of each disease. Lecture, demonstration, clinics. Recording and nomenclature included. Three credits; winter, summer.

Physician and medical nursing supervisor.

61. *Principles of Medicine and Nursing in Medical Specialties.* Including dermatology, syphilology, tuberculosis. Special emphasis on medical aseptic technique, modes of transmission and methods of prevention and control. Three credits; autumn, spring.

Medical specialists, medical nursing supervisor.

62. *Hospital Practice in Medical Nursing.* Practical applications of principles of nursing in medical diseases. Three months' experience on medical wards including clinics, conferences, and case studies on each disease. Six credits; autumn, winter, spring, summer. Medical nursing supervisor.

64. *Principles of Special Therapy.* The use of light, electricity, heat, water, massage, exercise, and occupation as aids in cure or control of disease processes. Two credits; autumn, spring.

Nursing instructor and department heads.

65. *Hospital Practice in Departments of Special Therapy.* One month experience in diet therapy, one month in physical therapy, giving practical application of principles of physical and diet therapy. Four credits; autumn, winter, spring, summer.

Nursing instructor and department heads.

66. *Principles of Preventive Medicine and Nursing Care in Acute Communicable Disease.* Etiology, modes of transmission, general symptomatology, complications, treatment, prevention, specialized nursing. Two credits; autumn, winter, spring, summer.

Nursing instructor and department heads.

68. *Practice of Nursing in Acute Communicable Diseases.* Three months' experience in practical application of principles of preventive medicine and nursing care of communicable disease. Six credits; autumn, winter, spring, summer.

Communicable disease nursing supervisor.

70. *Principles of Surgery and Nursing in General Surgical Diseases.* A survey of the field of general surgery with etiology, pathology, symptoms, complications, prevention and pre-operative, operative, and post-operative treatment and nursing care of each type of surgical case. Recording and nomenclature included. Lecture, demonstrations, clinics. Three credits; winter, summer.

Surgeon and surgical nursing supervisor.

71. *Principles of Surgery and Nursing in Surgical Specialties.* Includes gynecology, urology, orthopedics, and operating room technique. Three credits; autumn, spring. Surgical specialists and surgical nursing supervisor.

72. *Hospital Practice in Surgical Nursing.* Practical application of principles of nursing in surgical diseases. Three months' experience in surgical wards, including clinics, conferences, and case studies of each surgical disease. Six credits; autumn, winter, spring, summer. Surgical nursing supervisor.

73. *Operating Room Practice.* Practical application of principles of operating room technique, including three months' experience in anaesthetics, operative nursing care and emergency care. Six credits; autumn, winter, spring, summer.

Surgical nursing supervisor and operating room head nurse.

75. *Hospital Practice in Clinical Diagnosis.* Practical application of principles of clinical diagnosis. Demonstration, clinics, and two months' practice in out-patient department and diagnostic laboratory. Four credits; summer, winter.

Nursing instructor and department heads.

76. *Principles of Otolaryngology, Ophthalmology, and Neurology.* Lectures, demonstrations, clinics, dealing with anatomy and physiology of eye, ear, nose, and throat in relation to diseases of these organs and their treatment and prevention. Principles of nursing care. Two credits; autumn, spring.

Medical specialists and department heads.

80. *Principles of Pediatrics and Pediatric Nursing.* Physical and mental development of normal children and principles of their care and feeding. Clinical presentation of cases illustrating common diseases of infancy and childhood and the appropriate medical and nursing care, together with program of prevention. Five credits; winter, summer.

Pediatrician, pediatric nursing supervisor.

82. *Hospital Practice in Pediatric Nursing.* Practical experience in nursing care of infants and children including practice in formula room, nursery, out-patient, orthopedic and pediatric wards. Six credits; autumn, winter, spring, summer.

Pediatric nursing supervisor.

86. *Principles of Obstetrics and Obstetrical Nursing.* Anatomical and physiological aspects of pregnancy, labor, and the puerperium. Care during obstetrical, operative and complicated labors, nursing care of mother and newborn baby. Lectures, demonstrations, clinics. Five credits; winter, summer.

Obstetrician, obstetrical nursing supervisor.

88. *Hospital Practice in Obstetrical Nursing.* Practical application of principles of obstetrical nursing. Three months' experience in 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 disease, principles of mental hygiene, and nursing care of mentally ill patients. Five credits; winter, summer.

Psychiatrist, psychiatric nursing supervisor.

92. *Hospital Practice in Psychiatric Nursing.* Practical application of principles of psychiatric nursing. Three months' experience in psychiatric wards, out-patient, and commitment clinics. Nursing care of typical mental cases. Six credits; autumn, winter, spring, summer.

Psychiatric nursing supervisor.

100. *Professional Problems and Survey of Nursing.* Includes study of nursing organizations, legislation, grading of schools of nursing and similar topics. Two credits; winter, summer.

Superintendent of nurses.

102. *Principles of Public Health Nursing.* Lectures on social and nursing technique in public health nursing. Discussion and observation of infant welfare, school, industrial, tuberculosis, and general visiting nursing. Theoretical and practical work required. Prerequisite, graduate registered nurse. Five credits; autumn and spring.

Soule.

103. *Administration of Public Health Nursing.* Organization and administration of societies for visiting nursing, methods of collecting funds, boards of directors and various committees of these associations, office equipment, records, vital statistics, and supervision of staff nurses. Prerequisite, Nurs. Edu. 102. Five credits; winter, spring.

Soule.

110E. *Field Work.* See Nurs. Edu. 110E under Extension.

111. *Supervised Field Work in School Nursing.* With the medical department of the Seattle schools. Twelve hours field work; one hour class. Prerequisite, graduate registered nurse. Three credits; autumn, winter, spring.

Soule.

140. *The Health Examination.* This course is especially planned for

majors in physical education. It deals with methods of examination, symptoms, and disposition of cases from the educational point of view. Prerequisite, senior standing. Three credits; winter. Soule.

150. *Teaching in Nursing Schools*. Course deals with curriculum in schools of nursing. Also the principles of teaching applied to nursing procedure. Five credits; autumn. Soule.

151. *Administration of Schools of Nursing*. Course deals with organization and equipment. Curriculum and content of courses. Class and ward schedule of instruction and classes. Five credits; winter. Adams.

152. *Supervision of Hospital Departments*. Organization, equipment and administration. Five credits; spring. Adams.

COURSES FOR GRADUATES ONLY

200. *Seminar*. The present status of nursing education with special reference to the hospital and public health field in the State of Washington. Prerequisite, graduate registered nurse; 30 credits in nursing. Credits to be arranged. Soule.

201-202-203. *Problems*. In nursing education, administration, and public health. Prerequisite, graduate registered nurse; 30 credits in nursing. Credits to be arranged. Soule, Leahy.

205. *Research in Nursing Education, Hospital Administration, Public Health Nursing*. Prerequisites, Nurs. Edu. 102, 103, Bact. 101, 102, 103, or Nurs. Edu. 150, 151, 152. Autumn, winter, spring; credits arranged. Staff.

BY EXTENSION

E. 110. *Public Health Nursing*. Field work to give a practical knowledge of the field of public health nursing. Discussion of family problems, demonstration in nursing technique, culture taking, milk modification, maternity care, district problems, and so forth. 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

Professors Thompson (Director), Rigg, Guberlet; Associate Professors Utterback, Miller; Instructor Robinson; Assistant Director Phifer.

101. *Oceanography*. Fundamental principles of general oceanography. Three credits; spring. Miller.

Chem. 155. *Oceanographical Chemistry*. Composition of sea water, its general physical and chemical properties; colorimetric and spectral analysis; phase rule study of salt deposition; treatment of fundamental oceanographic data for hydro-dynamical calculations; interpretation of chemical data. Prerequisite, Chem. 111 or equivalent. Three credits; winter. Thompson.

Chem. 156. *Oceanographical Chemistry*. Laboratory methods. Prerequisite, Chem. 155. Two three-hour laboratory periods and one conference. Lab fee, \$1 per credit. Three credits; spring. Thompson, Robinson.

166. *Physical Oceanography*. A study is made of (1) physical properties of sea water; (2) methods of observation and operation of instruments; (3) an introduction to the theory of the measurements of ocean currents. Prerequisite, Physics 3. Two credits; spring. Utterback.

COURSES FOR GRADUATES ONLY

*Bot. 205, 206, 207. *Physiology of Marine Plants.*

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 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. Lab. fee, \$3. 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, forty-five credits. Staff.

ORIENTAL STUDIES

Professor Gowen. Co-operating: Professor Skinner; Assistant Cutts; Teaching Fellow Tatsumi.

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. They are designed to be of use to teachers, journalists, 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, 50, 51, 52, by doing additional 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.

†25. *Introduction to the History of Asia.* Resumé of the main currents of human movement in the history of the continent of Asia. Five credits; autumn. 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. Gowen.

†27. *Introduction to the History of Japan.* An outline of the history of Japan, giving an historical background to present problems. Five credits; spring. Gowen.

*40, 41. *Civilisation of Eastern Asia and the Pacific.*

* Not offered in 1931-1932.

† Upper division students may receive upper division credit 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.*

**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.

Geog. 103. *Political and Economic Geography of Asia.*

Geog. 106. *Geography of Africa and Australasia.*

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.*

Anthro. 112. *Peoples of Oceania.* Three credits; winter.

Anthro. 113. *Peoples of Northeastern Asia.* Three credits; autumn.

Anthro. 114. *Peoples of Central and Northern Asia.* Three credits; spring.

*125-126, 127. *Diplomatic History of Eastern Asia.*

Pol. Sci. 129. *International Relations of the Far East.* Five credits; spring. Mander.

Soc. 142. *Race Invasions.* This bears largely on the Orient. Three credits; spring.

Econ. 143. *Trade of the Far and Near East.* Prerequisite, B.A. 7. Five credits; winter. Skinner.

*Pol. Sci. 158. *Government and Politics of the Far East.*

** One or more of these languages is offered, to be determined by registration.

* Not offered in 1931-1932.

†Upper division students may receive upper division credit by doing additional work.

****152, 153, 154. Hebrew, Arabic, or Sanskrit.** Second year. Five credits; autumn, winter, spring. Gowen.

***190, 191, 192. Reading Course.**

Anthro. 193, 194, 195. Reading Course. In this course students may carry on work on the races of Asia. Instructor's permission necessary. Credits by arrangement; autumn, winter, spring. Staff.

COURSES FOR GRADUATES ONLY

Geog. 203. Research in Geographic Problems of Asia. Credit and hours to be arranged; spring. Renner.

***220. Seminar on Eastern Asia.**

***221, 222. Seminar on Eastern Asia.**

***225, 226, 227. Seminar in Oriental Diplomacy.**

290, 291, 292. Thesis. Directed investigation and writing in connection with work for advanced degrees. Two to five credits; autumn, winter, spring. Staff.

PAINTING, SCULPTURE AND DESIGN

Education Hall

Professor Isaacs; Assistant Professors Pratt, Hill, Benson, Foote, Patterson, Rhodes; Instructors Markey, Byers, Penington; Associates Worman, Puymbroeck, Curtis.

Students applying for advanced standing should present samples of work done to the head of the department.

5, 6, 7. Drawing. Elementary course. Charcoal and water color from casts and still life. Perspective. Prerequisite for any subsequent course in drawing and painting. Lab. fee, \$1. Three credits a quarter; autumn, winter, spring. Patterson, Hill, Byers.

9, 10, 11. Art Structure. Principles of design in line, dark and light, and color to develop the power of appreciation and the ability to create good design. Prerequisite for any subsequent course in art structure. Lab. fee, \$1. Three credits a quarter; autumn, winter, spring. Rhodes, Markey, Penington, Puymbroeck.

20. Sculpture Appreciation. Illustrated lectures and demonstrations on the history and appreciation of sculpture. Two credits; spring. Pratt.

32, 33, 34. Drawing and Sculpture for Architects. One quarter of sculpture and modeling from casts. Two quarters drawing from cast ornaments. Lab. fee, \$2. Three credits a quarter; autumn, winter, spring. Pratt, Hill.

53, 54, 55. Art Structure. Principles of design applied in batik, tie and dye and wood-block printing. Prerequisite, P.S.D. 9, 10, 11. Permission of department required for non-majors. Lab. fee, \$2. Three credits a quarter; autumn, winter, spring. Benson, Markey.

56, 57, 58. Drawing and Painting. Still life, and cast. Oil painting. Introduction to drawing from life. Prerequisites, P.S.D. 5, 6, 7. Lab. fee, \$1. Three credits a quarter; autumn, winter, spring. Patterson, Hill, Byers.

****One or more of these languages is offered, to be determined by registration.**
*** Not offered in 1931-1932.**

62. *Essentials of Interior Design*. Lectures on the art of home decoration. Intended to give the general student a practical knowledge of the subject. Illustrated with textiles, furniture, lantern slides. Special lectures and trips. Lab. fee, \$1. Two credits a quarter; autumn, winter, spring. Foote.

65, 66, 67. *Drawing and Painting*. Lab. fee, \$1. Prerequisites, P.S.D. 56, 57, 58. Three credits; autumn, winter, spring. Patterson.

72, 73, 74. *Sculpture*. Elementary clay modeling from the cast; from life also for proficient students; compositions and plaster casting. Prerequisites, P.S.D. 5, 6, 7. Lab. fee, \$4. Three credits a quarter; autumn, winter, spring. Pratt.

80, 81, 82. *Furniture Design*. Lectures on the history of furniture with the execution of original design for furniture. Lab. fee, \$2. Prerequisites, P.S.D. 5, 6, 7; 9, 10, 11. Three credits a quarter; autumn, winter, spring. Foote.

100. *Art Methods*. An orientation course designed to familiarize the students with the requirements for teaching art in high school and junior high school and for supervision of art in the grades, with some type problems and methods of presentation in each field; a summary of aims, objectives and current methods of teaching art. Prerequisite, P.S.D. 53, 54, 55, 56, 57, 58, 105, junior standing and one course in education. Two credits; autumn. Rhodes.

101. *Public School Art*. Elements of interior design adapted to public school art. Lab. fee, \$1. Prerequisites, P.S.D. 5, 6, 7; 53, 54, 55. Two credits; spring. Foote.

102. *Public School Art*. Problems in representation, design and industrial art. Adapted to grade, junior high, and high school courses. Methods of presentation. Lab. fee, \$1. Prerequisites, P.S.D. 5, 6, 7; 9, 10, 11. Two credits a quarter; winter. Rhodes.

103, 104. *Pottery*. Lab. fee, \$4. Prerequisites, P.S.D. 5, 6, 7, 9, 10, 11. Permission of department required for non-majors. Three credits a quarter; autumn, winter; and 103 in the spring. Worman.

105. *Art Structure*. Design as applied to lettering. Prerequisite, P.S.D. 5, 6, 7, 9, 10, 11. Permission of department required for non-majors. Lab. fee, \$50. Three credits; winter. Markey.

106. *Art Structure*. Poster designing. Prerequisites, P.S.D. 5, 6, 7, 9, 10, 11. Lab. fee, \$50. Three credits; spring. Markey.

107, 108, 109. *Portrait-Painting*. Lab. fee, \$3. Prerequisites, P.S.D. 56, 57, 58. Three credits a quarter; autumn, winter, spring. Patterson.

110, 111, 112. *Interior Design*. Lab. fee, \$2. Prerequisites, P.S.D. 5, 6, 7, 9, 10, 11. Five credits a quarter; autumn, winter, spring. Foote.

122, 123, 124. *Sculpture*. Portrait and figure from life. Compositions and work in terra cotta. Prerequisites, P.S.D. 72, 73, 74. Lab. fee, \$4. Three credits a quarter; autumn, winter, spring. Pratt.

126. *History of Painting*. Evolution of the great schools of painting. Illustrated lectures and discussions. Two credits; autumn. Isaacs.

129. *Appreciation of Design*. A study of the principles underlying structural and decorative design in pottery and porcelain, glass, textiles, etc. Aim to increase the enjoyment of beauty in the industrial arts and give a basis for more discriminating choices. Lab. fee, \$1. Two credits; spring. Benson.

130. *Pottery*. Advanced work with emphasis on glazing. Lab. fee, \$4. Three credits a quarter; autumn, winter, spring. Prerequisites, 103, 104. Worman.

132, 133, 134. *Sculpture*. Third year sculpture; continuation of second year work. Prerequisites, P.S.D. 122, 123, 124. Lab. fee, \$4. Three credits a quarter; autumn, winter, spring. Pratt.

136, 137, 138. *Sculpture Composition*. Imaginative designs and problems met in professional practice. Prerequisites, P.S.D. 72, 73, 74. Lab. fee, \$1. Three credits a quarter; autumn, winter, spring. Pratt.

150, 151, 152. *Illustration*. The principles of composition applied to the art of the book; charcoal and wash illustration; linoleum and woodcut. Study of processes used in the history of illustration. Lab. fee, \$1 for 151 and 152. Prerequisite P.S.D. senior standing. Three credits a quarter; autumn, winter, spring. Rhodes.

157. *Metal Work*. Design applied to construction of simple objects in metals. Lab. fee, \$2. Prerequisites, 53, 54, 55. Permission of department required for non-majors. Three credits a quarter; autumn, winter. Penington.

158. *Metal Work*. Design applied to problems in silver, stone setting. Lab. fee, \$2. Prerequisite, P.S.D. 157. Three credits; autumn, winter. Penington.

159. *Jewelry*. Advanced jewelry. Lab. fee, \$2. Prerequisites, P.S.D. 158. Three credits; autumn, winter. Penington.

160, 161, 162. *Life*. Lab. fee, \$3. Prerequisites, P.S.D. 56, 57, 58. Three credits a quarter; autumn, winter, spring. Isaacs.

163, 164, 165. *Composition*. Prerequisites, P.S.D. 56, 57, 58. Lab. fee, \$50. Three credits a quarter; autumn, winter, spring. Isaacs.

166, 167. *Art Structure*. Problems in decoration related to the stage. Lab. fee, \$1. Prerequisites, P.S.D. 5, 6, 7; 9, 10, 11. Three credits a quarter; autumn, winter. Benson.

169, 170, 171. *Costume Design and Illustration*. Prerequisites, P.S.D. 53, 54. Lab. fee, \$1. Two credits a quarter; autumn, winter, spring. Markey.

172, 173, 174. *Interior Design*. Advanced problems in interior design in elevation and perspective. Prerequisites, P.S.D. 110, 111, 112. Lab. fee, \$2. Five credits a quarter; autumn, winter, spring. Foote.

175, 176, 177. *Advanced Painting*. Lab. fee, \$3. Prerequisites, P.S.D. 56, 57, 58. Three credits a quarter; autumn, winter, spring. Isaacs.

179, 180, 181. *Costume Design*. Prerequisites, P.S.D. 169, 170, 171. Lab. fee, \$1. Two credits a quarter; autumn, winter, spring. Markey.

COURSES FOR GRADUATES ONLY

207, 208, 209. *Portrait Painting*. In this course the student will do work of ample size and of a professional character. Lab. fee, \$3. Five credits a quarter; autumn, winter, spring. Patterson.

260, 261, 262. *Advanced Painting*. An intensive course in painting from life. Lab. fee, \$3. Five credits a quarter; autumn, winter, spring. Isaacs.

263, 264, 265. *Composition*. Lab. fee, \$1. Three to five credits; autumn, winter, spring. Isaacs.

Suggested Courses in Commercial Art. P.S.D. 5, 6, 7; 9, 10, 11; 105, 106; 129, 151, 152; 160, 161, 162, 169, 170, 171, 179, 180, 181.

PHARMACY, PHARMACEUTICAL CHEMISTRY,
PHARMACOLOGY, TOXICOLOGY,
MATERIA MEDICA AND FOOD CHEMISTRY

Bagley Hall

Professors Johnson, Lynn, Langenhan; Associate Professor Goodrich; Instructors Cain, Evans and Assistants.

1, 2, 3. *Theoretical and Manufacturing Pharmacy.* Principles of pharmaceutical operations, and manufacture of Pharmacopoeial and National Formulary preparations. Two lectures and one laboratory period a week. Lab. fee, \$3 a quarter. Three credits a quarter; autumn, winter, spring. (Phar. 1, 2, 3 repeated winter, spring, autumn quarters.) 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.

5, 6, 7. *Drug Assaying.* Experiments in gravimetric and volumetric analysis. Training in fundamental principles of quantitative analysis with analysis of substances of pharmaceutical importance. Alkaloidal assay of crude drugs and assay of volatile oils. Two lectures and three laboratory periods a week. Five credits; autumn, winter. One lecture and one laboratory period a week. Two credits; spring. Lab. fee, \$6.50 in autumn and winter quarters, and \$3 in spring quarter. Cain.

8. *Pharmacopoeial Assay.* Practice and discussion in the assay of drugs by methods in the United States Pharmacopoeia. One lecture and three hours laboratory a week. Lab. fee, \$3. Two credits; spring. Cain.

9, 10, 11. *Prescriptions.* Theory and practical application of extemporaneous compounding. About 200 prescriptions are compounded, illustrating the theory of class room work. One lecture, one quiz, and one laboratory period a week. Lab. fee, \$3 a quarter. Three credits a quarter; autumn, winter, spring. Evans and assistants.

12, 13, 14. *Pharmacognosy.* Crude organic drugs, their source, methods of collecting and preserving, identification, active constituents and adulterations. Three lectures a week. Three credits; autumn, winter, spring.

51. *Elementary Pharmacy.* A brief survey of the fundamental knowledge of dispensing which the nurse should have. Two credits; autumn. Goodrich.

61. *Pharmacology and Therapeutics.* The source, actions, and uses of drugs. Three credits; winter.

101, 102, 103. *Pharmacology and Toxicology.* Physiological actions of drugs in health and disease; therapeutic uses and posology; symptoms and treatment in cases of 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 per week. Lab. fee, \$3 a quarter. Two credits; winter, spring. Goodrich.

112. *Biologicals.* A course dealing with those animal drugs and biological products used in medicine. Three credits; spring. Goodrich.

113, 114, 115. *Advanced Prescriptions.* Difficult and incompatible prescriptions. Special problems in dispensing and manufacturing. Preparation

of diagnostic reagents. A study of U.S.P. and N.F. Two lectures and three laboratory periods. Lab. fee, \$6.50 a quarter. Five credits; autumn, winter, spring. Langenhan and assistants.

181, 182. *Drug Store Practice*. Practice in dispensing in the prescription departments of drug stores, dispensaries and hospitals under the direct supervision of the registered pharmacist in charge, 10 hours a week. Class room reports and a study of modern methods and equipment for such work. Two hours class room discussion a week. Five credits a quarter; autumn, winter. Langenhan.

183. *New Remedies*. New and non-official remedies; modern modes of administering medicines. Three lectures per week. Three credits; winter. Langenhan.

184. *Pharmacy Laws and Journals*. Laws relating to and governing the practice of pharmacy. A survey of pharmaceutical journals and their use in every day work. Current problems. Three lectures a week. Three credits; spring. Langenhan.

191, 192, 193. *Research Problems in Pharmacy*. Open to juniors, seniors and graduates. Lab. fee, \$1 per credit hour. 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. Lab. fee, \$6.50 a quarter. Four credits; autumn, winter, spring. Lynn.

COURSES FOR GRADUATES ONLY

201. *Investigation in Practical Pharmacy*. Maximum credit forty-five credits. Lab. fee, \$1 per credit. Any quarter. Langenhan.

202. *Investigation in Pharmacognosy*. Maximum credit forty-five credits. Lab. fee, \$1 per credit. Any quarter. Goodrich.

203. *Investigation in Toxicology*. Maximum credit forty-five credits. Lab. fee, \$1 per credit. Any quarter. Lynn, Johnson.

204. *Investigation in Pharmaceutical Chemistry*. Maximum credit forty-five credits. Lab. fee, \$1 per credit. Any quarter. Lynn, Johnson.

205. *Investigation in Pharmacology*. Maximum credit forty-five credits. Lab. fee, \$1 per credit. 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; Assistant Professors Rader, Nelson; Associate Phillips.

The College of Liberal Arts requirement is five credits in philosophy. This requirement may be satisfied by any one of the following courses: Philosophy 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 hours 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*. (1) The religious experience: the origin, nature and types of religion, and its effect on individual happiness and morality. The social aspect of religion and the religion of democracy. Study of mystical experiences. (2) The truth of religion: the proofs of the existence of God, the basis of faith, pessimism, optimism and meliorism, human destiny. Discussion of agnosticism. Prerequisite, Phil. 1. Five credits; spring. Savery.

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*.

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 and controversies. Readings and discussions on pragmatism, new intuitionism, mysticism, philosophy of faith, fate and free will, mechanism and vitalism, materialism and idealism, the finite and infinite, the new realism, etc. Prerequisite, Phil. 1 or 101-102-103. Two credits a quarter; autumn, winter, spring. Phillips.

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 credits a quarter; autumn, winter, spring. Savery.

* Not offered in 1931-1932.

214-215-216. *Seminar in Logic.* The nature of deductive systems, the Boolean algebra of logic, studies in the *Principia Mathematica*, and recent contributions to induction and probability theory. Prerequisite, Phil. 5, or approval of instructor. Two or three credits a quarter; autumn, winter, spring. Nelson.

*241-242-243. *Seminar in Plato and Aristotle.*

244-245-246. *Seminar in Hume and Kant.* A critical study. Open to students upon approval of instructor. Two or three credits a quarter; autumn, winter, spring. Rader.

*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, Director; Assistant Professor Belshaw; Instructors Auernheimer, Torney; Associates Kunde, Edmundson, Graves, Phelan.

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.* Organized class work in natural gymnastics, games and sports. Practice of the fundamental skills, self-testing activities, combat, self-defense. During the freshman year the student is introduced to a wide variety of activities with the hope that he may find several in which he wishes to specialize during the sophomore year. Fee, \$.50. One credit a quarter; autumn, winter, spring. Torney and Staff.

5, 6, 7. *Restricted Exercise.* Individual gymnastics, games and sports. Work adapted to meet the individual needs based upon the findings of the medical and physical examination. Fee, \$.50. 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 from among the following: Basketball, boxing, fencing, golf, handball, playground

* Not offered in 1931-1932.

ball, soccer, tennis, tumbling, volleyball, wrestling, football, track and field, crew. Fee, \$.50. 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. Fee, \$.50. 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. Practice in teaching the activities in the regular physical education classes. Students may register in this course only with the permission of the instructor. Fee, \$.50. 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 119.

PHYSICAL EDUCATION AND HYGIENE FOR WOMEN

Gymnasium

Associate Professor Gross, Director; Assistant Professors deVries, Davidson, McGownd; Instructor Gunn; Associates Rulifson, Reed, Spencer, Glover, Maydahl; Assistant Jefferson.

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*. This course is given jointly by the home economics department, the nursing education department, and the physical education department. Its aim is to present fundamental facts and scientific data which serve as a basis for the development of intelligent attitudes toward individual, community, and social health.

(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 for one quarter. Fee, \$1. Two credits; autumn, winter, spring. Davidson, Gunn.

6-7. *Health Education.* The development of the public health program in rural communities and cities. Home care of patients, invalids, and babies. Public health and communicable disease. Two lectures a week for one quarter. Fee, \$1. Two credits; autumn, winter, spring.

8-9. *Health Education.* Food selection in relation to nutritive requirements of various age groups. Consideration of simple corrective diets. The aim of the course is to develop critical judgment and the ability to evaluate current literature in regard to diet. Fee, \$1. Two lectures a week for one quarter. Two credits; autumn, winter, spring. Rivers, O'Keefe, Bliss

10. *Health Education.* (Equivalent of P.E. 4-5, 6-7, 8-9). This course deals with personal and general hygiene as a means for the improvement of living. It considers the meaning of health in terms of life values, the biologic approach for the study of health, the place of intelligent control in modern civilization; it includes the physiological basis for health practices, both present and future; the problems in community hygiene and community health as they relate to the fundamental principles of sanitary science and disease prevention, resources of the community for conservation and promotion of health; the scientific principles of nutrition applied to various age groups, and the development of critical judgment of current literature in regard to dietary problems. Five credits; autumn, winter, spring. Fee, \$1.50.

Davidson, Rivers, Leahy

PHYSICAL EDUCATION ACTIVITY COURSES FOR WOMEN

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 and fees, see time schedule.

Reed, Rulifson, deVries, Glover, Jefferson, Maydahl, Spencer.

1, 2, 3. *Corrective Gymnastics.* Fee, \$1.50. One credit; autumn, winter, spring. McGownd.

PROFESSIONAL COURSES FOR MEN AND WOMEN

80. *Introduction to Physical Education.* (For men.) A 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. Health interpreted in terms of life values. Health information that affords a basis for intelligent selection in the formation of healthful habits and attitudes. Two credits; winter. Foster.

95. *Elementary Games.* (For men.) Games of low organization. Demonstration in the presentation of play materials. Fee, \$.50. 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. Fee, \$.50. Two credits; winter. Gross.

101-102. *Survey of Gymnastics.* (For women.) Gymnastic terminology. 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. Fee, \$.50 each; Three credits a quarter; winter, spring. Davidson.

110. *Athletic Training and First Aid.* (For men.) This course will consider athletic training and conditioning with practice in the use of tests to determine condition. A study will be made of safety measures for the prevention of injuries, with practice in the recognition and treatment of injuries common to the playgrounds, gymnasium and athletic field. Fee, \$.50. Three credits; winter. Kunde.

111. *Rhythms and Dramatic Games.* (For women.) Elementary rhythms, singing games and folk dances. Material, educational value and methods of teaching. Study of their use and significance in child development. One lecture, two hours of practice. Fee, \$.50. Three credits; autumn. Reed.

112. *Elementary Athletic Games.* (For women.) The practice in progressive series of games from the hunting games and elementary forms to the standard athletic activities of late adolescent years. A study of game sequence and organization, methods of judging achievement and improvement. Practice in leadership and organization. One hour lecture, two hours practice. Fee, \$.50. Three credits; winter. Rulifson.

113. *Playground and Community Recreation.* (For men and women.) Organization of recreational programs for children and adults. Use of facilities and equipment for boys' and girls' clubs, scouts, camps, church, school recess, fraternal and industrial organizations. Classification of games and sports activities suitable for the various age groups. Observation of work in the city. Fee, \$.50. 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. A study of muscular efficiency, fatigue, recovery, chemical changes, neuro-muscular control and results of training with special application to games and sports, corrective work and posture. Prerequisites, Anat. 101; Physiol. 50, or the equivalent. Five credits; spring.

122. *Kinesiology.* (For men and women.) A 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. Fee, \$.50. Three credits; autumn. McGownd.

127. *Tests and Measurements.* (For men and women.) The place and possibilities of measurement in physical education; main steps of development; aims and accomplishment of outstanding tests; need for and use of

tests in physical education. Study of elementary statistical method and principles involved in construction of tests will be conducted. 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; methods of developing kinesthetic sense and releasing strains in order to remedy defects due to neuromuscular hypertension. Analytical study and application of remedial exercises. Fundamental manipulations of massage and its place in correction of postural defects. Practice in teaching these methods. Two hours lecture and four hours practice. Prerequisites, P.E. 122, Anat. 101, 110, 111, 112, and Physiol. 50. Fee, \$.50 each. Three credits; autumn, winter, spring. McGownd.

134. *Problems in Adapted Activities.* (For women.) Special problems, including survey of hospital, grammar school and high school adapted activity work. Research in remedial and orthopedic fields. Problems selected will depend upon personnel of class. Prerequisites, P.E. 131, 132, 133 or equivalent. Fee, \$.50. One to five credits; winter. McGownd.

135, 136. *Individual Gymnastics.* (For men.) This course will consider physical abnormalities of the most frequent occurrence; relation of postural defects to organic function; methods of prevention and improvement with practice in the 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. Organization and class management. Participation in the activities of the program including wrestling, boxing, fencing, bodily contact activities, stunts, tumbling, athletic dancing and the fundamental skills of athletic sports. Fee, \$.50. Three credits a quarter; autumn, winter, spring. Auernheimer and Staff.

145. *Principles of Physical Education.* (For men and women.) Social, biological, and educational foundations. A study of significant movements shaping the trend of physical education both past and present. The place of physical education in American life and its relation to general educational theory and practice. 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. Administrative problems of the director, supervisor and teacher. Relationship of the department to other departments. Selection of staff on the basis of professional qualifications. Methods of keeping records. Construction, cost and care of gymnasiums, athletic fields and equipment. Prerequisites, Edu. 75U, P.E. 145. Fee, \$.50. Five credits; spring. Foster and Staff.

152. *Organization and Administration of Physical Education.* (For women.) The organization of activities for grade and high school curriculum. Methods of classification of students and administration of activities, the organization of leadership, the arrangement and care of physical equipment, and analytical study of various types of activities. Prerequisite, P.E. 101, 102, 111, 112, 113, 162, 163, 164 and Edu. 75V. Two hours a week. Fee, \$.50. 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 with specific reference to the psychological basis for teaching health and the application of principles to the practical problems of the leadership of children to develop intelligence and interest in self-direction of health practices. Fee, \$.50. 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. Fee, \$.50. Two credits a quarter; autumn, winter, spring.

Graves, Edmundson, Phelan, Kunde.
162, 163, 164. *Methods in Physical Education*. (For women.) Theory and application of educational method to the various branches of the physical education program. The course will include instruction in the history and theory of athletic activities including hockey, baseball, basketball, tennis, badminton, lacrosse, volleyball, speedball, and swimming; practice in refereeing and coaching athletics; the history and theory of the dance as an educational factor; the contribution of music to the dance; a study of the use and relation of the various types of rhythmic activity in the physical education program. Prerequisites, P.E. 61, 62, 63, 64, 65, 67, 68, 75, 80, 82, 87, 91, 92, 93, 95 and 96 or 97. Fee, \$.50 each. Five credits; autumn, winter and spring. deVries, Glover, Rulifson, Reed.

175. *Methods in Teaching Swimming and Diving*. (For men.) Fee, \$1.50. Two credits; winter. Torney.

180, 181. *Campcraft*. (For women.) These courses represent both 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 organizations. Programs and activities are evaluated. Fee, \$.50 for 181. Two credits each; spring, summer. Davidson.

182. *Scouting Principles and Practice*. (For men.) Scouting education, including its philosophy, pedagogy and psychology. A study of the aims, objectives, organization and management, along with the practical participation in the organization and use of subject matter. Fee, \$.50. Prerequisite, Junior. Three credits; spring. Torney.

Teachers' Courses in Physical Education. See Edu. 75U and Edu. 75V. For additional courses, see Edu. 179, Health Education Movement and 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, relation of physical education to extra-curricular activities, organization of remedial programs. 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 relat-

ing to the in service education of teachers; problems relating to 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; the relation of the supervisor and the untrained teacher in physical education will be studied. Prerequisite, graduate standing and teaching experience, and 30 credits in physical education. Three credits; winter. Gross.

PHYSICS

Physics Hall

Professor Osborn; Associate Professors Brakel, Utterback; Assistant Professors Henderson, Loughridge; Instructors Newbury, Kenworthy, Higgs; Demonstrator or Associate _____.

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. Lab. fee, \$2. Five credits a quarter; autumn, winter. Osborn.

Note: Architecture students taking 1 or 4 do not take the laboratory work. Four credits.

3. *General Physics, Electricity.* Required of physics majors, of mathematics majors taking physics as a minor and of pre-med students. Prerequisites, Physics 1, 2. Lab. fee, \$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. Lab. fee, \$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. Lab. fee, \$2. Five credits; spring. Utterback.

50-51. *Sound and Music.* For Fine Arts students only. Lab. fee, \$2. Five credits a quarter; winter, spring.

54. *Photography for Amateurs.* Prerequisite, elementary physics or chemistry. Lab. fee, \$4. Three or five credits; spring. Higgs.

89-90. *Physics of the Home.* For students in home economics and nursing. Lab. fee, \$2. 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. Lab. fee, \$2. Five credits a quarter; autumn, winter. Brakel.

98. *Physics for Engineers. Electricity.* Prerequisite, Physics 97. Lab. fee, \$2. Five credits a quarter; winter, spring. Brakel.

99. *Physics for Engineers*. Light and heat. Prerequisite, Physics 97. Lab. fee, \$2. 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. Lab. fee, \$2. Five credits; winter. Brakel.
109. *Pyrometry*. Prerequisite, Physics 3 or 6. Lab. fee, \$4. Two credits; spring. Utterback.
- *110. *Heat and Introduction to Thermodynamics and Kinetic Theory*. Prerequisite, Physics 3 or 6. Lab. fee, \$2. Three credits.
113. *Acoustics and Illumination*. For students in architecture only. Prerequisite, Physics 2 or 5. Lab. fee, \$2. Four credits; spring. Osborn.
- *115. *Applications of Photography to Scientific Work*. Prerequisite, 15 credits of college physics and 15 credits of college chemistry. Lab. fee, \$4. Three credits.
154. *Electrical Measurements*. For engineering students. Prerequisite, Physics 97, 98, 99. Lab. fee, \$4. Three credits a quarter; autumn, spring. Brakel.
160. *Optics*. Prerequisite, Physics 3 or 6, and the calculus. Lab. fee, \$4. Five credits; spring. Osborn.
166. *Physical Oceanography*. A study is made of (1) physical properties of sea water, (2) methods of observation and operation of instruments; (3) an introduction to the theory of the measurements of ocean currents. Prerequisite, Physics 3. Two credits; spring. Utterback.
- 167, 168, 169. *Special Problems*. Prerequisite, special permission. Lab. fee and credit arranged; autumn, winter, spring. Staff.
- *170. *Spectrometry*. Prerequisite, 20 credits of physics. Lab. fee, \$4. Five credits.
- *180. *History of Physics*. Prerequisite, 25 credits of physics. Two credits.
- 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. Lab. fee, \$4. 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.
- *205. *Kinetic Theory*. Prerequisite, 40 credits of physics. Three credits.
- 210-211. *Vibratory Motion and Sound*. Prerequisites, 40 credits of physics and taking Math. 114. Lab. fee, \$2. Two credits a quarter; autumn and winter. Osborn.

* Not offered in 1931-1932.

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.

219. *Hydrodynamics*. See Oceanographic Laboratories.

*220. *Advanced Dynamics*. Prerequisite, Physics 202. Three credits.

*224. *Electro-statics and Magneto-statics*. Prerequisite, Physics 202. Three credits.

*226-227-228. *Electron Theory*. Prerequisite, Physics 202. Two credits a quarter.

230, 231, 232. *Atomic Structure*. Prerequisite, Physics 202. Three credits a quarter; autumn, winter, spring. Utterback.

*240. *Wave Mechanics*. Prerequisite, 40 credits of graduate physics courses. Three credits.

250, 251, 252. *Seminar*. Prerequisite, graduate standing. One credit a quarter; autumn, winter, spring. Henderson.

256, 257, 258. *Research*. Credits arranged; autumn, winter, spring. Staff.

POLITICAL SCIENCE

Philosophy Hall

Professors Martin, Harris; Associate Professors Cole, Mander, Wilson; Teaching Fellows.

The courses in political science are offered to meet the needs of the following groups: (1) students seeking sufficient political training to aid 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, 53, and 54, 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 36 credits in political science, of which at least 18 shall be in upper division courses.

Major programs must be approved by the department.

* Not offered in 1931-1932.

Programs must include a sequence of courses amounting to 15 credits in one group and at least eight 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.* A study of representative types of government; presidential, parliamentary, federal, unitary. A rapid survey of the governments of the United States, England, France, Switzerland, Germany and Czecho-Slovakia, comparing them in regard to powers, forms of organization, and function. Brief discussion of political parties, elections, political ideas and foreign relations. Five credits; autumn, winter, spring.

Martin and Staff.

INTERMEDIATE COURSES, PRIMARILY FOR SOPHOMORES

51. *Principles of Politics.* A study of the origin, form, functions and nature of the state; its relations to individuals, to other states, and to other social institutions. Five credits; autumn. Wilson.

52. *Introduction to Public Law.* A detailed consideration of the relation of the state to the individual; constitutional guarantees; freedom of speech and of the press; fundamental concepts in constitutional, international, administrative and criminal law. Five credits; winter. Cole.

53. *Problems of Democracy.* A consideration of problems peculiar to and growing out of the modern democratic state; problems of the electorate and of parties; popular methods of legislation. Five credits; spring. Wilson.

54. *International Relations.* Evolution of the modern states system; alliances and the balance of power; geographic, economic, cultural, racial and psychological factors underlying international relations; the problems of diplomacy. Five credits; autumn. Mander.

UPPER DIVISION COURSES

Prerequisite: Pol. Sci. 1. Recommended: Pol. Sci. 51, 52 or 53, and one of the following courses: Econ. 1, Soc. 1, Hist. 1-2. No prerequisites for Pol. Sci. 101.

101. *Introduction to American Constitutional Government.* An introductory course dealing with the fundamental principles of the American constitutional system; the framing of the Constitution; the Constitution in the hands of Marshall and Taney; post-Civil War constitutional principles; current constitutional controversies; fundamental legal rights and principles and ideals of American governments. Two credits; autumn, winter, spring.

Wilson.

Group I—Political Theory and Jurisprudence

111. *History of Political Theory.* A comparative study of ancient, medieval and modern ideas and institutions of statehood; periods and schools in the development of political thought; recent tendencies. Three credits; autumn.

Wilson.

112. *American Political Theory.* American political ideas and the fundamental characteristics of the American political system; development of political thinking in the United States; ideas of the Revolution, the Constitution, the democracies of Jefferson and Jackson, the controversy over slavery and "states' rights;" recent developments. Three credits; winter. Wilson.

113. *Contemporary Political Thought.* A study of recent and contemporary political ideas in Europe, America and the Orient; relation of the state to property and labor; questions of sovereignty and allegiance; recent political doctrines, including pluralism, socialism, syndicalism, etc. Three credits; spring. Wilson.

114. *Oriental Political Theory.* A study of the theories and principles of statehood and statecraft of the Orient, with special emphasis on the political theory of China, Japan and India. Five credits; winter. Wilson.

118. *Law and the State.* Ancient, medieval and modern conceptions of the relationship between political authority and the legal institution; law and custom, law and morality, law and legislation, law and "interests." Legislative and judicial functions compared; the principles of legislation versus the principles of judicial decision. Five credits; autumn. Cole.

119. *Jurisprudence.* Historical development of the science of jurisprudence; comparative legal systems; legal rights and duties; legal relations; fundamental legal theories; English and American legal institutions. Open to pre-legal students in the lower division. Five credits; winter. Cole.

120. *Introduction to Roman Law.* The political and sociological implications of Roman law doctrines based upon the Institutes of Justinian, together with a summary of their development in modern continental codes. The course is designed to provide students with a comparative viewpoint so as to enable them to appreciate more clearly the essential characteristics of English legal and political theory. Discussion, lectures, assigned readings. Open to pre-legal students in the lower division. Five credits; spring. Cole.

Group II—International Relations

121. *Foreign Relations of the United States.* Leading American foreign policies as regards Europe, Latin America and the Far East; the cardinal principles of American diplomacy; recent applications of the Monroe doctrine; the United States and the Great War; the League of Nations, and the Treaty of Versailles; contemporary questions of foreign policy. Three credits; winter. Mander.

122. *Administration of American Foreign Affairs.* Organization of the department of state; the diplomatic and consular services; American diplomatic machinery and procedure; powers of the president and senate in foreign affairs; the making and enforcement of treaties; the war powers; American participation in international administrative and judicial agencies. Three credits; spring. Martin.

124. *International Relations of Post-War Europe.* The peace treaty; military control and disarmament of Germany; reparations; admission of Germany to the League; the break-up of Austria-Hungary and the new nations of Southeastern Europe. The little Entente; Russian foreign policy; Great Britain in post-war Europe. Locarno and after. Three credits; spring. Mander.

125. *The Government of Dependencies.* The government and control of the so-called backward peoples and areas of the world; colonial policies and administrative practices of the great powers; organization and administration of mandated territories under the League of Nations. Five credits; spring. Mander.

127. *International Organization and Administration.* Early international federations; unions of nations; international conferences and commissions; international legislation; contemporary efforts at international organization with special consideration of the League of Nations. Three credits; winter. Mander.

129. *International Relations of the Far East.* The foreign relations of China and Japan; the rise of Japan as a world power; recent international conferences on the Pacific and Far Eastern questions. Five credits a quarter; spring. Mander.

International Law. (See Law 184, 185.) 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. *American National Government.* The formation and development of the American constitutional system; government under the colonies; the executive; the Congress; the courts; parties and elections; evolution through court decisions and political practice. Five credits; autumn. Cole.

152. *Political Parties.* A study of the organization and methods of political parties in the United States, with some attention to political parties of foreign countries. Analysis of the forces constituting political parties, primary and convention systems, campaign propaganda, election administration, campaign expenditures, and the function of the party system. Five credits; winter. Harris.

153. *Introduction to Constitutional Law.* The American constitutional system; the American judiciary; powers of the federal government; the states and the nation; rights and duties of citizens; fundamental American constitutional doctrines; leading decisions of the supreme court. Five credits; spring. Cole.

*154. *The Law of Public Administration.*

155. *Introduction to Public Administration.* A study of the administrative aspect of modern government; organization, structure, budget and fiscal control, civil service, public reporting, standards of measurement, and other topics. Five credits; autumn. Harris.

Public Finance. See Bus. Adm. 124.

156. *European Governments and Political Institutions.* A comparative study of European governments, mainly of the parliamentary type; the responsible ministry; relation between the executive and the legislature; the new governments of Europe. Five credits; autumn. Mander.

*158. *Governments and Politics of the Far East.*

159. *The British Commonwealth.* The growth of self government in the Dominions and India; the constitutional structure of the Commonwealth; foreign relations of the Empire; imperial co-operation; the 1926 Balfour Report; the Commonwealth and the League of Nations. Five credits; winter. Mander.

*160. *Government and Constitutions of the British Dominions.*

* Not offered in 1931-1932.

161. *Municipal Government.* An elementary survey of municipal government, with a brief study of some of the principal activities of cities. History and growth of cities, the city and the state, home rule, city charters, the mayor, council, commission, and city manager, forms of city government, civil service, courts, police, and other municipal problems. Five credits; autumn. Harris.

162. *Municipal Administration.* The administrative organization of city governments; city planning and zoning, water supply, parks, waste disposal, health, traffic, fire protection, municipal finance, and public utilities. Five credits; winter. Harris.

163. *State Government and Administration.* Colonial origins; state constitutions; the governor, the legislature; relation of the state to the national government; parties; elections; organization and methods of state administration; administrative reorganization, with special reference to Washington. 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.

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.

221. *Seminar in International Organization.* Three to five credits; autumn. Mander.

251. *Seminar in Politics and Administration.* Research in special problems. Three to five credits; spring. Harris.

256. *Seminar in Public Law.* Special subject for investigation: Law and opinions in the first quarter of the twentieth century. Three to five credits; winter. Cole.

Seminar in Oriental Diplomacy. (See Oriental Studies 225-226-227.)

PSYCHOLOGY

Philosophy Hall

Professors Smith, Guthrie, Wilson; Associate Professor Esper; Assistant Professors Gundlach, Wilkinson; Associate Hermans.

Students in the College of Liberal Arts, as well as in the College of Science, may major in psychology.

The Liberal Arts requirements are 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.* A survey of the science as a whole. Man's original nature, the way in which nature is altered by use, and the common modes of individual and social behavior that result. No prerequisites. Fee, \$1.50. Five credits; course repeated every quarter. Staff.

102. *The Neural Basis of Behavior.* Contemporary neurological theory concerning action, the emotions, the regulatory functions, learning, and think-

ing. A fundamental course for majors and other students in psychology. Prerequisite, Psych. 1. Five credits; winter. Esper.

106. *Experimental Psychology*. Students receive training in laboratory methods, are made familiar with the more important kinds of psychological apparatus, and perform many of the classical experiments in psychology. 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. A knowledge of the subject matter of this course is necessary to the critical appreciation of all experimental findings. Required of majors in psychology. Prerequisite, Psych. 1. Five credits; winter. Guthrie.

109. *Mental Tests*. Principles of experimental procedure. 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*. The development of experimental psychology. Prerequisite, 10 credits in psychology. Two credits; autumn. Guthrie.

112. *Modern Psychological Theory*. A criticism and comparison of the theories of living American and foreign psychologists in the light of recent experimental findings. 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 the direction of the student's particular interest, acquainting him with a wide range of subjects and the new developments in psychology treated in recent books and journals. Prerequisite, 10 credits in psychology. Five credits; winter. Guthrie.

116. *Animal Behavior*. A course in comparative psychology dealing with the beginnings and development of mind, as shown in the behavior of animals under natural conditions and in the laboratory. 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*. A psychological study 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*.

121. *Applied Psychology*. Psychology as applied to such fields as personal efficiency, vocational guidance, scientific management, social work, law, medicine, athletics, and 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.

* Not offered in 1931-1932.

126. *Abnormal Psychology*. Description and explanation of abnormal behavior. Psychoneuroses, automatisms, "The Unconscious," dreams, and sleep. Prerequisite, 10 credits in psychology. Five credits; spring. Guthrie.

131. *Child Psychology*. Individual and social development and their causes, from infancy to adult age, with the purpose of giving the student a scientific understanding of childhood. Prerequisite, Psych. 1. Five credits; autumn. Smith.

132. *Principles of Clinical Psychology*. Methods of history taking, diagnosis and training of children brought for clinical examination. The analysis of special disabilities, social maladjustments, and individual traits in childhood. Prerequisite, Psych. 1. Three credits; spring. Wilkinson.

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

Professors Frein, Umphrey, Patzer; Associate Professors Goggio, deVries, Helmlingé; Assistant Professors Chessex, Garcia-Prada, Whittlesey, W. Wilson; Instructors Simpson, C. Wilson; Associate Hamilton; Assistants Giuntioni, Vargas; Teaching Fellows.

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.

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. 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.) This course deals with a number of great French, Italian and Spanish literary monuments from an early period to the present time. Its purpose is to familiarize the students through a comparative study of these masterpieces with the great literary monuments of each respective country, and in so far as it is possible, with their influence upon the literatures of the other two. Lectures in English and collateral reading of English translations. No knowledge of French, Italian or Spanish necessary. Students of French, Spanish or Italian literature and also students of English literature will find the course helpful toward a better understanding of the literature in which their interest lies. For liberal arts students choosing any of the Romanic 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. Upper division students will be required to do a reasonable amount of extra reading for their credits. Courses may be entered any quarter. Students can receive credit in only one language. Three credits a quarter; autumn, winter, spring. Goggio.

41. *Phonetics*. Intended to furnish the student an opportunity to acquire a reasonably correct pronunciation and to bring more order out of what seems a mass of exceptions. Prerequisite, French 3. Three credits; repeated each quarter. Frein.

71, 72, 73, or 137, 138, 139. *Scientific French*. For students in science. Reading in their special lines will be assigned to the students majoring in the several sciences. Conferences will afford an opportunity for individual work. 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 5 and 8 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.

107*, 108. *Themes*. Writing of original compositions upon assigned topics. Prerequisites, French 102 with grade of A or B. 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 1931-1932 the number is 108. 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*. Course conducted in French. A history of the French novel from its beginning. Assigned reading of representative novels. Prerequisites, French 6 and 9. Three credits a quarter; autumn, winter, spring. Helmlingé.

*124, 125, 126. *The Short Story*.

127, 128, 129. *Advanced Conversation for Majors*. Careful preparation for each day's exercise will be required, and full credit given. Prerequisites, French 103 and 106, 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. Rules of French versification. Prerequisite, French 106 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 class. Reading notes to be submitted whenever called for. 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. Course 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.

* Not offered in 1931-1932.

*161, 162, 163. *Eighteenth Century Literature.*

171, 172, 173. *Seventeenth Century Literature.* Lectures in French on the principal authors of this century. Assigned reading and reports. Prerequisites, French 6 and 9 or equivalent. Two credits a quarter; autumn, winter, spring. Chessex.

Teachers' Course in French. See Edu. 75K.

COURSES FOR GRADUATES ONLY

*201, 202, 203. *Middle French and Sixteenth Century.*

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 and winter; two credits, spring. Goggio.

*231, 232, 233. *History of Old French Literature.*

241, 242, 243. *French Historical Grammar.* Phonology, morphology, and some of the most common syntactical phenomena of the French language from 842 to the Renaissance. Open to graduates only. Course will be conducted in English if all do not easily understand French. Three credits a quarter; autumn, winter, spring. Frein.

251, 252, 253. *Seminar in Modern French Literature.* The work will be concentrated each quarter upon one author of the nineteenth or twentieth century. Prerequisites, four years of French and graduate standing. Two credits a quarter; autumn, winter, spring. Patzer.

281, 282, 283. *Seminar in Fifteenth and Sixteenth Century Literature.* The drama of the sixteenth century will be the field which will be especially studied. Prerequisites, four years of French and graduate standing. Two credits a quarter; autumn, winter, spring. Frein.

291, 292, 293. *Conferences for Thesis.* Graduates at work upon a thesis will arrange their conferences individually with the instructor in charge. Frein, Patzer.

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. Italian 1 is repeated in winter and Italian 2 in the spring. Courses 2 and 3 may be taken with 4 and 5, making two five-credit courses. Three credits a quarter; autumn, winter, spring. Goggio.

4, 5. *Reading Course for Beginners.* Reading of easy texts. Supplementary to courses 2 and 3. Italian 4 is repeated in the spring. Prerequisites, Italian 1 for 4; Italian 4 or the instructor's permission for 5. Two credits a quarter; winter, spring. Giuntioni.

*111, 112, 113. *Modern Italian Literature.*

* Not offered in 1931-1932.

121, 122, 123. *The Italian Novel*. History of the novel from its beginning. Prerequisite: Italian 3, or 2 with grade of A or B. Two to three credits a quarter; autumn, winter, spring. Goggio.

181, 182. *Dante in English Translation*. The Divine Comedy will be read and 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 C.*

*221, 222, 223. *Italian Literature of the XIII and XIV C.*

231, 232, 233. *The Works of Dante*, particularly the Divine Comedy. Two credits a quarter; autumn, winter, spring. Goggio.

*243. *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.

1-2, 3. *Elementary*. Each of the courses 1, 2, 3 is repeated each quarter. No credit will be given for Span. 1 until 2 has been completed. Five credits a quarter; autumn, winter, spring.

4, 5, 6. *Reading of Modern Authors*. Reading of some of the best works of the nineteenth century. 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.) Goggio.

101, 102, 103. *Advanced Composition and Conversation*. Prerequisite, Span. 9. Three credits a quarter; 101, 102, repeated each 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.

* Not offered in 1931-1932.

121, 122, 123. *The Novel*. The history of prose fiction in Spain from its beginning to the present day. Selected texts, lectures, collateral reading and reports. Prerequisite, Span. 101 or equivalent. Two credits a quarter; autumn, winter, spring. Wilson.

131. *Lyric Poetry*. The study of Spanish versification and the reading of some of the best lyrics. Prerequisite, Span. 101. Three credits; autumn. Garcia-Prada.

*141, 142, 143. *Spanish Drama*.

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, selected texts, collateral reading. Prerequisite, Span. 102. 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*. One of the greatest writers of the Golden Age, Lope de Vega, Cervantes, or Calderon, will be selected each quarter for special study. Prerequisite, Span. 119 or equivalent. Two credits a quarter; autumn, winter, spring. Garcia-Prada, Umphrey.

184, 185, 186. *Spanish American Literature*. Representative writings of Spanish American authors. Collateral reading and reports. Lectures. Prerequisite, Span. 102, or equivalent. Three credits a quarter; autumn, winter, spring. Umphrey.

Teachers' Course in Spanish. See Edu. 75Y.

COURSES FOR GRADUATES ONLY

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. Topics are assigned for special investigation and report. Five credits; winter. Umphrey.

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.

* Not offered in 1931-1932.

SCANDINAVIAN LANGUAGES AND LITERATURE

Denny Hall

Professor Vickner.

1-2, 3. *Elementary Swedish.* Grammar and reading; composition and conversation. Courses 1-2, 3 are so arranged that they may be taken with 4-5, 6, making a five-hour course. Three credits a quarter; autumn, winter, spring. Vickner.

4-5, 6. *Swedish Reading Course for Beginners.* Reading of easy texts. Supplementary to courses 1-2, 3, but may also be taken separately by students desiring a reading knowledge of Swedish. No previous knowledge of Swedish necessary. Two credits a quarter; autumn, winter, spring.

10-11, 12. *Elementary Norwegian-Danish.* Grammar and reading; composition and conversation. Courses 10-11, 12 are so arranged that they may be taken with 13-14, 15, making a five-hour course. Three credits a quarter; autumn, winter, spring. Vickner.

13-14, 15. *Norwegian-Danish Reading Course for Beginners.* Reading of easy texts. Supplementary to 10-11, 12, but may also be taken separately by students desiring a reading knowledge of Norwegian-Danish. No previous knowledge of Norwegian-Danish necessary. Two credits a quarter; autumn, winter, spring. Vickner.

20, 21, 22. *Norwegian-Danish Literature.* Representative authors will be read. Prerequisite, ability to read easy Norwegian or Danish. May be entered at the beginning of any quarter. Two credits a quarter; autumn, winter, spring. Vickner.

23, 24, 25. *Swedish Literature.* Representative authors in connection with a survey of the Swedish literature. Prerequisite, ability to read easy Swedish. May be entered at the beginning of any quarter. Two credits a quarter; autumn, winter, spring. Vickner.

103, 104, 105. *Recent Swedish Writers.* Representative writers of the nineteenth and twentieth centuries, including Strindberg, Fröding, Selma Lagerlöf. Prerequisite, relatively fluent reading knowledge of Swedish. May be entered any quarter. Two to four credits a quarter; autumn, winter, spring. Vickner.

106, 107, 108. *Recent Norwegian-Danish Writers.* Representative writers of the nineteenth and twentieth centuries are read, including Ibsen, Björnson, Kielland, Jacobsen, Hamsun, Bojer. Prerequisite, relatively fluent reading knowledge of Norwegian-Danish. May be entered any quarter. Two to four credits a quarter; autumn, winter, spring. Vickner.

109, 110, 111. *Modern Scandinavian Authors in English Translation.* Ibsen, Björnson, Strindberg, Selma Lagerlöf and Hamsun. Open to all. 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.* The principal writers of recent Scandinavian literature will be read. Lectures and discussion. No knowledge of the Scandinavian languages necessary. May be entered at the beginning of 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. Lectures and discussions. 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. This course is a continuation of courses 190-191, but may be taken separately. Two credits; spring. Vickner.

SOCIOLOGY

Physics Hall

Professors Woolston (Chairman), Steiner; Associate Professor Hayner; Instructor Hathway; Associates Guthrie, Coventry, Martin, Geoghegan.

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 advisors before selecting courses.

Sociology 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 must be taken by major students before electing special lines.

1. *Introductory Sociology.* A basic course in sociology which aims to introduce the student to factual material of the subject and to the technique of studying cultural change and social relations. (Juniors and seniors may substitute 150, General Sociology). Five credits; autumn, winter, spring.

Coventry, Geoghegan, Guthrie, Hayner, Martin.

55. *Human Ecology.* Factors and forces which determine the distribution of people and communities. A study of ecological concepts and processes; position, location, mobility, dominance, aggregation, segregation, centralization, invasion, succession. Materials fee, \$2. Five credits; autumn. Steiner.

56. *The Family.* The changing home with attention to the trends toward multiple dwellings and the suburbs; family and marriage customs among preliterate and modern peoples; family interaction and organization; analysis and treatment of domestic discord. Materials fee, \$2.50. Five credits; winter. Hayner.

57. *Child Welfare.* Rights of childhood to health, education, recreation, protection; measures now in use to secure them. Three credits; winter. Hathway.

* Not offered in 1931-1932.

61. *The Rural Community.* A study of the organization and activities of life in the open country. Review of investigations and consideration of means of amelioration. Five credits; spring. Steiner.

62. *Play and Leisure Time.* Theories and functions of play; recreation zones; areas and institutions; traditional and commercialized forms of leisure; social utilization of leisure time. Especially adapted to students of physical education. Materials fee, \$2. Three credits; spring. Hayner.

63. *Community Organization.* Social conditions and theories that underlie the modern community organization movement. Experiments and methods that have evolved to prevent disorganization. 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. Case studies of typical cities throughout the world. Should if possible be preceded by Soc. 55. Five credits; winter. Steiner.

66. *Group Behavior.* Why associated persons act in characteristic manner. Analysis of conditioning factors and collective response in typical social groups, crowds, assemblies, parties, sects, etc. Prerequisites, five hours psychology and five hours sociology. Five credits; autumn. Woolston.

67. *Urban Attitudes.* Development of habits and standards in cities. Circumstances and interests controlling urban groups; economic, political and cultural peculiarities. Prerequisites, five hours psychology and five hours sociology. Five credits; winter. Woolston.

68. *National Traits.* Traditional differences between peoples. Historic backgrounds and prejudice. Problems of assimilation and amalgamation in America. Prerequisite, five hours psychology and five hours sociology. Five credits; spring. Woolston.

*70. *Family Standards.*

81. *Social Control of Defectives.* Social factors involved and methods of dealing with physical defectiveness, feeble-mindedness and insanity. Field trips to local institutions. Three credits; autumn. Hayner.

*90. *Social Change.*

130. *Methods of Social Investigation.* Methods of planning, conducting and presenting results of investigations of communities, institutions, social conditions, personal and family history. Consideration will be given to such matters as the evaluation of the primary and secondary sources, the use of statistics, the limitations of the interview, the personal equation, checks on accuracy and the organization of material for reports. Five credits; autumn, spring. Coventry.

131. *Social Statistics.* Methods and sources for quantitative investigation, as applied to ethnography, demography, vital statistics, social maladjustment, and their related fields. Five credits; winter. Coventry.

140. *Population.* A study of growth, composition and distribution of world populations. Prerequisite, five hours sociology or five hours economics. Three credits; autumn. Steiner.

* Not offered in 1931-1932.

141. *Migration*. A study of human migrations, the factors determining them and the problems arising therefrom. Prerequisite, five hours sociology or five hours economics. Three credits; winter. Steiner.

142. *Race Invasion*. General survey of race invasion and the conditions associated therewith; characteristic types of invasion; competition, segregation and dispersion as phases of the invasion cycle. Special attention given to race invasion on the Pacific Rim. Prerequisite, five hours sociology or five hours economics. Fee, \$2. Three credits; spring. Steiner.

144. *Social Frontiers*. A study of demarcation between races, nations, classes, sects and parties; contact, defense and penetration of boundaries; lines of cleavage within communities. Prerequisite, 10 hours of sociology or equivalent. Three credits; autumn. Woolston.

145. *Assimilation*. The fusion of cultures; programs of nationalization; traditional and experimental methods of training for citizenship. Prerequisite, 10 hours of sociology or equivalent. Three credits; winter. Woolston.

146. *Co-operation*. Development of mutual aid in civilization; economic, political, and cultural forms; competition, monopoly and co-partnership; means of expanding federation; consensus and concurrence. Prerequisite, 10 hours 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, junior standing and Soc. 1, or 10 hours in social science and psychology. Five credits; autumn. Geoghegan.

*152. *Social Control*.

153. *Problems of Poverty*. History and ecology of poverty and relief. Individual and social causes underlying destitution. Modern methods of approach to problems of prevention and relief. Three credits; winter. Hayner.

154. *Administration of Social Agencies*. Open to seniors and graduates. Two credits; spring. Hall.

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*. Conditions associated with delinquency; history and methods of punishment; rehabilitation of the criminal; programs for the prevention of crime. Field trips to local penal institutions. Five credits; spring. Hayner.

157. *Social Pathology*. Causes and treatment of maladjustment with attention to such problems as vagabondage, commercial recreation, juvenile and adult delinquency. Not open to students who have had Soc. 57. Five credits; autumn. Hayner.

158. *Personality Problems*. Survey of the literature on personality; case studies of personality problems. Five credits; spring. Guthrie.

164. *Social Education*. Purpose content and method of courses intended to promote good citizenship. Critical discussion of programs and texts used in Washington schools. Recommended for teachers of social science subjects. Prerequisite, fifteen hours of social science. Two credits; spring. Woolston.

* Not offered in 1931-1932.

171-172-173. *Social Case Work*. Principles and methods of family case work. Processes in investigation, diagnosis and treatment of economic, medical and behavior problems. Two hours class work, twelve hours supervised field work with local agencies. Prerequisite, Soc. 64 or permission of instructor. Students may take any 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, 181, 182. *Research in Social Work*. Designed for students who are undertaking the intensive study of some problem in social work. Prerequisite, permission of instructor. Two credits each; autumn, winter, spring. Johnson.

*194. *History of Social Thought I: From Primitive Times to the Industrial Revolution*.

195. *History of Social Thought II: From the Industrial Revolution to Contemporary Times*. Prerequisite, 10 hours sociology or equivalent. Three credits; winter. Geoghegan.

196. *History of Social Thought III: Contemporary*. Prerequisite, 10 hours sociology or equivalent. Three credits; spring. Guthrie.

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.

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

Professors Kincaid, Guberlet; Associate Professor E. V. Smith; Assistant Professors Miller, Hatch; Associate Goodsell.

ZOOLOGY

1-2. *Elements of Zoology*. General review of zoological science, stressing the philosophic and economic aspects of the subject. Lab. fee, \$2. Five credits a quarter; autumn, winter, repeated winter, spring.

Kincaid, Hatch and Assistants.

* Not offered in 1931-1932.

3-4. *Pre-Medical Zoology*. For students entering a medical course. Lab. fee, \$2. 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. Lab. fee, \$2. 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. Lab. fee, \$2. Five credits; spring. Miller.

102. *Experimental Zoology*. An experimental study of the organism as a dynamic unit, including problems of development, growth and regeneration, and response to external factors. Prerequisite, Zool. 1-2 or 3-4. Lab. fee, \$2. Five credits; spring. Miller.

106. *Plankton*. Classification, adaptations and interrelationships of the microscopic fauna of the sea. Field work in Puget Sound. Prerequisite, Zool. 1-2. Lab. fee, \$2. Five credits; autumn. Kincaid.

107. *Parasitology*. Animal parasites. Prerequisite, Zool. 1-2 or 3-4. Lab. fee, \$2. Five credits; spring. Guberlet.

108. *Limnology*. Classification and interrelationship of the organisms found in lakes and streams. Field work in the neighboring fresh-water bodies. Prerequisite, Zool. 1-2. Lab. fee, \$2. Five credits; spring. Kincaid.

111. *Entomology*. The structure, classification and economic relations of insects. Prerequisite, Zool. 1-2 or equivalent. Lab. fee, \$2. Five credits; spring. Hatch.

**112. *Insect Morphology*. The structure and taxonomy of insects. Prerequisite, Zool. 111 or equivalent. Lab. fee, \$2. Five credits. Hatch.

121. *Microscopic Technique*. Methods of imbedding, sectioning and staining animal tissues. Prerequisite, Zool. 1-2 or its equivalent. Lab. fee, \$2. Three credits; winter. Guberlet.

125, 126. *Invertebrate Zoology*. The morphology, physiology, life history and habits of invertebrate animals, with special reference to the local marine fauna. Prerequisite, Zool. 1-2 or 3-4. Lab. fee, \$3.50. Five credits a quarter; autumn, winter. Miller.

127, 128. *Comparative Anatomy*. Comparative structure of the vertebrate animals. Prerequisite, Zool. 1-2 or 3-4. Lab. fee, \$3.50. Five credits a quarter; autumn, winter. Miller.

131. *History of Zoology*. The history of zoology during ancient, medieval and modern times. Prerequisite, thirty 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. Lab. fee, \$2. Three credits; autumn, winter, spring. Staff.

Teachers' Course in Zoology. See Edu. 75Z.

** Will be offered if a sufficient number of students elect the course.

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. Lab. fee, 50 cents per credit. 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. Lab. fee, \$3. Three credits; autumn, winter, spring. Guberlet.

PHYSIOLOGY

6. *Elementary Physiology*. Human structure and function, designed to meet the needs of students in pharmacy. Lab. fee, \$3. 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. Lab. fee, \$3. Five credits; autumn, winter, spring. Smith.

20. *Physiology for Hospital Students*. A special course for hospital students. Lab. fee, \$1.50. Three credits; autumn, winter, spring. Goodsell.

50. *Physiology*. Required of students majoring in physical education. Lab. fee, \$2. 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 to meet the requirements of students expecting to teach the subject in high school. Required of students majoring in nursing; recommended for students in dietetics and in sanitary science. Lab. fee, \$4. 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. Lab. fee, \$4. Five credits; autumn. Goodsell.

151-152-153. *Advanced Physiology*. Arranged for students in medicine and advanced students who wish to make a careful study of experimental methods. Prerequisite, Zool. 1-2, Chem. 23 and Phys. 3. Lab. fee, \$5. Five credits a quarter; autumn, winter, spring. Smith.

163. *Physiology of Metabolism*. An advanced course in metabolism. Lab. fee, \$4. Prerequisite, Physiology 7 or Zool. 2 or 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. Since then the summer work has grown with almost uninterrupted steadiness. During the summer quarter of 1930 there was a student body of 3,272 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.

By the four-quarter plan regular students are able to take their vacations during any quarter of the year, or by attending the four quarters each year they may complete their college course in three years. This is of special benefit to those who are going on for advanced professional training. Teachers find it possible to do a full quarter's work without interrupting their teaching, or by combining two summer quarters and the intervening year to do nearly two full academic years of study while losing only one year's salary.

Resources. The entire physical resources of the University are available to summer quarter 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 quarter 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 1932 may be completed on or before Tuesday, June 15. Students expecting to be in attendance during the second term only may register on or before Friday, July 23. Students living outside 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 during the Summer Quarter 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. The regular tuition fee of twenty-five dollars (\$25) is required of all students, and admits to all privileges of the summer quarter, except the Law School, certain physical education methods courses, special music courses requiring individual instruction, and laboratory courses. (See the statements of these courses of the special fees). No reduction of fees will be made because of late registration or early withdrawal.

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. The College of Liberal Arts provides Summer Quarter instruction 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 during the summer quarter to meet the needs of the increasing numbers of teachers who attend. Those who plan to obtain a degree, or a normal diploma, through the School of Education therefore find greatly enriched opportunities in the summer quarter.

College of Business Administration. An interesting curriculum is offered in the summer quarter for students who contemplate going into business. These courses are in the fields of accounting, commercial banking and credit administration, commercial teaching, economics, foreign trade, insurance, 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, offering an opportunity for more individual instruction; the laboratories are not so crowded, allowing a student to pursue his work with more comfort and speed; and the opportunities for field-trips about the campus and into the neighboring region are 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. Courses are offered for first, second, and third year students. In addition, the summer quarter 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. Summer quarter courses in journalism 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 in Library Science, in the summer of 1931, were for the express purpose of adding 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, in the summer quarter, if the interest is sufficient to warrant it.

Information. For bulletin of the summer quarter address the publications editor, University of Washington. For other information address Henry A. Burd, Director of the Summer Quarter.

UNIVERSITY OF WASHINGTON OCEANOGRAPHIC LABORATORIES

FRIDAY HARBOR, WASHINGTON

The Staff

Thomas G. Thompson, Ph.D...*Professor of Chemistry, and Director of the Oceanographic Laboratories*
 John E. Guberlet, Ph.D.....*Professor of Zoology*
 Robert C. Miller, Ph.D.....*Associate Professor of Zoology*
 Lyman D. Phifer, M.S.....*Assistant Director*
 George B. Rigg, Ph.D.....*Professor of Botany*
 Rex J. Robinson, Ph.D.....*Instructor in Chemistry*
 Clinton L. Utterback, Ph.D.....*Associate Professor of Physics*
 Mary Grier, B.S. in L.S.....*Librarian*
 Julius Hoverson, M.S.....*Curator, Friday Harbor Laboratories*

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 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.

This service was organized in 1912. More than thirty-five thousand students have been enrolled, a large number of whom have earned credits through extension study toward a university degree. Others have taken this work for the practical business values, greater professional and technical skills, and purely cultural satisfactions of wider reading and finer appreciations.

The Extension Service presents for 1931-32 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 |

About four hundred 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 correspondence may be taken by properly qualified students for credits toward a university degree. Applicants for enrollment wishing to take courses for credit should send their credentials for entrance to the University, with their application, if these credentials are not already on file with the Registrar of the University. Credit work is of course subject to all rules and regulations of the University that are applicable. The work must be thorough, must show creditable grade and must be completed within a reasonable time, which is estimated to be not more than one year for five credit courses and proportionally less for shorter courses.

These qualifications are clearly stated, so that there may be no disappointment from expectations that cannot be fulfilled of an easy road to a degree. Home study and evening classes are not such a road. The work is slow and laborious; but it is worth all the time and money that it costs if considered from the standpoint of its value in scholarship, the pleasure that may be had from this mode of using one's time, and the widening of the horizon of one's mind.

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. There-

fore, 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

Moderate fees have always been charged by the University of Washington for extension instruction. It is proper that the individual directly benefited should pay his part toward the support of this work. The following requirements and conditions should be thoroughly understood.

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 per credit hour. Extension courses cost, therefore: \$8 for a two-hour course; \$12 for a three-hour course; \$16 for a four-hour course; \$20 for a five-hour course.

HOME STUDY COURSES

The number and subjects of courses offered for Home Study vary from time to time. There are three hundred courses in nearly ninety subjects now organized. Many courses have been offered for several years; others are entirely new. All have been adjusted to the special needs of Home Study students.

Home Study Courses of Instruction. Anthropology, astronomy, botany, chemistry, 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.

HOME STUDY 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 Home Study courses 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 Home Study course while not in residence and desires to complete it after he begins 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 Home Study work has been done while in residence and also if the student's previous grades would not justify his carrying the number of hours of work that his residence plus his Home Study 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 fifteenth Graduate Medical Lectures were held July 13 to 17, 1931, inclusive.

FIRLAND COURSE 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. A two-year curriculum covering 22 credits of advanced University work 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 conducted the Eighth Graduate Nurses' Institute, July 7 to 11, inclusive.

OFFICE OF PUBLICATIONS

Commerce Hall

Westmoreland, Harriett.....*Publications Editor*
Freiberg, Bernice, B.A. (Jour.).....*Assistant*

All official publications of the University of Washington are issued under the direction of the publications editor.

The publications of the University consist of the University of Washington Publications, the publications of the Engineering Experiment Station, the Publications in Oceanography, and the University of Washington Bulletin. For a detailed list of these publications, address the office of publications.

The University of Washington Publications are issued in separate monographs and volumes, and contain the results of research work in various departments of the University. They include the following series: Anthropology, Fisheries (discontinued), Geology, Language and Literature, Mathematics, and The Social Sciences. These publications are offered in exchange for similar publications issued by universities, learned institutions and societies, and libraries. All matter sent in exchange should be addressed to the University Library. Inquiries regarding purchase of these publications should be addressed to the publications editor.

The Publications of the Engineering Experiment Station include bulletins of information and investigation concerning engineering and scientific problems. Requests for these publications should be made to the publications editor.

The Publications in Oceanography are based on the investigational work carried on at the Friday Harbor Station, and are issued at irregular intervals during the year. Orders for these monographs should be sent to the Director of the Oceanographic Laboratories, University of Washington.

The University of Washington Bulletin, General Series, includes the general catalogue and special announcements of each school and college, Summer Quarter bulletin, Extension Service bulletin, and the University Directory, each of which is issued annually. The general catalogue is limited to exchange purposes; the circulars of information are sent free on application to the Registrar of the University.

The Washington Historical Quarterly is issued at the University under the auspices of the Washington University State Historical Society, and is devoted to the history of the Pacific Northwest. For information, address the business manager, Washington Historical Quarterly, Library, University of Washington.

The University of Washington Forest Club Quarterly is published by the members of the Forest Club. For numbers of the Quarterly, address College of Forestry, University of Washington.

BIBLIOGRAPHY OF FACULTY PUBLICATIONS

The bibliography of faculty publications is listed in the last section of the Graduate School bulletin, issued as a separate bulletin.

DEGREES
BACHELOR'S DEGREES

COLLEGE OF LIBERAL ARTS

BACHELOR OF ARTS

August, 1929

Abella, Sebastian S.	Morgan, Anne Mae
Adami, Dorothy	Moulton, Helen Rebecca
Arndt, William Fred	Mundle, Alice Elizabeth
Babcock, Elizabeth Browning	Murray, Tom Dennis
Backus, Emmanell	Nelson, Wilma Wise
Beckett, Ernest Edgar	Neville, Jack Barrett
Bell, Emma Mabel	Nordquist, Elsa Elizabeth
Bolstad, Percy John	Ohlin, Augusta
Britell, Erwin Paul	Okada, Hito
Brown, Winston D.	Peak, Mabel E.
Butler, J. Longino	Phillips, Audrey E.
Byall, D. Wayne	Pierron, Richard Paul
Caldan, Hazel Geraldine	Plum, Lester Virgil (<i>summa cum laude</i>)
Cleveland, Walter Jones	Rapp, Mary Elizabeth
Congdon, Shirley A.	Sawyer, Dalza M.
Dingley, Henrietta	Schilplin, Louise Elise
Edris, Louise Lawton	Shaw, Albert T. H.
Fenton, Genevieve M.	Sheets, Lora C.
Fletcher, James Vertner	Soule, Nadine
Glesin, Dora	Stark, Jeannette
Gorham, Elizabeth Hills	Strong, F. Worthington
Grythman, Caroline	Tanner, Margit A.
Hack, George Perry	Taylor, Helen Frances
Hamlin, Phyllis Kathryn	Telford, Grace Kathryn
Harris, Eleanor Pauline	Thomas, Letty Kingsbury
Hirata, Charles	Victory, Randall M.
Hoelscher, William Carl	Weber, Irene H.
Holden, Eleanor Ross	Whitelaw, John W.
Jensen, Merrill Monroe	Williams, Jessie Alsea
Johnson, Elmer G.	Woods, Mary Ethel
Johnson, Rex Harold	Yun, Clarence Chao Kun
King, June Louise	
Miles, William Caruthers	

December, 1929

Becker, George J. (<i>magna cum laude</i>)	Horowitz, Meyer
Casper, Barry (<i>cum laude</i>)	Howay, Jack
Davidson, Lorna Effie	Kilworth, Wesley McCray
Gerber, Charlotte Busby (<i>cum laude</i>)	Kimball, William Alden
Halloran, Leroy James	MacLaughlin, Catherine
Hinckley, Martha Ann (<i>cum laude</i>)	Serrurier, Beulah
Hoglund, Olga Elvina	Taylor, Kathryn
	Van Cleve, Donald Ritchie
	Young, Reinsel C.

Graduates are listed according to the dates on which they received their degrees.

March, 1930

Acena, Casimiro Aruejo
 Ashby, Paul Flesher
 Cheesman, Hugh Franklin
 Clyde, Winona
 Feng, Yukon
 Fosseen, Neal Randolph
 Garrett, Alice
 Hillman, Belle
 Ho, I. Chao
 Katzenmeier, Rosalie Dorothy
 McPherson, Kenneth

Mudgett, Roberta
 Palmer, Frances Berenice
 Pelto, Ethel Pearl
 Powell, J. Theodore
 Rank, Carroll Price
 Sills, Vollie Marguerite
 Spencer, John W.
 Tuneish, Nellie Midori (*cum laude*)
 Underwood, Floyd Jensen
 Van Leuven, Vernon V.

June, 1930

Allen, Wendell Cranston
 Amos, Thomas Owen
 Andersen, Ruth Margaret
 Anderson, Virgil Victor
 Archer, Guerdon W.
 Armstrong, Donald W. (*magna cum laude*)
 Austin, Lucia Catharine
 Baker, Priscilla Nancy
 Ballaine, Francis Knight
 Barrett, Frederick W. M.
 Bartlett, Gladys Marion
 Baum, Catharine Lodema
 Benediktson, Herdis Gudrun
 Benediktson, Nordis Ingibjorg
 Berthon, Marcel Edward
 Beutel, Mary Gail
 Birdseye, Story
 Bishop, Jean Laurette
 Bjerke, Joseph P.
 Blumenfeld, Irwin S.
 Bogert, Geraldine
 Bolinger, John Randolph
 Borgeson, Anna Emelia
 Borgeson, Gerda Teresia
 Borgeson, Jennie Olivia
 Bowen, Charles Henry
 Bowen, Mary Elizabeth (*cum laude*)
 Bracken, Flavia Orissa
 Brady, Louise (*cum laude*)
 Bresnan, Rose A. (*cum laude*)
 Burton, John Howard
 Butler, Julia Carolyn
 Butterworth, Roy Scott
 Byrne, Mary Elizabeth
 Cartano, John Darwood
 Cass, Stephen Bruce

Cavender, Phyllis
 Collett, Margaret Lydia
 Connick, Edwina (*cum laude*)
 Coy, Loraine Anna
 Cram, Jack Randolph (*cum laude*)
 Cross, Marguerite Evelyn
 Culley, Maxine Merrida
 Culmsee, Corine
 Dahlen, Elizabeth May
 Daly, William
 Darrow, Willis Thayer
 Dawson, Orcena
 Dean, Hellen Elizabeth
 Dennis, Roy Gordon
 Dexter, Glenn Edward
 Dietz, Bernice
 Dilling, Helen Mae
 Donahoe, Francis Marion
 Downie, Grace Elizabeth
 Drake, Betty Dolores
 DuBois, Jeanette
 Duff, Alec
 Edwards, William Winans (*cum laude*)
 Emery, Margaret Olive
 Ernst, Eleanor
 Falkoff, Emma
 Faulkner, Christel Tamar Isobel
 Ferrell, Ruth Wilma
 Fickel, Doris
 Fields, Elise Grace
 Froude, Paul Edward
 Fry, Florence Ilene
 Gardner, Ruth Virginia
 Getty, Dorothy-Mae
 Glickman, Louis

- Grunbaum, Arthur J.
 Gustafson, Helen Amelia
 Hanna, Letah
 Harris, Peggy Jane
 Harron, Louise L.
 Harvey, Elsie Josephine
 Hicks, Retha Ann (*cum laude*)
 Hubert, Margaret Carey
 Hudson, Roberts D.
 Hull, Margaret
 Humphries, Joseph Orville
 Hurst, Rea Ruth
 Ingersoll, Russell Richard
 James, Ruth Carolyn
 Jennings, John Wendell
 Johnson, Florence E.
 Jorgensen, Betty Marie
 Kane, Helen Mabel
 Kane, Mary Patricia
 Keller, John Daniels
 Kellogg, John Albert
 Kelly, Jean Mary
 Kilworth, Ruth Jane
 Kleinlein, Vera E.
 Langdon, Bess Derr
 Larson, Harriet Helen
 Lasnier, Evelyn Lucile
 Lawton, Ruth Martha
 Lemp, Catherine
 Lewis, Margaret Ruth (*cum laude*)
 Lind, Carita Cecelia
 Livesley, Ethel Webb
 Logan, Marjorie Smith
 Love, Grover Allen
 Luckcrath, Carl Bertram
 Lutey, William Glen
 MacArthur, Kenneth Robert
 McCoy, Douglas Dallam
 McDonald, Phyllis (*cum laude*)
 McKnight, William Asbury Jr.
 McMath, Margaret Mildred
 McPherson, Lillian Adelle
 Manousos, Angelo John
 Mathewson, Nancy Urline
 Mattison, Helen Myrtle
 Mayo, Marjorie
 Meier, Ronald Wilson (*cum laude*)
 Merriam, Elizabeth Tannatt
 Merrill, Lannon
 Miller, Barry James
 Miller, Elma Langhorne
 Mitchell, Katherine Ehrman
 Mitchell, Mildred Janet
 Mulholland, Edward A. Jr.
 Murray, Alice Jane
 Myers, Mary Hocking
 Nagel, Sylvia Dorothea
 Nash, Betty Wilson
 Newhouse, Dean Scholfield
 Ogrosky, Grace Dorothy
 Oistad, George Carl
 Patton, Ruth Mary
 Pease, Howard Jerome
 Percy, Gretchen Marion (*cum laude*)
 Peterson, Marion Elizabeth (*cum laude*)
 Philbrick, Harold C.
 Potts, Helen Lea
 Preston, Helen Erma (*cum laude*)
 Price, Russell Smith
 Prince, James Everett
 Putnam, Stanley E.
 Raymond, Gertrude Emily
 Reed, Helen Kathrine
 Roake, Sarah Louise
 Robb, Betty Stewart
 Roberts, Eleanor Katherine
 Robertson, Frederick Kenneth
 Rohlf, Marcus Speckert
 Rosenberg, Dorothea Halo
 Ross, Joy Elinore
 Saloma, Sadie Sylvia
 Saunders, Mildred Vernon
 Scarbrough, Dorothee
 Schafer, Edward Peter
 Shagren, Margaret Pauline (*cum laude*)
 Shallit, Rebecca
 Shanahan, Daniel James
 Sheehan, Mary Isabel
 Sherley, Thela Lewis
 Shiek, Addison
 Simaton, Amelia Eugenie
 Simpson, Mary Elizabeth (*cum laude*)
 Smith, Richard Daniel
 Smith, Virginia Maxine
 Somers, Alice
 Spear, Marjorie
 Stratton, Doris Virginia (*cum laude*)
 Stub, Sylvia Antonia

Swedenburg, Genevieve Marie
 Tang, Wu
 Taylor, Martha Bon Durant
 Treuer, Robert Ferrel
 Tuttle, Mavis Jacqueline
 Van Patten, Theron Cordan
 Wager, Florence
 Wallin, Helen Dorothy
 Weaver, Letta Landis
 Welborn, Elizabeth Louise
 Wetherell, June Patricia

Wetherell, Russell (*cum laude*)
 Wheeler, Claire A.
 White, Lenore Elizabeth
 Whiteside, Ruth Harris
 Wightman, Lucille Jeannette
 Willingham, Irma Marian
 Wilson, Thelma L.
 Winters, Carolyn
 Wolgemuth, John Philip
 Yount, Reuel K.

COLLEGE OF SCIENCE

August, 1929

BACHELOR OF SCIENCE

Carter, Evelyn Leona Mettel
 Cooley, Charles Clarence
 Ferrera, Fernando Del Rosario
 Gettelman, Eugene
 Kiel, Henry

Krueger, Harold Arthur
 McElhiney, Jack Bernarr
 Richardson, Carl Thomas
 Silverglade, Alexander X.

BACHELOR OF SCIENCE IN CHEMISTRY

Doumani, Charles
 Greenwalt, Oliver Whitman

Hicks, John Frederick Gross, Jr.
 (*cum laude*)

BACHELOR OF SCIENCE IN HOME ECONOMICS

Heffron, Ethel Elvie
 Hulbush, Nora Louise
 McRoberts, Dona Irene

Priem, Virginia
 Smith, Lorna Jeanette
 Stitt, Margaret Norwood

BACHELOR OF SCIENCE IN MATHEMATICS

Lauer, Charles Eugene

BACHELOR OF SCIENCE IN NURSING

Atkins, Zilpah
 Laubscher, Edith

Maakestad, Carrie E.
 Schmidt, Ida Julia

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Hall, Lucille Sippel
 Hogart, Louise Marie

Johnson, Joseph Nicholas
 Jones, Elizabeth Dorothea

December, 1929

BACHELOR OF SCIENCE

Coombs, Howard Abbott	Smith, Frederick George
Lloyd, Lowell Clyde (<i>cum laude</i>)	

BACHELOR OF SCIENCE IN CHEMISTRY

Wall, Harold Cecil

BACHELOR OF SCIENCE IN HOME ECONOMICS

Barrington, Elisabeth Stantan	Mellinger, Martha J.
-------------------------------	----------------------

BACHELOR OF SCIENCE IN NURSING

Black, Gertrude Mildred

March, 1930

BACHELOR OF SCIENCE

Baggs, William Elwin Jr.	Koehne, Marion Priscilla
Crook, Clifton Allen	Schwager, Lewis Jr.
Effinger, William Lloyd	Shellenberger, John A.
Frizzell, Donald Leslie	

BACHELOR OF SCIENCE IN NURSING

Ritchie, Mary Allen

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Fouts, Margaret Irene

June, 1930

BACHELOR OF SCIENCE

Bice, Forrest Duane	Dickey, Frank Heald
Blackledge, Marjorie A.	Doi, Hanayo
Borden, Alice Lenora	Farrar, Elizabeth
Broz, William R.	Gellermann, Helen (<i>cum laude</i>)
Cooke, Dean E.	Gerriets, Dorothy Elizabeth
Copenhagen, Helen Marian (<i>cum laude</i>)	Hanson, A. George
Curtis, William Long	Hochfeld, Gertrude
	Houlton, Harold G.

Ingham, Thomas Reed (<i>cum laude</i>)	Samson, Victor J.
Johnson, H. Helena	Simmer, Edwin George
Kenyon, Margaret Thorp	Sizer, Edgar
McMullen, James Currie	Sorensen, Oscar Soren
Macrae, Donald Hanley	Sparkman, Donal Ross
Massie, Dorothy	Sweet, William Herbert (<i>summa cum laude</i>)
Monks, Eileen Adair	Van Arkel, Gerard Harvey
Nevitt, Donald M.	Watson, Wilbur Earl
Nordling, Margaret Ulrica	West, Wendell Bruns
Nuckols, Hugh Hunter	Wilhelm, Margaret Clarine
Ott, Anne V.	Zoet, August Gerrard
Peterson, Harold Octavius	
Pierce, James Reynolds	

BACHELOR OF SCIENCE IN ANATOMY

Swank, Roy

BACHELOR OF SCIENCE IN BOTANY

Berg, Alice May	Moller, Roland Samuel
George, Ruth Marie	Roberts, John Roderick
Harrison, Charles Howard	

BACHELOR OF SCIENCE IN CHEMISTRY

Ballard, Donald Arthur	Jolley, John Irving (<i>magna cum laude</i>)
Bargmeyer, Ernest Gerard	Steele, Julia Helen
Brown, Stephen Lincoln	Usher, Harlan K.
Flint, Einar Philip (<i>cum laude</i>)	Westfall, Marjorie Elgar
Johnston, William Redmond (<i>magna cum laude</i>)	

BACHELOR OF SCIENCE IN HOME ECONOMICS

Anderson, Alice Elizabeth	Lindsey, Flavilla Cleveland
Bean, Ruth Ida	Miller, Hortense Hickman (<i>cum laude</i>)
Berry, Marguerite Ellen	Myers, Helen Jackson
Bursell, Betty Marian	Potter, Lois Christina
Cleveland, Ruth A.	Pritchard, Margaret Hope
Cobb, Martha Alberta	Ramsay, Beth Templeton
Connelly, Martha Josephine	Shew, Edith Harriet
Cutler, Emily Sophrona	Spicer, Mildred Gertrude
Duckering, Margaret Grace	Stafford, Elizabeth
Ferriss, Marion O.	Suzuki, Sakae
Flint, Dorothy June	Thomsen, Clara Marie
Gregory, Janie Mary	Ward, Elizabeth
Grocock, Frances Elizabeth	Wickham, Lola Hazel
Horstman, Elizabeth Maria	Zeeuw, Anna I.
Hue, Ruth	Zipple, Hermina
Kirkwood, Marion Marie	

BACHELOR OF SCIENCE IN NURSING

Brown, Edith Lucille
 Loving, Eleanor
 Major, Georgia Elizabeth
 Sutherland, Anette Frideborg
(magna cum laude)

Tuttle, Aileen H.
 Upham, Florence
 Van der Werker, Edith
 Welsh, Marcelline Cecilia

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Babcock, Lola Katherine
 Jacobs, Lillian Frances
 Leak, Gladys Helen
 Lopp, Alice Marguerite
 Luch, Sarah Ellen

Marwood, Hazel E.
 Nelson, Laura Elizabeth
 Robinson, Dorothy Verne
 Shuirman, Neil
 Teitgen, Linda Estelle
 Zintheo, Irma Martha

BACHELOR OF SCIENCE IN PHYSICS

McKay, John Donald

BACHELOR OF SCIENCE IN ZOOLOGY

Choiniere, Doris Harriett

Eernisse, Frederick Arie

SCHOOL OF EDUCATION

August, 1929

BACHELOR OF ARTS IN EDUCATION

Anderson, Emmogene Powell
 Beaughan, Walter Irvin
 Benson, William P.
 Billings, Freda
 Bixby, Raymond Sumner
 Bovee, Edna Florence
 Boyd, Arthur James
 Byron, Blanche Beatrice
 Cummings, Rena Penfound
 Dannug, Leon Burgos
 Davidson, Mabel Louise
 Davis, Homer M.
 Deering, Esther A. *(cum laude)*
 Dunlap, Hellen May
 Edge, Ernest L.
 Ellis, Gertrude Beale
 Forrey, Ralph Claude
 Fouts, Edith Elinor
 Futter, Floyd Alfred
 Gillette, Cora Maude
 Greene, John Carper

Gunderson, Julia
 Hagist, Mary Lowe
 Hall, Unina Frances
 Hanson, Hilda Margaret
 Hawthorne, Matthew Le Roy
 Herrold, Betsy Ann
 Hilby, Sylvester Lyman
 Holcomb, Gladys Lenore
 Jayne, Clarence De Witt
 Jensen, Ethel Marie
 Johnson, Anna E. *(cum laude)*
 Johnson, Anna Josephine
 Johnson, Myrtle Lucille
 Klaus, Barbara Frances
 Laird, Helen *(magna cum laude)*
 La Monde, Aletha Persis
 Lommasson, Helen
 McKelvie, Mary Katherine
 Mark, Lee Els
 Merrick, Mina Marian
 Miner, Ruth Marcella

Murray, Mildred
 Offer, Lee Ilah Kirklin
 Ortman, Ruth
 Parsell, Eva Isobel
 Pence, Gertrude Belle (*cum laude*)
 Petterson, Clara M.
 Pettibone, Florence Woodrum
 Pfaff, L. Dale
 Pruner, Clinton Evans
 Quinn, Ellen G.
 Rathbun, Mary Enah
 Reeves, Lester L.
 Richardson, Jeanne Glomon

Richardson, Ruth Louise
 Robinson, Edward Carey
 Scott, Gertrude Eva
 Smith, Ethel Adoree
 Snyder, Tamzan Elizabeth
 Spaulding, Emilie Tempie
 Sturman, Clara Elizabeth
 Sutton, Colleen Chloe
 U'Ran, Ethel Lucile
 Wagner, Robert Strong
 Walters, Lela Helen
 Webster, Donald Hopkins
 Webster, Elmer Charles

BACHELOR OF SCIENCE IN EDUCATION

Attebery, Uri O.
 Bardon, Mary L.
 Buckley, Wallace T.
 Cooper, Omer Claude
 McMillan, Clifford R.

Nelson, James Melvin
 Phillips, Irene
 Purcell, Denis
 Treischel, Ben E.

December, 1929

BACHELOR OF ARTS IN EDUCATION

Brier, Grace Kjelstad
 Bryan, Helen Robeson
 Clark, Harold Lanning
 Flyzik, Kathreen
 Johnson, B. Pauline
 Lombardine, Estelle Cecelia
 Michelson, Helen Anna Elizabeth
 Minuth, Gertie E.

Mitchell, Eunice A. (*magna cum laude*)
 Potter, Allen Rollins (*cum laude*)
 Smith, Edward H.
 Tokuda, Tomi Nakayama
 Tolentino, Juan E.
 Waddell, James Howard

March, 1930

BACHELOR OF ARTS IN EDUCATION

Allmain, Anna Helen
 Andersgaard, Helen V.
 Barry, Victor Henry
 Bever, Virginia Margaret (*magna cum laude*)
 Froistad, Wilmer
 Fullenwider, Elmer Drummond
 Lawson, Gay

Martin, Viola E.
 Palo, Rosa Winifred
 Rhodes, Dorothy Marie
 Rogers, Nelson S.
 Soper, Paul Leon
 Suwalsky, Augusta
 Van Tilborg, Paul W.

BACHELOR OF SCIENCE IN EDUCATION

Dueber, Eve
 Gagan, Hannah Dale

Martin, Byrum L.

June, 1930

BACHELOR OF ARTS IN EDUCATION

Allison, Dorothy Frances Dunlap
 Arps, Johanna Roelofina
 Banta, Helen Dale
 Barber, Helen Stewart
 Bassford, Lois Elizabeth
 Baughman, Mabel
 Blackwell, Lorine F.
 Boye, Laura R.
 Brown, Martell W.
 Burke, Margaret E.
 Byers, Mary Frances
 Carson, Everal B.
 Cline, Dorothy Louise
 Epstein, Isadore
 Erickson, Howard E.
 Ferris, Donald Adair
 Goos, Lydia Sophie (*cum laude*)
 Gray, Merrill J.
 Gray, Violet M.
 Graybill, Mamie Luella
 Greibrok, Ida S.
 Guthrie, Alice Betty
 Hall, Esther Miriam
 Hanson, Dagny Theresa
 Harms, Hermine Alice
 Hendry, Ella Crummett
 Hills, Earle Charles
 Huggins, Johnnie Dare
 Hungate, Charles Richard
 Huston, Lois Maude
 Jindra, Martha Marie
 Jolly, Elma Moore
 Jones, Beatrice Angeline King
 (*magna cum laude*)
 Keveren, Kenneth Arthur
 Koen, Josephine Roycroft
 Laccoarce, Velma
 Long, Ruth Elizabeth

Lowry, Lorna Alida
 MacAulay, Dorine Helen
 McGibbon, Paul
 Mack, Elsie
 Martin, George Warren
 Medack, Frederick Carl
 Moore, Marion Ruth Burg
 Neelley, Florence Evelyn
 Neergaard, Christine A.
 Orndorff, Ruth
 Pace, Marguerite
 Pennick, Luella Blanche
 Peshak, Helen Dorothy
 Peters, J. Franklin
 Peterson, Martin
 Pitmon, Erma Eunice
 Quigley, Edwin Harris
 Risser, Dorothy Helen
 Rowe, W. Raymond
 Russell, Catherine Ann
 Sampson, Marian Ingeborg
 Shafer, Lulu
 Snyder, Juanita Jean
 Starr, Dorothea Eloise
 Starr, Glenn B.
 Stevens, James William
 Stonehouse, Edgar I.
 Taylor, Robert Martin
 Tilton, Alice Mary
 Tinkel, Gretchen
 Trousdale, Frances
 Verity, Arta Melanie (*cum laude*)
 Wagner, Howard P.
 Weimer, Claude N.
 Werner, Robert Donovan
 Whalen, Nellie G.
 Woodward, Alice Cecelia
 Zimmerly, M. Ruth

BACHELOR OF SCIENCE IN EDUCATION

Baisler, Edward Norman
 Brannan, Claude Fred
 Cook, Eugene Henry
 Cost, Helen Mary
 (*Sister Mary Josita*)
 Davis, James V.
 Davis, Martha Mary
 Erickson, Lillian Katherine

Gates, Mary M. Soper
 Hower, John H.
 Jensen, Myra Amanda
 Nelson, C. Maury
 O'Malley, Hazel
 Petroski, Edward Joseph
 Shoudy, Helen
 Van Woert, Ross Leighton

COLLEGE OF FINE ARTS

August, 1929

BACHELOR OF ARTS IN MUSIC

Lipscomb, Mary Louise

BACHELOR OF MUSIC

Bowen, Grace Louise
Evans, Jeannette Swain
Fasbender, Christina
(Sister M. Lamberta)
Ivarson, Oselio

Mitchell, Catharine Briscoe
Smith, Thomas Stewart Shaw
(*magna cum laude*)
Stover, Miriam Elizabeth
Weyer, Margaret Madeline

BACHELOR OF ARCHITECTURE

Palmaw, Ivan M.

BACHELOR OF FINE ARTS

Curtis, Elizabeth Long (*summa
cum laude*)

Smith, Doris L.
Ward, Marguerite Irma

BACHELOR OF ARTS IN DRAMATIC ART

Burmeister, Viola

December, 1929

BACHELOR OF ARTS IN MUSIC

Lesh, Anna Viola Amundsen

BACHELOR OF MUSIC

Henderson, Elizabeth Levitt
Holden, Helen Beryl

Houx, Mary Louise

BACHELOR OF ARCHITECTURE

Higuchi, Takashi R.

BACHELOR OF FINE ARTS

Joseph, Ruth Eleanor

*Nettleton, Ruth

*Died, September 1, 1929.

BACHELOR OF ARTS IN DRAMATIC ART

McDowell, Minnie Moore (*cum laude*) Seel, Kathryn Jane

March, 1930

BACHELOR OF MUSIC

Pullen, Mary Elizabeth

BACHELOR OF ARCHITECTURE

Wayland, Charles Varrell

BACHELOR OF FINE ARTS

Leiendecker, Margene Caryl Mines, Ray Jr.

BACHELOR OF ARTS IN DRAMATIC ART

Dean, Mary Jeannette

June, 1930

BACHELOR OF ARTS IN MUSIC

Carpenter, Richard Henry Scott, Mary Genevieve
Gillett, Jessie Madelene

BACHELOR OF MUSIC

Ahlquist, Helen Louise	Jones, Carol Lydia
Altose, Anne	McCauley, Mary Ambrose
Bourke, Edward Richard	McIntosh, Florine Harmon (<i>cum laude</i>)
Brennan, Catherine Grace	Moore, Edith Leona
Brodine, Sigrid Frances (<i>cum laude</i>)	Morck, Ethel Poole (<i>cum laude</i>)
Cook, Phoebe Martha	Nakaseko, Kazu
Daubenspeck, Eloise	Peters, Mildred
Dixon, Gordon A. (<i>cum laude</i>)	Rae, Helen Robina (<i>cum laude</i>)
Ferree, Edna Mae	Severance, Ruth Belle
Frost, Dorothy	Sievers, June Beatrice
Harrington, Sarah Catherine	Smith, Helen Jeannette
Hegg, Agnes Constance (<i>magna cum laude</i>)	Tinkcom, Dolores Georgiana
Hyatt, Doris Evaline	Welch, Helen Elizabeth
Jackson, Inez Elizabeth	Williams, Helen Virginia
Johnson, Mildred Emmelyne	

BACHELOR OF ARCHITECTURE

Engstrom, Gustaf Adolph
Graef, Edward L.

Tanaka, William Umekichi
Wolfe, Harry K.

BACHELOR OF FINE ARTS

Baker, Marion
Berryman, Mary Elizabeth
Boyd, Elizabeth Louise
Coburn, Helen Karine
Duncan, Marian Agnes
Fritch, Barbara Louise
Furuya, Kimi
Grubb, Vesta
Hanson, Corinne Antoinette
Hensley, Mercedes Hoover (*cum laude*)
Johnson, Virginia Caroline

Kelez, Ivan Marion
Kushi, Makie
Lindberg, Caroline
McPhaden, Kenneth Stanley
Montgomery, Clarice Aileen
Osterman, Ruth Genevra
Rupp, Mary Virginia
Striker, Kenneth Louis (*cum laude*)
Turnbull, George Crawford (*cum laude*)
Warren, Marajane

BACHELOR OF ARTS IN DRAMATIC ART

Callender, Shirley Lorraine
Callow, Kathryn Hettie
Diem, Harriet Virginia (*cum laude*)
Hertsche, Marjorie Adelaide

McGee, Elizabeth Virginia
Mattison, Elsie Ursula
Okamura, Hanna
Packard, Thelma Idella
Rigg, Charlotte

COLLEGE OF ENGINEERING

August, 1929

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Walter, Ralph Edwin

December, 1929

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Rivera y Dandan, Andres

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Rodgers, Roe Parker (*cum laude*)

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Hurlbut, Harold Charles

Olberg, Leon Norby

BACHELOR OF SCIENCE (COMMERCIAL ENGINEERING)

Kahan, Phillip Ezra

March, 1930

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

McKinlay, Frank

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Crowell, Robert Ashton
Gebo, Robert Roy

Lange, Bernice

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Abella, Roman V.
Eliassen, Eilert J.Gustanoff, Abe Louis
Halvarson, Thure

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Bell, Milo C.

Burlew, Everts P.

BACHELOR OF SCIENCE (COMMERCIAL ENGINEERING)

Froula, David Karl

June, 1930

BACHELOR OF SCIENCE IN AERONAUTICAL ENGINEERING

Adams, Harold Lamont
Cahill, Edward Thomas
Fligg, Claude MahanyStith, Richard Lewis
Widman, Nulsen T.

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Langsdorf, Gaynor Huggins (*cum
laude*)
Rauschert, Bryan L.Vaughan, Robert Wetherell
Zane, Rudolf Eugene

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Anderson, Edward Carew
Burley, Edwin Maurice
Carnefix, Aubrey Gibson
Gran, John RubenHansen, Carl Christian
Sato, Makoto
Stunkard, Clarence Russell

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Beeuwkes, Reinier Jr.	Nelson, John Magnus
Browne, Albert Alexander	Ostlund, Isadore Albion
Burrell, John Eden	Plymire, Reginald Floyd (<i>magna cum laude</i>)
Carlson, Reuben Jordan	Rowell, Irving Hubert
Dale, Eugene Edwin	Samson, Roy Stuart
Dawson, Lee Reno	Scott, Robert MacDonald
Engel, Ernest Dirck	Sperlin, Robert Benton
Garrison, Homer Ducat (<i>cum laude</i>)	Steele, Lloyd Edward
Hammer, Karl Elvin	Strohl, Wellington Macintosh (<i>cum laude</i>)
Henry, Everett Gerald	Thomson, Howard M.
Horn, Helmer Tory	Troja, John Baptiste
Kramer, Arthur	Waldorf, Lansing
Lund, Curtis Woodward (<i>magna cum laude</i>)	Wyman, Kimball Seymour
Miles, Edward Michael	
Miner, Vess Clayton	

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Bartells, Clifford Arthur	Scheumann, Van Roger
Clausen, Jensen C.	Smith, Ronald Bromley (<i>cum laude</i>)
Lundstrom, Herbert Frederick	Tenoso, Andres Tabangay
Remigailo, Vladimir	Warwick, Leslie Earl

BACHELOR OF SCIENCE (COMMERCIAL ENGINEERING)

Lindman, Bertram Herman	Lohman, Robert William
	McClarren, Donald Warren

COLLEGE OF MINES

August, 1929

BACHELOR OF SCIENCE IN CERAMIC ENGINEERING

Davis, Howard Smith

June, 1930

BACHELOR OF SCIENCE IN MINING ENGINEERING

Newell, John LeGore

BACHELOR OF SCIENCE IN METALLURGICAL ENGINEERING

Wood, Lewis Clarke

BACHELOR OF SCIENCE IN COAL MINING ENGINEERING

Pifer, Augustus Poindexter

COLLEGE OF FORESTRY

December, 1929

BACHELOR OF SCIENCE IN FORESTRY

Flanagan, George Clemans

von Kleist, Paul Adolph

March, 1930

BACHELOR OF SCIENCE IN FORESTRY

Fullington, Lloyd Henry
Longmoor, Justin Earl

Snider, William J.

June, 1930

BACHELOR OF SCIENCE IN FORESTRY

Condon, Robert Wilkins
Cortes, Rosario T.
Cox, Allen Howard
Drake, James D. L.
Dremolski, Louie Augustus
Evans, Roger Newton
Guerrero y Albano, Faustino
Klemme, Marvin
Larsen, Vernon O.
McClary, Harold WilliamMathey, Norris A.
Morris, William G.
Olson, Louis Garfield
Pike, Mark J.
Rapraeger, Elmer F. (*magna cum
laude*)
Rosted, Daniel Post
Webster, Lloyd Todd
Whiteside, John Mortimer

COLLEGE OF FISHERIES

BACHELOR OF SCIENCE IN FISHERIES

*December, 1929*Hinsdale, Edwin Crockett
Kolloen, Lawrence

Peterson, Robert Weeks

June, 1930

Brown, William H.
Hewitt, Harry Hiram Jr.
Holway, Theodore Woodruff

Kelez, George Bothwell
Ranney, Daniel Aubrey
Sognefest, Peter

COLLEGE OF PHARMACY

August, 1929

PHARMACEUTICAL CHEMIST

Louie, Stanley

BACHELOR OF SCIENCE IN PHARMACY

Louie, Stanley

December, 1929

PHARMACEUTICAL CHEMIST

Fitzmaurice, Bertrand Thomas

June, 1930

PHARMACEUTICAL CHEMIST

Brown, Harold Wesley
Chikata, Jack I.
Dennis, Melvin B.
Dingle, John Holmes
Fernandes, Joseph F.
Fletcher, Jennie Webb
Gray, Katherine Cady
Green, Harry George
Grieff, Henry Herman
Harriger, Ralph E.
Hogg, Herbert
Kelley, Albert Henry
Klapp, John C.
Kraft, Carl William
Leon, Albert H.

Lindstrom, Hilding C.
Lippman, Sam
Matz, Paul E.
Mozzone, Leonilda Teresita
Paul, Lyle J.
Quint, Harry
Reiman, Harold G.
Schroeder, Herman J.
Schwartz, Charles Jr.
Spear, Manton J.
Steele, John A.
Stowell, Harold E.
Swanson, Chester H.
Weber, Emanuel M.

BACHELOR OF SCIENCE IN PHARMACY

Borde, Ernest V.
Dingle, John Holmes (*summa cum laude*)
Fitzmaurice, Bertrand Thomas
Gooch, John Martin
Guth, Earl Peter

Hackney, Roscoe Devere
Johnson, Carl H.
Jones, Ivor (*cum laude*)
Kerns, Ray Francis
Layton, Edwin Gerald
McRory, Orville Beverly

Mohrman, John Jacob
 Patricelli, Liberino
 Peterson, Alvin Axel
 Quint, Harry
 Redman, Kenneth

Rutledge, James Adelbert
 Schwartz, Charles Jr. (*magna cum laude*)
 Smith, Harold B.
 Stowell, Leland W.

COLLEGE OF BUSINESS ADMINISTRATION

BACHELOR OF BUSINESS ADMINISTRATION

August, 1929

Anderson, Herman Alfred
 De Ruy, Norvelle Randle
 Dobson, Thomas Sutherland
 Dorris, William Washington Francis
 Gutherless, L. Edward Eaton
 Johnson, Mildred Elvira
 La Pierre, Albert
 Larkin, Edward John, Jr.
 Lee, Samuel Allen
 McGibbon, Donald Thomas
 McLaughlin, Don T.
 Montag, Adeline Catherine

Myers, Kenneth Gordon
 Nelson, Eugene
 Ness, Claudine Dolores (*cum laude*)
 Rose, Keith R.
 Ryan, Vera Kathleen
 Sprague, Harry Le Roy
 Tanigawa, James Tamejiro
 Tarlow, Benjamin David
 Thompson, Robert Kalenborn
 White, Ronald Cedric
 Williams, John Arthur

December, 1929

Bennett, Willard Blewett
 Brice, Vernon Vinton
 Campbell, John Frank
 Day, George Henry (*cum laude*)
 Edwards, Wilburn P.
 Erickson, Alfonso Emil
 Gardner, John Herbert
 Grant, Frank Warren
 Henning, Burt Thurbur
 Lindblad, Emil Charles

McCracken, George Russell
 McPherren, Berenice Margaret
 Moawad, George Monroe
 Parsons, Earl Franklin
 Schoettler, Robert Joseph
 Shain, Dorothy M.
 Stinson, Howard R. (*magna cum laude*)
 Stotler, Kenneth A.
 Walker, Omar A.

March, 1930

Beatty, Vera A.
 Crose, Wallace Briton
 Dewar, D. William
 Erickson, Lenard
 Fitzgerald, Wayne Anthony
 Flint, Herbert John
 Foster, William Thompson
 Gaston, Robert Dudley
 Johnstone, Florence May

Lockitch, Percy A.
 Meister, Roy E.
 Oakwood, Ellis Jake
 Snider, Ralph M.
 Takayoshi, Tomeo
 Wardall, Cedric Marshall
 Weber, Eugene C.
 West, John Talbot
 Woo, Henry Yuen Hai

June, 1930

- Albrecht, Herta Magdalene (*cum laude*)
 Asanuma, Takajiro
 Aust, Emil
 Awender, Peter John
 Baker, Marion Howard
 Battelle, Charles Neumann
 Berlin, Clare A.
 Bevington, W. B.
 Biggar, Howard Houston
 Blake, Elizabeth
 Blankenhorn, John William
 Boucher, Charles A.
 Boundy, James W.
 Bowen, Joseph E.
 Bray, Mary Clarke
 Brobst, Robert N.
 Bruketta, Frank Anthony
 Casler, Brannon Casselman
 Clampett, Lyle A.
 Clarke, Ellen Laura
 Clift, Walter Forman
 Colby, William Harmon
 Cole, Hawley I.
 Cunningham, Chester M.
 Davis, Donald H.
 Davis, Nathaniel Chilcott
 Davis, Neill James
 Davis, Paul H.
 Deering, Harold Pearson
 Douglas, James Bostwick
 Dunks, William Anders
 Dwyer, Mary Agatha
 Eggen, Edmond Walter
 Ehmsen, Temple V.
 Evans, Edwin Preston
 Farrell, Glenn Martin
 French, Dorothy Pearl
 Galvin, Vincent
 Gifford, Gilbert Lee
 Gleason, Robert Lane
 Gourlay, Arthur Charles
 Grant, Leslie Ronald
 Greely, Dorothy Virginia
 Green, Alexander Cecil
 Guernsey, Charles E.
 Hadley, Elsie-Jane (*cum laude*)
 Hamman, Roy George
 Harley, Clinton Frederick
 Harrington, Emmett Stephen
 Hartle, George Hudson
 Hartnett, Robert Arthur
 Hazel, George Ralph (*cum laude*)
 Horn, Carlyle Elwood
 Horne, Harold Harvey
 Huber, Walter (*cum laude*)
 Hulet, Howard Frank
 Hynd, Elizabeth
 Iino, Mitsuo
 Jamieson, Carl Ivan
 Jobs, Thomas Allen
 Johnson, Andrew Sloane
 Johnson, Roy W. H.
 Jones, Richard F. (*magna cum laude*)
 Kinney, Gladys Virginia
 Kriegel, Henry J.
 Krogstad, John C.
 Lee, Toon Yip Gunn
 Lei, Cheuk Lam
 Lepper, Mildred Elizabeth
 Levy, Richard Roger
 Loder, Adelaide Florence
 Longabaugh, Carol
 Low, Harold
 McCrary, John Edward
 Matthews, Bruce Alexander
 Miller, Dorothy Fay
 Morbeck, Donald Charles (*cum laude*)
 Morton, Keith Caldwell
 Neill, Lesgar LeRoy
 Nelson, Evelyn A.
 Neumann, Cameron M.
 Nicholson, Mary Irene
 Noble, Theron
 Olson, Clifford Charles
 Olson, Martin
 Parks, Stella Evelyn (*cum laude*)
 Peterson, Arthur Donnergard
 Pfisterer, Elsa (*cum laude*)
 Porter, Emil James
 Quickstad, Joel E.
 Rabel, Irvine Brownell
 Riordan, Leo Joseph
 Robinson, Roal Southard
 Ryan, John Frank
 Schatz, Lester Earl
 Seelye, Winthrop
 Sievers, Verne
 Simmons, Eva Marie
 Smith, Frank Percy
 Soule, Mary McCormick
 Stansbery, Norman Claude
 Stetson, John B. Jr.
 Stokes, Tom Henry
 Stradley, Muriel E.

Sweet, William Beck
 Tangney, Clarence W.
 Taylor, Henry Joe
 Tjosdal, Helen Thora
 Tobey, Clarence Orian
 Toner, John B.
 Treutle, Fred G.

Trotz, Harry Edward
 Tuey, Sue Horn
 Uran, C. Gordon (*cum laude*)
 Victoriano, Procopio Bumagat
 Wilson, William Wesley
 Worley, Roy Lee
 Worthington, Kenneth Taft

SCHOOL OF LAW

BACHELOR OF LAWS

August, 1929

Armstrong, William Grant
 Campbell, Clarence
 Henry, George Ercil

Littell, Norman Mather
 Morrison, Clayton William

December, 1929

Hudson, George Eddy
 Rivers, Ralph Julian

Robinson, Benjamin
 Stoneman, A. Vernon

March, 1930

Dunham, Margery Geneva

Zane, Simeon Lessard

June, 1930

Baer, Donald S. K.
 Banks, Newell Jeffers
 Benton, Hugh H. Jr.
 Birdseye, Story
 Booth, Laurence S. Jr.
 Buckingham, Floyd McEvoy
 Bunker, Evans Cranston
 Carey, Charles Robert
 Cavender, Phyllis
 Day, John Wallace
 Egan, T. E. G.
 Gaines, Donald Lamar
 Garbe, Frank Arthur
 Gibbon, Waldyn Lorain
 Heussy, Carl Rumsey
 Hile, Gerald Durham
 Holmes, Earl M.
 Hoof, Clifford E.
 Huffine, Sherman Robison
 Husted, Donald C.
 Iversen, Lyle Louis
 James, Frank Dexter Jr.
 Johnson, Edward Emmanuel
 Kaplan, Alexander

Kingston, Ross N.
 Landon, Herbert Oliver
 Lawwill, Donn F.
 Linville, Clyde W. Jr.
 Luckcrath, Carl Bertram
 Macdonell, James Donald
 Manning, Franklin Richard
 Martin, John Robert
 Mathewson, Mark Fredson
 Mickelwait, Lowell Pitzer (*cum laude*)
 Mifflin, Emmett Robert
 Miller, Alden Ewing
 Northstrom, Theodore Valdemore
 O'Leary, Alice
 O'Neill, Herald A.
 Orr, Paul H.
 Peters, Laurance Armistead
 Requa, Earl Francis James
 Savage, Anthony (*summa cum laude*)
 Scarbrough, Dorothee
 Shank, Corwin Philip
 Smith, George Eldon
 Suffel, Willis Ewart Gladstone

Taets van Amerongen tot Wouden-
berg, Baron Gerard
Tollefson, Thorwald Carl
Troy, Smith
Tunstall, Don M.

Underwood, Floyd Jensen
Webb, Stockton
Williamson, James William
Willis, Robert John

LIBRARY SCHOOL

BACHELOR OF SCIENCE IN LIBRARY SCIENCE

August, 1929

Anderson, Elizabeth Jane (*magna cum laude*)
Hale, Ruth Elinor (*magna cum laude*)

Johnson, Dorothy Anna
Olson, Karen Doris Adelia
Sittner, Mollie Lay (*cum laude*)
Woodrow, Jean

December, 1929

Sing, Marjorie Bruce

March, 1930

Gilchrist, Madeline (*magna cum laude*)

June, 1930

Andrews, Siri Margreta
Blekkink, Ada Elsie
Bollinger, Mary Elizabeth (*cum laude*)
Brehm, Jane Madeline
Brown, Amy Madeline
Burrows, Gladys Evelyn (*cum laude*)
Cavitt, Mary A.
Cooper, Dorothy Margaret
Crompton, Doris Isabel
Cull, Milda Patricia
Goodwin, Shirley
Grier, Mary Catharine
Grimes, Nancy Virginia (*cum laude*)
Groves, Elizabeth Alice
Hewitt, Ruth Elizabeth
Holland, Virginia Caroline
Hurry, Margaret Isobel
Jenson, Marian A.
Jones, Catherine E.
Kellogg, Ruth Adelaide
Kinsey, Helen Eloise
Kittell, Jeanette
Laude, Thelma Elizabeth (*cum laude*)

LeBlond, Nedra Lucille
Lehde, Constance
Lytle, Frankie A.
McLeod, Sarah H.
McPhee, Muriel Isabel
Mackey, Florence Etta
Madeley, Eleanor Frances
Merryweather, Leonard William
Mooney, Jeannette Pearl
Rosenberg, Naomi Sima
Sillers, Josephine Lois
Smith, Carolyn Elizabeth
Stoner, Helene Marian
Teetzel, Grace Eileen
Telford, Mary Reynolds
Todd, John Ronald (*magna cum laude*)
Trachsel, Eva Emma
Tuell, Anna Q. (*cum laude*)
Warner, Mary
Weaver, Mary Elizabeth (*cum laude*)
White, Frances Dunbar
Wilson, Doris Ellen (*cum laude*)
Wonderly, Lucile E.

SCHOOL OF JOURNALISM
BACHELOR OF ARTS IN JOURNALISM

August, 1929

Shryock, Antoinette

March, 1930

Curry, Elliot
Hubbard, Arelene Marie
Johnson, Robert E.
Levy, Harold P.

MacHarrie, Lindsay
Montgomery, Thomas
Paynton, Charles Schaefer
Tadlock, Ruth

June, 1930

Asher, Katharine
Barnhart, Thomas Frederick
Beam, Rene Avis
Dingwall, Archibald
Gordon, Blanche (*cum laude*)

Stone, Harold Riley
Thompson, Dorothy Calvin
Todd, Sarah

NORMAL DIPLOMAS

UNIVERSITY FIVE-YEAR NORMAL DIPLOMA

August, 1929

Anderson, Emmogene Powell	Hawthorne, Matthew Le Roy
Andrews, Emery E.	Heffron, Ethel Elvie
Attebery, Uri O.	Hegdahl, Doris Claire
Barnett, Elmer H.	Herrold, Betsy Ann
Bashaw, Kathryn Lois	Hilby, Sylvester Lyman
Beaughan, Walter Irvin	Holcomb, Gladys Lenore
Bell, Emma Mabel	Holden, Eleanor Ross
Benson, William P.	Hulbush, Nora Louise
Billings, Freda	Jayne, Clarence De Witt
Bixby, Raymond Sumner	Jensen, Merrill Monroe
Bowen, Grace Louise	Johnson, Anna E.
Boyd, Arthur James	Johnson, Joseph Nicholas
Buckley, Wallace T.	Johnson, Mildred Elvira
Burmeister, Viola	Johnson, Myrtle Lucille
Burns, Eugene Emanuel	Jones, Bernice
Byron, Blanche Beatrice	Jones, Elizabeth Dorothea
Campbell, Alexander	Kiel, Henry
Carlson, Helen E.	Klaus, Barbara Frances
Carter, Evelyn Leona Mettel	Laird, Helen
Cooley, Charles Clarence	Lake, Florence Melba Esstella
Cooper, Omer Claude	La Monde, Aletha Persis
Corbett, Helen Alberta	Lauer, Charles Eugene
Cunningham, Gertrude	Lauri, W. Armas
Davidson, Mabel Louise	Lommasson, Helen
Davis, Homer M.	McKelvie, Mary Katherine
Dingley, Henrietta	MacKintosh, Jean
Doumani, Charles	McMillan, Clifford R.
Dunlap, Hellen May	McRoberts, Dona Irene
Edge, Ernest L.	Mark, Lee Els
Edwards, Joseph O.	Miner, Ruth Marcella
Evans, Jeannette Swain	Morgan, Anne Mae
Fasbender, Christina	Murray, Mildred
(Sister M. Lamberta)	Nadeau, Eleanore
Faussett, Madge Gilmore	Nelson, James Melvin
Fenton, Genevieve M.	Offer, Lee Ilah Kirklin
Flanders, Winona	Olson, Katherine Eleanor
Fouts, Edith Elinor	Pence, Gertrude Belle
Froula, Olivia	Petterson, Clara M.
Futter, Floyd Alfred	Pettibone, Florence Woodrum
Gannon, Edward	Pfaff, L. Dale
Gelhaus, Dorothy Mary	Pierron, Richard Paul
Gillette, Cora Maude	Priem, Virginia
Glesin, Dora	Prochowska, Jadwiga
Gorham, Elizabeth Hills	Pruner, Clinton Evans
Green, Norman E.	Pugsley, Walter H.
Greene, John Carper	Purcell, Denis
Gunderson, Julia	Quinn, Ellen G.
Hagist, Mary Lowe	Rapp, Mary Elizabeth
Hall, Lucille Sippel	Rathbun, Mary Enah
Hamlin, Phyllis	Reeves, Lester L.
Hanson, Hilda Margaret	Richards, Ralph Riley
Harris, Eleanor Pauline	Richardson, Carl Thomas

Richardson, Jeanne Glomon
 Richardson, Ruth Louise
 Robinson, Edward Carey
 Scott, Gertrude Eva
 Shepherd, Alyce E.
 Smith, Lorna Jeanette
 Snyder, Tamzan Elizabeth
 Spear, Helen Elizabeth
 Sprague, Harry Le Roy
 Stewart, Daisy Johnson
 Stitt, Margaret Norwood
 Stover, Miriam Elizabeth
 Sturges, Beatrice Evelyn
 Sturman, Clara Elizabeth
 Sutton, Colleen Chloe

Tanner, Margit A.
 Taylor, Helen Frances
 Telford, Grace Kathryn
 Thomas, George William
 Treischel, Ben E.
 U'Ran, Ethel Lucile
 Wagner, Robert Strong
 Walters, Lela Helen
 Weber, Irene H.
 Webster, Donald Hopkins
 Webster, Elmer Charles
 Weyer, Margaret Madeline
 Whalley, Theodosia
 Wilson, Olene

December, 1929

Barrington, Elisabeth Stantan
 Brier, Grace Kjeldstad
 Bryan, Helen Robeson
 Clark, Harold Lanning
 Cook, Florania Mae
 Flyzik, Kathreen
 Gish, Ira Montgomery
 Henderson, Elizabeth Levitt
 Holden, Helen Beryl
 Houx, Mary Louise
 Johnson, Anna Josephine
 Johnson, B. Pauline
 Lang, Harold A.
 Lombardine, Estelle Cecelia
 McDowell, Minnie Moore

MacLaughlin, Catherine
 McPherrren, Berenice Margaret
 Mellinger, Martha J.
 Michelson, Helen Anna Elizabeth
 Minuth, Gertie E.
 Moawad, George Monroe
 Pence, Omer Othman
 Potter, Allen Rollins
 Serrurier, Beulah
 Smith, Edward H.
 Smith, Frederick George
 Stipek, Gladys Ruth
 Taylor, Kathryn
 Waddell, James Howard

March, 1930

Allmain, Anna Helen
 Andersgaard, Helen V.
 Ashby, Paul Flesher
 Barry, Victor Henry
 Clyde, Winona
 Crook, Clifton Allen
 Dean, Mary Jeannette
 Denny, Marion Katherine
 Dueber, Eve
 Froistad, Wilmer
 Fullenwider, Elmer Drummond
 Gagan, Hannah Dale

Gross, Elizabeth Gloor
 (Sister Mary Alexander)
 Katzenmeier, Rosalie Dorothy
 Lesh, Anna Viola Amundsen
 Martin, Byrum L.
 Martin, Viola E.
 Palo, Rosa Winifred
 Pelto, Ethel Pearl
 Pullen, Mary Elizabeth
 Sills, Vollie Marguerite
 Walker, Norman Eugene
 Williams, Helen G.

June, 1930

- Albrecht, Herta Magdalene
 Allen, Wendell Cranston
 Allison, Dorothy Frances Dunlap
 Anderson, Virgil Victor
 Armstrong, Donald W.
 Arps, Johanna Roeloeffina
 Babcock, Lola Katherine
 Baisler, Edward Norman
 Baker, Priscilla Nancy
 Banta, Helen Dale
 Barber, Helen Stewart
 Bartlett, Gladys Marion
 Bassford, Lois Elizabeth
 Baughman, Mabel
 Benediktson, Herdis Gudrun
 Benediktson, Nordis Ingibjorg
 Berg, Alice May
 Berry, Marguerite Ellen
 Bever, Virginia Margaret
 Bjerke, Joseph P.
 Blackwell, Lorine F.
 Bogert, Geraldine
 Borgeson, Anna Emelia
 Bourke, Edward Richard
 Bowen, Mary Elizabeth
 Boye, Laura R.
 Brannan, Claude F.
 Brennan, Catherine Grace
 Bresnan, Rose A.
 Brodine, Sigrid Frances
 Burke, Margaret E.
 Bursell, Betty Marian
 Choiniere, Doris Harriett
 Cline, Dorothy Louise
 Colby, William Harmon
 Connick, Edwina
 Cook, Eugene Henry
 Cook, Phoebe Martha
 Copenhagen, Helen Marian
 Cost, Helen Mary
 (Sister Mary Josita)
 Coy, Lorraine Anna
 Cross, Marguerite Evelyn
 Cutler, Emily Sophrona
 Davis, James V.
 Davis, Martha Mary
 Dawson, Orcena
 Dean, Hellen Elizabeth
 Dennis, Roy Gordon
 Diem, Harriet Virginia
 Dietz, Bernice
 Doi, Hanayo
 Drake, Betty Dolores
 Duncan, Marian Agnes
 Ellis, Gertrude Beale
 Epstein, Isadore
 Erickson, Howard E.
 Faulkner, Christel Tamar Isobel
 Ferree, Edna Mae
 Ferris, Donald Adair
 Fields, Elise Grace
 Flint, Dorothy June
 Fry, Florence Ilene
 Gates, Mary M. Soper
 Gellermann, Helen
 George, Ruth Marie
 Gerriets, Dorothy Elizabeth
 Getty, Dorothy Mae
 Gillett, Jessie Madelene
 Glass, Samuel Nevin
 Goos, Lydia Sophie
 Gordon, Blanche
 Gray, Merrill J.
 Gray, Violet M.
 Graybill, Mamie Luella
 Greely, Dorothy Virginia
 Greibrok, Ida S.
 Grubb, Vesta
 Gustafson, Helen Amelia
 Hall, Esther Miriam
 Hanson, Dagny Theresa
 Harrington, Sarah Catherine
 Harris, Peggy Jane
 Harron, Louise L.
 Hendry, Ella Crummett
 Hertsche, Marjorie Adelaide
 Hills, Earle Charles
 Holway, Theodore Woodruff
 Hower, John H.
 Hue, Ruth
 Hull, Margaret
 Hungate, Charles Richard
 Huston, Lois Maude
 Hyatt, Doris Evaline
 Jackson, Inez Elizabeth
 Jacobs, Lillian Frances
 Jindra, Martha Marie
 Johnson, H. Helena
 Johnson, Mildred Emmelyne
 Jolly, Elma Moore
 Jones, Beatrice Angeline King
 Jones, Carol Lydia
 Jorgensen, Betty Marie

Kane, Mary Patricia
Kenyon, Margaret Thorp
Keveren, Kenneth Arthur
Kirkwood, Marion Marie
Kleinlein, Vera E.
Koehne, Marion Priscilla
Koen, Josephine Roycroft
Kolloen, Lawrence
Laccoarce, Velma
Lawton, Ruth Martha
Leak, Gladys Helen
Learned, Allan Munford
Lemp, Catherine
Lewis, Margaret Ruth
Lind, Carita Cecelia
Lindsey, Flavilla Cleveland
Long, Ruth Elizabeth
Lopp, Alice Marguerite
Lowry, Lorna Alida
Luch, Sarah Ellen
MacAulay, Dorine Helen
McGee, Elizabeth Virginia
McGibbon, Paul
McGuire, Grace A. Peppett
McIntosh, Florine Harmon
Mack, Elsie
Martin, George Warren
Marwood, Hazel E.
Massie, Dorothy
Medack, Frederick Carl
Miller, Dorothy Fay
Miller, Hortense Hickman
Mitchell, Mildred Janet
Monks, Eileen Adair
Moore, Edith Leona
Moore, Marion Ruth Burg
Myers, Helen Jackson
Myers, Mary Hocking
Neelley, Florence Evelyn
Nelson, Evelyn A.
Nelson, Laura Elizabeth
Nelson, C. Maury
Nordling, Margaret Ulrica
Ogrosky, Grace Dorothy
Okamura, Hanna
O'Malley, Hazel
Orndorff, Ruth
Pace, Marguerite
Packard, Thelma Idella
Patton, Ruth Mary

Pennick, Luella Blanche
Percy, Gretchen Marion
Peshak, Helen Dorothy
Peters, J. Franklin
Peters, Mildred
Peterson, Marion Elizabeth
Peterson, Robert Weeks
Petroski, Edward Joseph
Pitmon, Erma Eunice
Pritchard, Margaret Hope
Quigley, Edwin Harris
Rae, Helen Robina
Rigg, Charlotte
Risser, Dorothy Helen
Roake, Sarah Louise
Roberts, Eleanor Katherine
Roberts, John Roderick
Robinson, Dorothy Verne
Ross, Joy Elinore
Rowe, W. Raymund
Saloma, Sadie Sylvia
Severance, Ruth Belle
Shagren, Margaret Pauline
Shoudy, Helen
Shuirmann, Neil
Sievers, June Beatrice
Simmons, Eva Marie
Snyder, Juanita Jean
Somers, Alice
Starr, Dorothea Eloise
Starr, Glenn B.
Steele, Julia Helen
Stevens, James William
Stonehouse, Edgar I.
Stratton, Doris Virginia
Stub, Sylvia Antonia
Taylor, Robert Martin
Teitgen, Linda Estelle
Tilton, Alice Mary
Tinkcom, Dolores Georgiana
Tinkel, Gretchen
Trousdale, Frances
Tuttle, Mavis Jacqueline
Usher, Harlan K.
Van Tilborg, Paul W.
Van Woert, Ross Leighton
Wager, Florence
Wagner, Howard P.
Weimer, Claude N.
Welch, Helen Elizabeth
Werner, Robert Donovan
Westberg, Frederick H.

Whalen, Nellie G.
 Wheeler, Claire A.
 Wickham, Lola Hazel
 Wilhelm, Margaret Clarine

Williams, Helen Virginia
 Wilson, Thelma L.
 Woodward, Alice Cecelia
 Zeeuw, Anna I.
 Zimmerly, M. Ruth

UNIVERSITY LIFE DIPLOMA

August, 1929

Akin, Cecilia Eileen
 Akin, Margaret Agnes
 Alexander, Frank E.
 Anderson, Ruth Agda
 Arend, Harry O.
 Arlander, Ruth Augusta
 Bailor, Wallace Floyd
 Beatty, Vera J. Maxwell
 Bell, Mildred
 Bernards, Margaret Marie
 Bird, Emma Marie
 Blue, Ellen Eugenia
 Boone, Julia Louise
 Bremner, Raymond Wilson
 Brossoit, Havana
 Bruff, Ettie Julia
 Busch, Vera
 Butt, Florence Mildred
 Campbell, Ernest William
 Carlson, Mable Ann
 Chumlea, Leland Hood
 Clemmer, Ruth
 Cone, Dwight Harthan
 Cooley, Zoe L.
 Coyne, Sophie
 Davis, Mercie I.
 de Heus, Margaret Rachel
 Donahue, Alfred Bernard
 Dupuis, Margaret
 Durrwachter, Irma Martha
 Eades, Beulah Agnes
 Earnest, Robert Roy
 Engdahl, Selma
 Eriksson, Archie
 Estep, Amy Josephine
 Evans, Earl Huston
 Everett, Pauline O.
 Finke, Mabel Lerene
 Garland, Cathran Elizabeth
 Gross, Katherine J.
 Guthrie, Iris Barbara
 Haase, Albert Paul
 Hall, Helen M.
 Hambleton, Edith Louise
 Harter, Genevieve Wells
 Hatch, Charles Edward
 Hatley, Porter J.
 Herrick, Winifred Leigh

Hills, Carlotta
 Hodge, James W.
 Hornstra, Fred Harry
 Hughes, Catherine Anna
 (Sister Mary Frances Clare)
 Hunt, Ernest Russell
 Jacobson, Olga G. L.
 Johnson, Carl Gustaf
 Johnson, Vernon Berthrand
 Jones, Ione Deane
 Kilkenny, Mable Reynolds
 Kimple, William A.
 King, James G.
 King, John Lawrence
 Lawler, Loretta
 Lee, Evelyn Rita
 Lind, Anna Regina
 Loughead, Eleanore Marguirite
 Lund, Margaret Argall
 McCabe, Helen Dales
 McConihe, Ruth Noyes
 McDonald, Vernon Charleton
 McGibbon, Eileen
 McKay, Alice
 MacLaughlin, Margaret
 MacNaughton, Ellen
 Madison, Lillian
 Maguire, Josephine
 (Sister Mary Joan)
 Meyer, Edward A.
 Miller, Mervyn Bernard
 Minter, Laurabelle
 Moran, Lydia A. Woodbury
 Morris, Fay Booker
 Neely, Suella Philippa
 Nelson, Olga Amelia
 Newstrom, Nellie Heron
 Nicholson, Leo S.
 Odgers, George Allen
 O'Leary, Eileen
 Parke, Charles G.
 Patch, Della J.
 Patterson, Bernice Lillian
 Peterson, Edith N.
 Peterson, Ida G.
 Philippi, Herbert
 Phillips, Deral E.
 Puette, Raymond V.

Pugsley, Stella E.
 Puymbroeck, Lea
 Quass, Mabel Martha
 Rantz, Frederick Albertson
 Reed, Elizabeth Margaret
 Reynnells, Lois Katherine
 Rognan, Esther B.
 Ross, Lemuel
 Rothaus, Marie
 (Sister Rose de Lima)
 Rowe, Abbie Elizabeth
 Rutherford, George

Skibness, Marie Bertine
 Smith, Luella Elouise
 Stephens, Inga A.
 Sullivan, Gladys Krogstad
 Sunnell, Bertha A.
 Turnbull, Fred Archie
 Ward, William Eugene
 Wells, Dorothy Brownlow
 Whitcomb, Alice Elizabeth
 White, Dorothy R.
 Wood, Hazel Elethier
 Wynstra, Wieber

December, 1929

Armstrong, Harriet Elizabeth
 Boyker, Maxine Marie
 Branson, Margaret Clancy
 Brower, Marie K.
 Burnett, Alta Hazel
 Christy, Dagmar Carola
 Cundiff, Velda Pauline
 Farrar, Mayme

Hanson, Mildred Moore
 Hardwick, Francis Tiley
 Lawen, Amalia R.
 Lee, Burling Vincent
 Leonard, Eleanor Hoppock
 Rahskopf, Frances Jordan
 Sheehan, Paul Vincent
 Stowell, S. Lillian

March, 1930

Ashton, Philip Frederick
 Dodge, Elva Mabel
 Dunbar, Helen Frances
 Hackett, Clara Allison
 Kelly, M. Kathryn
 Kern, Charlotte Helen
 Knight, Rebecca Scott

Looney, Hestelle Springer
 Muir, Mary
 Nelson, Miriam Selby
 Plank, Faye Marie
 Scoville, June Idyline
 Verhamme, Evelyn M.

June, 1930

Anders, Bertha Irene
 Anderson, John Adolph
 Andrews, Harriett M.
 Black, Dorothy Leone
 Bravender, Elma Margaret
 Carstens, Lillian M.
 Crawford, Roberta Margaret
 Dahlberg, Edith M.
 Fraser, Edna Mary
 Green, Marvel Josephine
 Greider, Phebe Ector
 Himes, Velma V.
 Hurley, Coila P.

Kennedy, Elizabeth
 Kimball, Stanley
 Kochevar, Dorothy L.
 Lowman, Vivien Guy
 Lundy, Oliver G.
 Nardin, Alphonse Charles
 Peterson, Amy Kathryn
 Proelss, Maurine
 Sennes, Gertrude J.
 Sullivan, Robert Edward
 Swanson, Myrtle Lenea
 Taylor, Chester Alban

CERTIFICATE IN PUBLIC HEALTH NURSING

August, 1929

Berg, Anna Catherine
Hansen, Helene
Harris, Mary C.
Joyce, Ellen
Laubscher, Edith
Levy, Ada
Murphy, Constance L.

Mutch, Lenore
Olson, Mary Stanton
Pings, Edna Shryack
Robinson, Wealthy Ann
Ryan, Aimee Margaret
Schuler, Sarah Eleanor
Silvernale, Jane C.

December, 1929

Andrews, Bertha Elinor
Bailey, Florence Miriam
Black, Gertrude Mildred
Blixrud, H. Marie
Bryant, Nellie Marie
Day, Martha Rubie
Flugum, Ida R.
Harkonen, Aina Mary

Heisterhagen, Else Dorothee
Holmes, Ida Mae
Ober, Elizabeth Kemble
Schedel, Marion Ponder
Scott, Ruth Boyer
Shepersky, Lucille Blanche
Swafford, Ruth Nelson
Wright, Alice Nora

March, 1930

Bloom, Alyce E.
Crowell, Eva Lynn
Denton, Vida Matthews
Fulton, Martha

Golley, A. Winnifred
Harrison, Mary Williams
O'Callaghan, Lillian
Ritchie, Mary Allen

June, 1930

Condon, Lillian M.
Ekvall, Elsie Adelaide
Forney, Elizabeth Fern
Franz, Viola A.
Goplen, Olga
Huffman, Margaret Mavor
Jarvimaki, Ella Florence
Kuester, Esther Lydia

Lindman, Clara
Moses, Leta Marie
Oliver, Grace Agnes
Quist, Anne Christine
Reese, Agnes Marie
Simpson, Margaret Beulah
Storms, Garnet Runkel
Upham, Lillian E.

HONOR GRADUATE IN LAW

Mickelwait, Lowell Pitzer

ADVANCED AND PROFESSIONAL DEGREES

MASTER OF ARTS

Margaret Agnes Akin (Education)

B.A. in Ed., University of Washington, 1923

Thesis: Social Valuations of Two Hundred Three Moving Pictures

Julia Elizabeth Allehoff (English)

(Sister Mary Alicia)

B.A., St. Mary's College, 1906

B.A., University of Washington, 1925

Thesis: The Influence of the Paston Letters on Stevenson's *The Black Arrow*Henrietta Alexandrine Ramage Anderson^D (Education)

B.A., Queen's University, 1925

Thesis: A Study of the Apparent Relationship of Intelligence Quotient to Success in a High School of North Vancouver, British Columbia

Philip Frederick Ashton^A (Education)

B.A., University of Washington, 1926

Thesis: An Investigation of Five Systems of Handwriting Taught in the Schools of the State of Washington

Elmer Haron Barnett^M (Economics)

B.S., Southwest State Teachers College, 1926

Thesis: An Analysis of Labor Turnover in Specific Industries from the Standpoint of the Employee

Nettie Ethel Bayley (French)

B.A. University of Washington, 1926

Thesis: The New Source of Nericault Destouches' *Le Tresor Cache*Alvar Jacob Beck^A (History)

B.A., College of Puget Sound, 1928

Thesis: Homestead Legislation, 1862-1891

Hazel Lamar Bell^D (English)

B.A., University of Washington, 1928

Thesis: Mark Twain's Pessimism

Fred Clayson Blanchard^A (English)

B.A., University of Washington, 1926

Thesis: Some Political Beliefs of Philip Massinger

Doris Sylvia Bowker (English)

B.A., University of Nebraska, 1927

Thesis: A Comparative Study of Three English Versions of the Apollonius of Tyre Story

Lorna May Buchanan^M (History)

B.A., University of Washington, 1924

Thesis: History of the Fur Seal Industry in the Pribilof Islands

Nancy Buckley^A (French)

B.A., University of Washington, 1926

Thesis: Some Sources of Cyrano de Bergerac's *La Mort D'Agrippine*

Estill Virgil Cain (History)

B.A. in Ed., Washington State College, 1924

Thesis: The Career of Peter Hardeman Burnett

Chin Te Chang^D (Political Science)

B.A., Peking University, 1927

Thesis: An Analytical Study of the Foreign Treaties of China

The persons whose names are followed by the superior letters A, D, M received their degrees in the quarters of 1929-1930 ending in August, December and March respectively; all others in June, 1930.

Mitchell Vaughn Charnley^M (Journalism)

B.A., Williams College, 1919

Thesis: A History of Sigma Delta Chi

Charlotte Frances Condit^M (English)

B.A., University of Washington, 1922

Thesis: The Genesis and Development of Whittier's Poetical Theories

Isabel Donkin Cooper^A (English)

B.A., University of Washington, 1928

Thesis: A Translation of Selected Chapters from Louis Cazamian's *Carlyle*

Hazel Alice Cowals^A (English)

B.A., University of Washington, 1914

Thesis: The Subject Matter of Junior College English

Leila Buckman Cramer^P (French)

B.A., University of Washington, 1928

Thesis: Daily Life of Fifteenth Century France as Disclosed by the Mysteries

Bernice Acors Cutler^A (English)

B.A., University of Washington, 1927

Thesis: The Political Novel in America from 1892 to 1903

Noah Cleveland Davenport^A (History)

B.A., University of Washington, 1914

Thesis: The Ambassadorship of Walter Hines Page

John Wesley Davidson (Education)

B.S., James Millikin University, 1907

Thesis: A Study of the Feasibility of Establishing a System of Junior Colleges in the State of Washington

Rosamond Adams Davis^A (Journalism)

B.S., Teachers College, Columbia University, 1918

Thesis: High School Journalism

Clarence Elmer DeBord^A (Education)

B.A., University of Nebraska, 1915

Thesis: The Elementary Private School

Ruby Lois Dillon^A (Education)

B.A., College of Idaho, 1919

Thesis: A Survey of Incidental Vocational Information Possessed by Pupils in the Secondary Schools of Bellingham, Washington

Ruth Anna Diveley^A (English)

B.A., College of Puget Sound, 1928

Thesis: The Meaning of *Gentillesse* in Chaucer

Charles Samuel Dobbins^P (Education)

B.A., University of Ireland, 1911

Thesis: The Development of the Junior High School in British Columbia

Helen Anne Dooley^A (English)

B.A., Illinois Wesleyan University, 1925

Thesis: A Study of the Mysticism of Emily Dickinson

Elva Laurretta Emmerson (Spanish)

B.A., Walla Walla College, 1928

Thesis: Guzman el Bueno in Castilian Literature

Herbert Eugene Fowler^A (English)

B.A., Princeton University, 1906

Thesis: Wordsworth's Conception of Nature and Natural Education in Relation to Rousseau

Elizabeth Gloor Gross^m (English)
(Sister Mary Alexander)

B.A., University of Washington, 1925
Thesis: Notes and Comments on the Prioress

Ira Montgomery Gish^a (Spanish)

B.A., Walla Walla College, 1925
Thesis: The Political and Social Conditions of Venezuela as Revealed in the Works of Rufino Blanco-Fombona

Julius Digrazia Giuntoni^a (Italian)

B.A., University of Washington, 1927
Thesis: The Reaction of Giosue Carducci to Romanticism in Italy

Margaret Lois Haley (English)

B.A., Oberlin College, 1929
Thesis: The Use of Witchcraft in Elizabethan Drama

Allen Odell Hammond^a (Education)

Ph.B., Northwestern University, 1902
Thesis: Adult Education in the United Y.M.C.A. Schools, using Seattle Y.M.C.A. Schools as an Example

Agnes Camilla Hansen (English)

B.A., Reed College, 1929
Thesis: The Function of Music and Song in Elizabethan Drama through Shakespeare

Jessie Elizabeth Harris^a (English)

B.A., George Washington University, 1925
Thesis: Walt Whitman and Quakerism

William Lawrence Hodgskiss^a (Education)

B.S., Montana State College, 1914
Thesis: The Status of the Home Talent Teacher in Washington

Ernest Russell Hunt^a (Education)

B.A., University of Washington, 1923
Thesis: The Present Status of Educational and Vocational Guidance in Secondary Schools of the State of Washington

Leota Lois Johns (Economics)

B.S. in L.S., University of Washington, 1928
Thesis: Financing Public Libraries in the United States

Ralph Charles Johnson^a (History)

B.A., University of Kansas, 1909
Thesis: Sir Edward Grey and the Anglo-French Entente, 1906-1914

Jonas Adalsteinn Jonasson^a (History)

B.A., Linfield College, 1926
Thesis: Panama Canal Tolls Dispute

Charles Louis Kaufman (English)

B.A., Willamette University, 1929
Thesis: The Robin Hood Legend in Ballad and Dramatic Literature

Anna Kellum (Home Economics)

B.S., University of Wisconsin, 1924
Thesis: Fabric Standards of the English Cloth Gilds during the 12th, 13th and 14th Centuries as Compared with Present Standards

Thelma Harrison Lacey^a (Education)

B.S. in Ed., Kirksville State Teachers College, 1922
Thesis: A Study of the Scientific Training of General Science Teachers in the State of Washington

Thelma Lucille Laird^a (Spanish)

B.A., University of Washington, 1924
Thesis: A Comparative Study of Jose Zorilla's *Margarita La Tornera* and Some of its Predecessors in Romanic Literature

Grace Amy Peppett McGuire^A (English)
 B.A., University of Washington, 1927
 Thesis: Eavesdropping in Shakespeare's Comedies

Jane Barber Mallis^D (Education)
 B.A., Drury College, 1902
 Thesis: A Survey of Some Experimental Material in the Field of Secondary School Mathematics with a Consideration of its General Setting

Kathleen Jocelyn Malloy (English)
 B.Ed., University of Washington, 1922
 Thesis: Waldo David Frank as Expressionist and Prophet

Robert Ray Martin^A (Sociology)
 B.A., University of Washington, 1929
 Thesis: The Methodist Church in Seattle: a Study of the Declining Dominance of the Church as a Communal Institution

Ethel Frances Murray (Education)
 B.L., University of California, 1914
 Thesis: A Study of Five University Public Health Nursing Courses

Walter Robert Nichols (History)
 B.A., University of Washington, 1919
 Thesis: The Achaean League and its Development under Aratus

Nobuo Okimura (Oriental Studies)
 B.A., Rinzai-shu University, 1921
 B.A., University of Washington, 1927
 Thesis: Historical Sketch of Zen Buddhism and its Significance

Herman Pfeifer^A (Education)
 B.A., University of Kansas, 1907
 Thesis: A Study of Teacher Supply and Demand in the State of Washington

Helen Caroline Porep (French)
 B.A., University of Washington, 1927
 Thesis: The Role of the Old Woman in French Drama up to 1850

Paul Marion Reed^A (Education)
 B.S., University of Washington, 1914
 Thesis: An Analysis of the Content and Arrangement of Five High School Chemistry Texts

Ralph Riley Richards^A (Education)
 B.A., Seattle Pacific College, 1928
 Thesis: A Study in Motivation

Cecil Francis Robe^A (History)
 B.A., University of Oregon, 1922
 Thesis: The Cruise of the C.S.S. Shenandoah

Margaret Catharine Rodman (Economics)
 B.A., University of Washington, 1926
 Thesis: The Trend of Alaskan Commerce through the Port of Seattle

Sophie Rosenstein^A (English)
 B.A., University of Washington, 1928
 Thesis: Studies on the Sources of Charles Reade's *The Cloister and the Hearth*

Minnie Aubrey Rousch (History)
 B.A., University of Washington, 1928
 Thesis: Lord Russell and the Alabama Case

Violet Glenora Scott (Education)
 B.A., Walla Walla College, 1921
 Thesis: An Experiment in the Effect of the Individual Laboratory versus Demonstration Method on the Pupil's Final Grade in General Science

Helen Elizabeth Searls (Greek)

B.A., University of Washington, 1929

Thesis: The Origins and Development of Western Hellenism prior to the Persian Wars

Paul Vincent Sheehan (English)

B.A., University of Washington, 1926

Thesis: The Short Story Technique of O. Henry

Arthur Loring Shelton^D (Education)

B.A. in Ed., University of Washington, 1925

Thesis: A Comparison of the Progress made by Pupils of Two Methods of Teaching General Science in the Ninth Grade

Katherine Macrae Smith (French)

B.A., University of Washington, 1927

Thesis: A Comparison of Jodelle's *Cleopatre Captive* and the Cleopatra of Cesare de' Cesari with possible Sources in Plutarch's Lives

George Albert Stead (English)

B.A., University of Illinois, 1924

Thesis: Charles Brockden Brown

Lyle Palmer Hall Stewart (Economics)

B.A., Simpson College, 1924

Thesis: The Development of Seattle Banking

Jennie Strain (English)

B.A., Midland College, 1915

Thesis: Sidney Lanier and his Poetry

Clarice Swan^A (French)

B.A., University of Washington, 1928

Thesis: George Sand and Fernan Caballero: a Study of their Ideas and Methods

Aletha Thompson^M (English)

B.A., University of Washington, 1922

Thesis: The Poetic Theory and Practice of Walt Whitman

Mary Gladys Thompson^A (Latin)

B.A., Grinnell College, 1919

Thesis: Homeric Zeus and Vergilian Jupiter

Marguerite Travis^A (History)

B.A., Upper Iowa University, 1922

Thesis: The Alaska Railroad

Lloyd Edwin Turner^A (Education)

B.S., University of Washington, 1921

Thesis: The Administration and the Supervision of High School Student Body Finance

Florence Myrtle Van Gilder (Spanish)

B.A., University of Washington, 1924

Thesis: The Dramatic Doctrines of Leandro Fernandez de Moratin in Theory and Practice

Horace Everett Walker (History)

B.A., University of Washington, 1928

Thesis: General James Wilkinson—Pensioner of Spain

Frances Weisman^A (Political Science)

B.A. in Ed., University of Washington, 1926

Thesis: Political Policies of Theodore Roosevelt

Sara Eve Weisman^A (Political Science)

B.A. in Ed., University of Washington, 1926

Thesis: The Political Policies of Woodrow Wilson

Eugene Elizabeth Springer Whyte (English)

B.A., University of Idaho, 1926

Thesis: Studies in Peele's *The Old Wives Tale*

Clarence William Wilcox^A (History)

B.S. in Ed., Northern Normal and Industrial School, 1925

Thesis: Christianity and Paganism under the Julian Emperors

Chloe Anice Zimmerman^A (Education)

B.A., University of Washington, 1920

Thesis: An Investigation in the English Entrance Examination at the University of Washington

MASTER OF SCIENCE

Sidney Adams (Psychology)

B.S., University of Washington, 1928

Thesis: The Relation between Physique and Proficiency in School Subjects

Lucile Anderson (Chemistry)

B.S., University of Washington, 1928

Thesis: 7-, and 8-methoxy Chromanones and Homochromanone

Emma Bolt^A (Botany)

(Sister Mary Leonella)

B.A., St. Mary's College, 1906

B.S., University of Washington, 1921

Thesis: Regeneration in *Vaucheria*

James Stanley Brode^D (Zoology)

B.S., Whitman College, 1918

Thesis: A Study of Fresh-water Life and its Use in Teaching High School Biology in the Pacific Northwest

Frank Lai-ngi Chan (Chemistry)

B.S., University of Washington, 1929

Thesis: The Preparation and Solubility of Calcium-meta-silicate at Temperatures between 20 C. and 200 C.

Bert E. Christensen (Chemistry)

B.S., Washington State College, 1927

Thesis: The Specific Conductivity of Nitrosyl Chloride

John Eugene Dulin (Chemistry)

B.A., William Jewell College, 1925

Thesis: An Investigation of the Solubilities and Conductances of Inorganic Salts in Nitrosyl Chloride

George Samuel Eby^A (Chemistry)

B.S., Whitman College, 1923

Thesis: The Triarsenate of Barium and a Basic Arsenate of Strontium

Willard Geer (Physics)

B.S. in Ed., University of Washington, 1927

Thesis: A Study of Secondary Electronic Emission of Nickel due to High Speed Positive Ion Bombardment

Julius Charles Gerhard Hoverson (Zoology)

B.S. in Ed., University of Washington, 1928

Thesis: Life History of a New Species of Psychodid Fly (*Psychoda Scintillans*)

Clarence William Hurlbut (Bacteriology)

B.S., University of Washington, 1929

Thesis: A Study of Psychrophilic Bacteria in Ice Cream

Martin Wiggo Johnson^M (Zoology)

B.S., University of Washington, 1923

Thesis: Notes on the Larval Development of *Strongylocentrotus Franciscanus* (A. Ag.)

Venus June Johnson^P (Zoology)

B.S., University of Washington, 1923

Thesis: The Interrelationship existing between Insects and Specific Flora

Edward Brent Jordan Jr. (Physics)

B.A., Colorado College, 1928

Thesis: An Investigation of the Variation of the Critical Angle of Reflection for X-rays for Gold and Silver Films of Different Thickness

Carl LeRoy Martin (Bacteriology)

B.S., University of Washington, 1929

Thesis: Studies in Bacteriophage Phenomena

Robert Marion Reed (Chemistry)

B.S., University of Washington, 1929

Thesis: The Analysis and Fusibility of the Ash from Certain Washington Coals

Raymond Earl Reinhart^A (Physics)

B.A., Phillips University, 1927

Thesis: The Diffusion of Platinum into Palladium

Louis Denford Rhoades (Chemistry)

B.A., Kalamazoo College, 1915

Thesis: A Study of the Sulfuryl Chloride System

Keith Morton Seymour^A (Chemistry)

B.S. in Ed., University of Washington, 1926

Thesis: A Study of the Claisen Condensation between Aliphatic Esters and Ketones

Seldon Page Todd (Chemistry)

B.S. in Ch.E., University of Washington, 1928

Thesis: Some Adsorption Potentials of Mercury

Kenneth Thurman Williams (Chemistry)

B.S., University of Washington, 1928

Thesis: Change of Hydrogen Ion Concentration by Sorption

August Gerrard Zoet (Bacteriology)

B.S., University of Washington, 1930

Thesis: The Desensitization of Tuberculous and Tubercular Guinea Pigs by Means of Various Tuberculins

MASTER OF SCIENCE IN CERAMIC ENGINEERING

Daniel Dwight Wheeler^P

B.S., Iowa State College, 1928

Thesis: The Bleaching of Pacific Northwest Kaolins and their Use as Paper Fillers

MASTER OF SCIENCE IN FORESTRY

Henry Philip Brandner^M

B.S.F., University of Washington, 1929

Thesis: Systematic Development of Recreational Resources on Forest Lands

Tung Hua

B.S.F., Nanking University, 1919

Thesis: The Microscopic Characteristics of Chinese Woods

MASTER OF SCIENCE IN PHARMACY

Ewen Gillis

B.S., University of Oregon, 1924

B.A., Washington State College, 1926

Thesis: A Phytochemical Study of *Hydrastis Canadensis* (Golden Seal)

Paul Simon Jorgensen

B.S. in Pharm., University of Washington, 1928

Thesis: The Alkaloid Berberine and Methods for Estimation

Edgar Andrew Kelly

B.S. in Pharm., University of Washington, 1929
Thesis: A Chemical Study of *Senecio Aureus*

Sukeo Frank Nakaya

B.S. in Pharm., University of Washington, 1929
Thesis: The Volatile Oil of *Abies Nobilis*

Harry Edward Thompson

B.S. in Pharm., University of Washington, 1929
Thesis: A Pharmaceutical Study of *Mistura Glycyrrhiza Compositus* (Brown Mixture) with special Reference to the Decomposition of the Spirit of Nitrous Ether

Lono Wilkerson Tobey

B.S. in Pharm., University of Washington, 1928
Thesis: *Taxus Brevifolia*

MASTER OF SCIENCE IN HOME ECONOMICS

Florence Anne Quast^M

B.S., University of Washington, 1919
Thesis: A Study of the Comparative Cost of Fresh and Canned Vegetables as used in Institutions

Esther Bierman Simon

B.S., Milwaukee-Downer College, 1924
Thesis: The Vitamin A Absorption and Retention of Breast-fed Infants

MASTER OF SCIENCE IN PHYSICAL EDUCATION

Velda Pauline Cundiff^A

B.S., University of Washington, 1926
Thesis: A Survey of Physical Education Activity Programs in the Secondary Schools of the State of Washington

Bernice Lillian Patterson^A

B.S., University of Washington, 1922
Thesis: A Survey of the Physical Education Facilities and Equipment in the Secondary Schools of the State of Washington

MASTER OF ARTS IN MUSIC

Isla Hinman

B.M., University of Washington, 1927
Thesis: A Piano Concerto

Charles Wilson Lawrence

B.M., Oberlin Conservatory of Music, 1918
Thesis: *Atsumori*

George William Thomas^A

B.M., University of Washington, 1928
Thesis: *In a Garden: a Suite for Soprano with Accompaniment of Flute, Viola, and Violoncello*

MASTER OF FORESTRY

Floyd Everett Carlson

B.S.F., University of Washington, 1928
Thesis: Log Scaling in Southeastern Alaska with Particular Reference to Wind Shake Defect

Claire Ivon Gordon^A

B.S.F., University of Washington, 1926
Thesis: The Relationship between the Specific Gravity and Hygroscopicity of Coniferous Wood

Mark Jewel Pike

B.S.F., University of Washington, 1930
Thesis: The Quality and Quantity of Lumber Produced and the Efficiency of Utilization in Cutting Second Growth Douglas Fir Logs

MASTER OF BUSINESS ADMINISTRATION**Charles Eliot Calhoun**

B.A., University of Washington, 1925

Thesis: Financing the Pulp and Paper Industry on the Pacific Coast

Donald Frank Capen

B.B.A., University of Washington, 1924

Thesis: A Process for Recording and Analyzing Chain Store Value Facts

Elmer Edgar Davison

B.B.A., University of Washington, 1922

Thesis: A Survey of the World's Production and Trade in Wool

Charles Earl Garretson

B.A., Des Moines University, 1925

Thesis: State Regulation of Aeronautics

Pierre Archibald McKellar^A

B.A., Carleton College, 1924

Thesis: The Present Legal Control of Consumption in the United States by the Federal and State Governments

Vernon Arthur Mund^A

B.B.A., University of Washington, 1928

Thesis: The Expansion of Public Work during a Period of Depression to Stabilize Industry and Employment

Harrison Nye Phillips^M

B.S., Oregon Agricultural College, 1924

Thesis: Distribution of Food Products in Pierce County with Special Reference to Chain Store Competition

Robert Julius Schneider^A

B.B.A., University of Washington, 1928

Thesis: Social and Economic Causes for the Shifting Character of the Commercial Banking Business

Francis Edwin Smetheram

B.B.A., University of Washington, 1927

Thesis: A Standard Cost System for a Manufacturer

Clarence Edward Wassberg

B.S. in Ch.E., University of Washington, 1918

Thesis: The Operation and Control of the Seattle Freight Terminal

MASTER OF FINE ARTS**George Wilson Dennis^D**

B.A. in F.A., Washington State College, 1928

Thesis: A Problem in Painting

Avard Fairbanks^D

B.F.A., Yale University, 1925

Thesis: A Problem in Painting

CHEMICAL ENGINEER**Clarence Edward Wassberg**

B.S. in Ch.E., University of Washington, 1918

Thesis: Industrial Control Instruments and their Application to Chemical and Manufacturing Industries

CIVIL ENGINEER

Arthur Harold Benedict
B.S. in C.E., University of Washington, 1928
Thesis: A Study of the McKenzie Bridge

ELECTRICAL ENGINEER

Lindsay Moritz Applegate
B.S. in E.E., University of Washington, 1921
Thesis: Skagit Power Development, Transmission and Distribution System

Charles Max Lubcke
B.S. in E.E., University of Washington, 1918
Thesis: Skagit Power Development Investigation of Economical Voltages for Transmission Lines

Charles Maynard Turner
B.S. in E.E., University of Washington, 1923
Thesis: Regulation of Public Utility Rates in Washington

DOCTOR OF PHILOSOPHY

Hubert Anton Bauer
Baccalaureate, University of Munich, 1921
M.S., University of Washington, 1928
Thesis: The Tide as an Environmental Factor in Geography

Paris Roy Brammell
B.A., McPherson College, 1923
M.A., University of Michigan, 1925
Thesis: A Study of Entrance Requirements in the University of Washington

Iva Luella Buchanan
B.A., University of Wisconsin, 1907
M.A., University of Washington, 1920
Thesis: An Economic History of Kitsap County, Washington, to 1889

Victor Childs Christianson^A
B.A., University of Washington, 1924
M.A., University of Washington, 1926
Thesis: Edwin Lawrence Godkin as a Utilitarian

Vivian Richard Dammerell^A
B.S., University of Washington, 1924
M.S., University of Washington, 1926
Thesis: The Preparation and Study of Colloidal Aluminum Hydroxide and Evidence of its Effect on Ion Distribution in Basic Aluminum Chloride Solutions

Catherine Desmond^M
(Sister Mary Ethelind)
B.A., St. Mary's College, 1917
M.A., Creighton University, 1919
Thesis: The Commentary of Marsiglio Ficino the Florentine on Plato's Symposium concerning Love

Theodore William Evans
B.S., College of Puget Sound, 1927
Thesis: A Study of Some Organic Oxidation and Addition Reactions

Richard Eugene Fuller
Ph.B., Sheffield Scientific School, Yale University, 1918
B.S., University of Washington, 1924
M.S., University of Washington, 1925
Thesis: The Petrology and Structural Relationship of the Steens Mountain Volcanic Series of Southeastern Oregon

Arnold John Lehman
B.S., University of Washington, 1925
M.A., University of Washington, 1926
Thesis: The Leaf Oils of Washington Conifers

*University of Washington***Melvin Miller Rader^A****B.A., University of Washington, 1925****M.A., University of Washington, 1927****Thesis: The Philosophy of Wordsworth, a Reinterpretation in the
Light of the New Evidence****Louis Wait Rising^A****B.S., Oregon Agricultural College, 1924****M.S., University of Washington, 1926****Thesis: The Estimation of Poisons in the Presence of Preservatives****Albert Lloyd Seeman****B.A., Morningside College, 1921****M.B.A., University of Iowa, 1924****Thesis: The Port of Seattle: a Study in Urban Geography****Jesse Austin Tanner^A****B.A., University of North Dakota, 1905****M.A., University of North Dakota, 1907****Thesis: Trends in the Aims, Materials, and Methods of Arithmetic Instruction**

UNDERGRADUATE SCHOLARSHIP HONORS—1930

FIRST JUNIOR HONORS

Abel, Marian Jeannette (L.A.)	Mackey, Jack Morgan (Engr.)
Adatto, Emma (L.A.)	Martin, George Coleman (Engr.)
Albin, Tom Burns (Sci.)	Martinson, Edwin Oscar (Engr.)
Allen, Estelle Merrill (L.A.)	Miller, Neal E. (Sci.)
Bartlett, Mariana (F.A.)	Moore, Donald John (Engr.)
Beeler, Mae Belville (L.A.)	Morehodoff, Vladimir (Sci.)
Bennett, John Leonard (L.A.)	Mowry, Paul Richard (B.A.)
Berg, Geraldine C. (L.A.)	Noble, Anna Brownell (L.A.)
Burns, Bartlett (Engr.)	Norris, Charles Head (Engr.)
Bush Eleanor (L.A.)	Palo, George Mathias (Engr.)
Christ, Robert Edward (Sci.)	Pennell, Maynard L. (Engr.)
Christopher, Margaret Alice (F.A.)	Pittman, Robert Graham (Sci.)
Coats, Robert Roy (Mines)	Rubenstein, Anita (L.A.)
Cooper, Lemuel B. (Engr.)	St. Clair, Margaret (L.A.)
De Lacy, Emerson Hugh (L.A.)	Seguritan, Numeriano (L.A.)
Director, Estelle Jane (Sci.)	Singer, Cecil Allen (B.A.)
Dobbin, Catherine N. (Educ.)	Spear, Sidney David (L.A.)
Duvall, Lois Irene (L.A.)	Spencer, J. Nuten (Sci.)
Gardner, Mac Alan (L.A.)	Spoor, William Arthur (Fish.)
Ghiglione, Angelo F. (Engr.)	Stigler, George Joseph (B.A.)
Gudelius, Elfriede (Sci.)	Strand, Solveig Jean (L.A.)
Hillman, Arthur Wm. (L.A.)	Tomowske, Alice Mary (L.A.)
Horsky, Charles Antone (L.A.)	Tomowske, Clare Natalie (L.A.)
Jensen, Ingeborg Elizabeth (Sci.)	Voss, June Amanda (L.A.)
Kluge, Mabel Mildred (L.A.)	Watanabe, Teru M. (L.A.)
Kortman, Frederick Ellard (For.)	Williams, Clara Cook (F.A.)
Logg, Mildred Juanita (L.A.)	

SECOND JUNIOR HONORS

Alhadeff, Charles David (Sci.)	Christenson, Waldo B. (F.A.)
Anderson, Eugene V. (Sci.)	Cooney, Juanita Mae (B.A.)
Anderson, Ruth Elizabeth (F.A.)	Currier, Robert H. (B.A.)
Andrews, Marjorie Sue (L.A.)	Dalton, Thelma Louise (L.A.)
Armstrong, Hubert C. (L.A.)	Darling, Katherine E. (F.A.)
Baker, Lucille I. (F.A.)	Doyle, Thomas Carlson (Engr.)
Ballard, Herbert Norman (Engr.)	Elder, Marian Jane (Sci.)
Berglund, Ralph Martin (Sci.)	Epstein, Jesse (Law)
Bixby, Mary Elizabeth (L.A.)	Evans, Dorothy Leora (L.A.)
Bourns, Frank Doyle (L.A.)	Finn, Miriam Aileen (L.A.)
Bowen, Dorothy Ruth (L.A.)	Ford, Catherine Louise (F.A.)
Brooks, Ruth Anna (L.A.)	Fordon, John Vivian (B.A.)
Brown, Malcolm Johnston (L.A.)	Franklin, Carl Mason (B.A.)
Buckman, Frank Edward (Engr.)	Goff, Willard Frederick (Sci.)
Caccia, Louise C. (L.A.)	Hamley, Frederick George (Law)
Campbell, Jessie Louise (Sci.)	Hansen, Herman L. (B.A.)
Carey, Elizabeth (L.A.)	Hay, Byron William (Engr.)
Carlson, Gladys May (L.A.)	Herman, Saul (Law)

Hibbs, Lois (F.A.)
 Hill, Robert L. (L.A.)
 Hunt, Elaine Winnifred (L.A.)
 Igelsrud, Iver (Sci.)
 Johnson, Dorothy Elizabeth (L.A.)
 Johnson, Ruer De Lancey (Engr.)
 Johnson, Kenneth Gordon (Engr.)
 Johnson, Nettie Ruth (Sci.)
 Johnson, Willard Carroll (B.A.)
 Kosaka, Hannah (F.A.)
 Kwapil, Helen Marie (L.A.)
 Leslie, Dorcas (F.A.)
 Little, Jean (L.A.)
 Martin, Genevieve (L.A.)
 Martin, Justin M. (B.A.)
 Marx, Walter John (L.A.)
 Matthews, Marian Frances (L.A.)
 Mills, Elizabeth Tabor (L.A.)
 Ness, Arthur Thomas (Sci.)
 Olson, Thelma Mary (L.A.)
 Osterman, Betty (Sci.)
 Parrish, D. Bruce (Engr.)
 Partansky, Alexander (Sci.)
 Penick, Norman Justin (For.)
 Pennington, Josephine (L.A.)

Raudenbush, Nellie Luella (B.A.)
 Read, Sarah Louise (L.A.)
 Risk, Clyde Osmond (B.A.)
 Risser, Francis Buchanan (Engr.)
 Robinson, Grace Helen (L.A.)
 Sarginson, John (For.)
 Schmitz, Julia Marguerite (L.A.)
 Schuchard, Muriel Clara (Educ.)
 Schwartz, Margaret D. (B.A.)
 Smith, Margaret Louise (F.A.)
 Smith, Ross (Engr.)
 Staadecker, Victor B. (B.A.)
 Taft, Claire E. (L.A.)
 Taylor, Joseph Richard (F.A.)
 Terrell, Everett O. (F.A.)
 Thiele, Dorothy M. (L.A.)
 Vaughan, Anna Elizabeth (Sci.)
 Verd, Paul Harris (Engr.)
 Vizio, Estelle R. (Educ.)
 Vopni, Sylvia Freda (L.A.)
 Weaver, Margaret Lydia (L.A.)
 Willis, Katherine Margaret (Journ.)
 Wilson, Jean Elizabeth (L.A.)
 Yost, Allan Daniel (B.A.)

FIRST SOPHOMORE HONORS

Ahlers, Eleanor Emily (L.A.)
 Anderson, Kenneth Bliss (F.A.)
 Ariizumi, Iku (Pharm.)
 Barkas, Walter Henry (Sci.)
 Bassett, Ralph (L.A.)
 Beeman, Walter Mateer (For.)
 Bell, James Wenman Jr. (L.A.)
 Boyd, Marian Dale (L.A.)
 Bracken, Charles Wallace (F.A.)
 Brown, Robert Eldon (L.A.)
 Brownton, Dorothy Clarisse (F.A.)
 Burnett, Marvin Aaron (L.A.)
 Campbell, Walter H. (L.A.)
 Carlson, Wenzel (B.A.)
 Cull, Erma Marie (L.A.)
 Culter, Richard Horace (L.A.)
 De Lacy, Phillip Howard (L.A.)
 Dellwo, Fred (Sci.)
 Dishington, Herman (Engr.)
 Dunn, Bryant Reeve (L.A.)
 Dunn, Clarence L. (Sci.)
 Egley, Uwarda Della (Sci.)
 Ellis, Grace Miriam (F.A.)
 Ernst, Karl (F.A.)
 Estep, William C. (L.A.)
 Foth, Frieda (Sci.)
 Fujita, Satoshi (Engr.)
 Fuller, Romayne Louise (L.A.)
 Gendelmeyer, Clarice Ruth (L.A.)
 Gill, Dorothy (Sci.)
 Glaeser, Walter William (B.A.)
 Gray, Barbara (Sci.)
 Gregg, May Evelyn (Sci.)

Grodstein, Florence (L.A.)
 Hagen, Alice Lucile (L.A.)
 Hansen, Elmer D. (Engr.)
 Harmon, Ruth Eleanor (L.A.)
 Hatch, Maurice Franklin (Engr.)
 Heathers, Glen Leon (L.A.)
 Heikkinen, Maria (L.A.)
 Hentschel, Helen Amanda (L.A.)
 Hill, Glennette (L.A.)
 Hillman, Mary Marjorie (Sci.)
 Hixon, Homer J. (For.)
 Hopkins, Adeline Faye (B.A.)
 Hoppe, Gertrude Nerissa (Sci.)
 Horstman, Alice Irma (B.A.)
 Hutchinson, Samuel J. (Sci.)
 Jennings, Bernice Ann (L.A.)
 Johnson, Robert Eugene (Sci.)
 Jorgensen, Wilhelm (Sci.)
 Keister, Naomi Ruth (L.A.)
 Koski, Sigrid Juliana (Pharm.)
 Krems, Nathan Samuel (L.A.)
 Larsen, Grace (Sci.)
 Le Blond, Neva E. (L.A.)
 Lewis, Esther A. (Sci.)
 Lloyd, Rodney S. (L.A.)
 Loftus, Martin Louis (L.A.)
 McGilvrey, Jack (L.A.)
 McKnight, Margaret (F.A.)
 Markham, Aaron (Engr.)
 Marsh, William Dailey (L.A.)
 Martin, Gustav Julius (Sci.)
 Moberg, Barbara Sigrid (B.A.)
 Moldstad, Helen Kathryn (Sci.)

Moreland, Oliver James (Engr.)	Shearer, Kathleen Mary (Sci.)
Morgenroth, Margaret A. (B.A.)	Sholley, John B. (L.A.)
Morry, Ellen Margaret (L.A.)	Shumm, Wiley Alvin (Engr.)
Nagelvoort, Elizabeth Louise (F.A.)	Sibley, Frances Dean (F.A.)
Nelson, Helmar Lars (Pharm.)	Smith, Byrnina Elizabeth (L.A.)
Nelson, Marion Marshall (For.)	Stevens, Louise Frances (Sci.)
Nelson, Robert A. (B.A.)	Swygard, Kline (Sci.)
Olson, Margaret Anne (L.A.)	Thomas, Gwendolyn (F.A.)
Orman, Oscar Carl (L.A.)	Trueblood, Harold Clyde (Engr.)
Parker, Portia (Sci.)	Turbitt, John Gordon (Engr.)
Pearl, Lydia (F.A.)	Turner, Clare Eugene (L.A.)
Phillis, Virginia B. (L.A.)	Van Woert, Faire (L.A.)
Pinkham, Eleanor Davis (L.A.)	Wallace, Willette (L.A.)
Pickrell, Helen Ingram (L.A.)	Watanabe, Yuki (L.A.)
Poot, Alice Marie (F.A.)	Willard, Robert R. (L.A.)
Radinsky, Jack (L.A.)	Yuni, William E. (B.A.)
Samuelsen, Agnes (L.A.)	

SECOND SOPHOMORE HONORS

Adamec, Ermgard (F.A.)	Gerdon, Loretta Erma (B.A.)
Allen, Sally Sue (L.A.)	Grisham, William La Monte (Pharm.)
Anderson, Fred Oscar (For.)	Harper, Illis (L.A.)
Austin, Gertrude Harriet (Sci.)	Harter, Dana Eugene (Sci.)
Axling, Lynn (Pharm.)	Heinze, Mira Noyes (F.A.)
Bacon, Cecil D. (L.A.)	Heiser, Barbara (F.A.)
Baker, Glenn F. (L.A.)	Hervey, David Everett (For.)
Barter, Gilbert M. (Engr.)	Horner, Reva Berniece (F.A.)
Beeuwkes, Marjorie (F.A.)	Hynes, Kyran Robt. E. (Sci.)
Bradshaw, Terence (B.A.)	Jacobson, Leroy (Engr.)
Brakel, Mary Olga (Sci.)	Jenkins, Mary Marjorie (Sci.)
Brodine, Juliet A. (F.A.)	Johanson, Perry (F.A.)
Buckley, Eugenie A. (F.A.)	Johnson, Doris Margaret (L.A.)
Bucey, Boyd K. (B.A.)	Johnson, Mildred Louise (L.A.)
Bussabarger, Robt. A. (Sci.)	Johnston, Kathleen J. (F.A.)
Calmer, John A. (Engr.)	Kirkland, Donald P. (L.A.)
Carey, Ilo Alline (F.A.)	Kleihauer, Aylsworth (F.A.)
Case, Elwell Chambers (L.A.)	Knapton, Olive Marjorie (B.A.)
Chapman, Wilbert McCleod (Sci.)	Lahti, Elsie (L.A.)
Christensen, Catherine P. (Sci.)	Lamb, Florence E. (F.A.)
Clark, Robert William, Jr. (L.A.)	Lapham, Gwendolyn (L.A.)
Coffman, Jean (F.A.)	Lechner, Anna B. (L.A.)
Cole, Ruth (L.A.)	Leighton, Winifred J. (F.A.)
Crabtree, Margaret Erdine (Sci.)	Lorah, Edward Albert (Mines)
Crown, Marlin John (B.A.)	Lundell, Rainer Henry (Engr.)
De Lacy, Allen Clark (Fish.)	McCament, Robert William (B.A.)
Dennis, Kenneth E. F. (B.A.)	McDonald, Harold James (Pharm.)
Dickey, Margaret Case (F.A.)	McNabney, Ralph (Engr.)
Doi, Tulyo F. (Sci.)	Major, Eugene Francis (B.A.)
Eitel, Mary Anne (Sci.)	Martell, Alda Juliette (L.A.)
Elford, Eleanor Priscilla (L.A.)	Metcalf, Donald Gray (B.A.)
Epstein, Arthur (B.A.)	Middleton, George James (Mines)
Eustis, Harold Shepard (L.A.)	Middleton, Katherine Elizabeth (F.A.)
Evans, Trevor Heiser (L.A.)	Miller, James Lester (Pharm.)
Ferguson, Elizabeth Margaret (Sci.)	Minnear, William L. (Sci.)
Field, Helen Sinclair (L.A.)	Mitchell, Harold De Long (L.A.)
Fleming, Sam E. Jr. (L.A.)	Moore, Catherine E. (F.A.)
Foote, Ethel (F.A.)	Moulton, Ralph Wells (Engr.)
Forrest, Florence C. (B.A.)	Murphy, Grant P. (L.A.)
Frost, Edwin C. (Engr.)	
Froula, Sylvia (B.A.)	

Novak, Henry (L.A.)	Scott, Logan Dick (Engr.)
Owen, Alfred A. (B.A.)	Scripps, Josephine Louise (L.A.)
Palmer, Robert (L.A.)	Shadbolt, Julia Jane (L.A.)
Parrish, Kathryn (Sci.)	Sheehan, Margaret Louise (B.A.)
Perry, Richard McClane (L.A.)	Shepard, Wayne W. (F.A.)
Phillips, Alton V. (F.A.)	Sinclair, Kenneth L. (Engr.)
Pierce, Virginia Helen (L.A.)	Stanley, Floyd Myles (B.A.)
Poitras, Clara Delia (B.A.)	Steil, Naomi Clare (F.A.)
Powell, Virginia Margaret (F.A.)	Stuart, Gladwyn May (F.A.)
Powers, Philip Johnson (L.A.)	Tashiro, Shizuko Bille (B.A.)
Radke, Frederick August (Engr.)	Terry, Lawrence (Pharm.)
Richards, Helen Muriel (L.A.)	Tiffin, Mary Elizabeth (Sci.)
Richards, Lois Cecilia (L.A.)	Trindall, Alice Margaret (L.A.)
Richardson, Ruby Ruth (L.A.)	Virtanen, Reino (Sci.)
Rose, Mary Elenor (L.A.)	Wilcox, Sybil Vivian (B.A.)
Rossman, Malcolm Eugene (L.A.)	Williams, Richard L. (L.A.)

FRESHMAN HONORS

Adams, Archie William (Engr.)	Dreher, Mary Louise (F.A.)
Aisted, Edna Charleen (Sci.)	Drummond, Florence Olive (F.A.)
Aitken, Murray (Engr.)	Dykeman, Dorothy Lou (B.A.)
Alexander, Ruth (L.A.)	Edison, Verna May (Sci.)
Anderson, Earl Stauning (Pharm.)	Elworthy, Minerva Helen (L.A.)
Ashton, Robt. Frederick (L.A.)	Engbretson, Thelma (L.A.)
Bayles, Dorothy Progress (L.A.)	Erwin, John Francis (Engr.)
Beck, Donovan (Engr.)	Essley, Howard Le Grand (F.A.)
Beuwkes, Martha (F.A.)	Fleishman, Naomi (L.A.)
Benson, Isabel E. (F.A.)	Forssen, Carl G. (F.A.)
Benton, Mary Elizabeth (L.A.)	Foster, Jean (Sci.)
Bergren, Homer Austin (L.A.)	Fuller, Harold A. (B.A.)
Bertsche, Mildred Elizabeth (L.A.)	Galbraith, James Edward (L.A.)
Biossat, Bruce Armand (L.A.)	Gardiner, Arthur Perry (Engr.)
Blake, Winifred Hughes (L.A.)	Gavin, Louis John (L.A.)
Boles, William Henry (B.A.)	Gilbreath, Mildred Jean (L.A.)
Boyle, Gerald Morrow (B.A.)	Glasspool, Charles Henry (F.A.)
Boyle, Thomas Carroll (L.A.)	Goode, Paul Matthews (L.A.)
Brookbank, Earl Bruce Jr. (Engr.)	Grab, Gustav Alonzo (Engr.)
Buckvich, John (Sci.)	Greene, Martha Lucinda (Sci.)
Burdic, Chester Fellows (L.A.)	Greenham, Wilfred Noel (L.A.)
Burns, Jane Isabella (Sci.)	Gross, Francis J. (Engr.)
Bussard, Martha Louise (L.A.)	Hagiya, Toshitsugu (B.A.)
Campbell, Berniece Elizabeth (F.A.)	Hale, Frank (L.A.)
Campbell, Ernest Howard (L.A.)	Hall, Emily (L.A.)
Castleman, Barbara Elizabeth (L.A.)	Hannah, William Van Meter (B.A.)
Castor, Cecil (B.A.)	Hansen, Barbara Evalyn (L.A.)
Chandler, Jane Isabella (L.A.)	Hansen, Siegfried (Engr.)
Chronovsky, Voldemir (Sci.)	Harader, Gerould M. (Sci.)
Clark, Charles Spencer (Engr.)	Hardin, Helen Louise (F.A.)
Clark, Clayton Lincoln (Engr.)	Harper, Margaret Tracy (L.A.)
Clark, Howard (L.A.)	Harris, Whitney (B.A.)
Clarke, William Wetzel (Engr.)	Hazen, Priscilla Jean (L.A.)
Coghlan, Marion (Sci.)	Hedin, Elmer Louis (L.A.)
Colbert, Edwin J. (Engr.)	Hill, William Ryland (Engr.)
Compton, Nancy Anna Head (L.A.)	Hoobing, Carl Alfred (F.A.)
Corpron, Fred E. (Pharm.)	Horowitz, Rose (L.A.)
Craddock, Mary Josephine (L.A.)	Houts, Consuelo (L.A.)
Craig, Donald Franklin (F.A.)	Huey, Clayton Samuel (Sci.)
Craig, Priscilla Stubbs (L.A.)	Hurd, Evelyn Maud (L.A.)
Creesy, William Clyde (Engr.)	Irvine, Avis Parke (L.A.)
Dingley, Ruth (L.A.)	Johnson, Elsie Anna (Pharm.)

- Jordan, Thomas B. L. (Engr.)
 Juisti, Evelyn Helen (L.A.)
 Kefauver, Mary Virginia (L.A.)
 Klein, Elizabeth Lillian (L.A.)
 Koepf, Roland (F.A.)
 Koozin, Estella (Pharm.)
 Kunst, Elizabeth (F.A.)
 Lawson, Vera Francina (F.A.)
 Lea, Marion Elsie (L.A.)
 Le Sourd, Jessamine (L.A.)
 Lichty, Arden Irving (F.A.)
 Liden, Harry B. (B.A.)
 Lindsley, Addison Patton (B.A.)
 Lowry, Kathryn Bess (Sci.)
 Lucas, John (B.A.)
 McCormick, George (Engr.)
 McCurdy, Mabel Viola (L.A.)
 McDonald, Virginia (L.A.)
 McKinney, Rodney Smith (Engr.)
 McLaurin, William Alexander (F.A.)
 Marckx, Ada Clara (Pharm.)
 Marcy, Homer Loren (Engr.)
 Mawer, Muriel Alice (L.A.)
 Melton, Edith May (B.A.)
 Menefee, Selden (L.A.)
 Mills, Blake (Engr.)
 Mills, E. Eloise (B.A.)
 Milne, Ruth Ruby (L.A.)
 Mook, Elizabeth Stanley (F.A.)
 Moork, Chester H. (Engr.)
 Morford, Rosalia (L.A.)
 Morgan, Deane Elizabeth (L.A.)
 Morry, Rose Elizabeth (L.A.)
 Musson, Roger Penfield (Engr.)
 Newstrom, John E. (Engr.)
 Norden, Kenneth Fred (Engr.)
 Page, Stanley Glenn (F.A.)
 Parsons, Ethel Jensine (L.A.)
 Pengelly, Jack L. (B.A.)
 Pesce, M. Vincent (Engr.)
 Peterson, Jean Louise (F.A.)
 Phelps, Virginia (L.A.)
 Phillips, John Melvin (Sci.)
 Pope, Margaret Eleanor (L.A.)
 Potter, Edwin Andrews (B.A.)
 Pugsley, Amelia Bliss (Sci.)
 Putnam, Dan Curry Jr (F.A.)
 Rarig, John Arthur (F.A.)
 Ratchford, Audrey (L.A.)
 Redfern, Sutton (Sci.)
 Refling, Borghild Mildred (L.A.)
 Ribbeck, Ardis Gordon (Engr.)
 Ritchie, Dorothea (Sci.)
 Roberts, Ruth (L.A.)
 Robertson, William McLeod (F.A.)
 Roy, Donald Frank (L.A.)
 Rubens, Sidney Marvin (Sci.)
 Rugg, Helen Elma (Sci.)
 Rumburg, Iris (Sci.)
 Russell, Jack Preston (L.A.)
 Saindon, Vernon Adrian (B.A.)
 Salladay, Elmer George (Pharm.)
 Sanwick, Helen Marguerite (F.A.)
 Savery, Isabella (L.A.)
 Schock, Hazel Alice (L.A.)
 Schroeder, Mary Louise (F.A.)
 Schuchard, Earl Adolph (Engr.)
 Sheffield, Margaret Jane (L.A.)
 Sheffield, Mary Louise (L.A.)
 Shinozaki, Alice Sumi (L.A.)
 Shulman, Alex Elias (B.A.)
 Siler, Clara Mae (Sci.)
 Snyder, Gaines (L.A.)
 Somers, Charles Wilbur (B.A.)
 Speidel, Marjorie H. T. (L.A.)
 Spencer, Arthur Frank (L.A.)
 Splawn, Homer Bayard (L.A.)
 Stewart, John Theodore (B.A.)
 Stroessler, John (F.A.)
 Stults, Charlotte Willette (L.A.)
 Summers, Henry Carey (Engr.)
 Sutherling, Virgil Mack (Engr.)
 Tartar, Vance (Sci.)
 Tennant, Marrian (Sci.)
 Thomas, Leah (L.A.)
 Thompkins, Jean (B.A.)
 Thompson, Wilda Bell (L.A.)
 Tierney, Wm. Davitt (B.A.)
 Tiffin, Marguerite (Sci.)
 Tondel, Lyman Mack (L.A.)
 Trupp, Malcolm Stertz (Pharm.)
 Van Uhden, John Henry (B.A.)
 Vernon, Phyllis Lee (Sci.)
 Villeneuve, Margaret Anne (L.A.)
 Vredenburg, Mildred (F.A.)
 Wares, Gordon Webb (L.A.)
 Watt, Alexander Monroe (L.A.)
 Welsh, Howard Morrison (L.A.)
 Weston, John Ingram (Pharm.)
 White, Sallie Sue (F.A.)
 Williams, Clement D. (Engr.)
 Williams, Montana (F.A.)
 Wilson, Jane (F.A.)
 Wilson, Jean Alexandra (F.A.)
 Wong, Sam C. (Sci.)
 Wortham, James Lemuel (L.A.)
 Wright, Kenneth A. (Sci.)
 Wynn, Betty Anne (L.A.)
 Yamasaki, Minoru (F.A.)
 Young, Clarence Jackson (Mines)
 Young, Thomas Vermillion (Pharm.)

COMMISSIONS IN THE OFFICERS' RESERVE CORPS, UNITED STATES ARMY

SECOND LIEUTENANT, INFANTRY

Davis, Robert Gibson
Engstrom, Gustaf Adolph
Farrell, Glenn
Ford, Edwin Gilliard Jr.
Hewitt, Harry Hiram
Ingersoll, Russell Richard

Livingston, Stanley Donald
MacArthur, Kenneth Robert
Spencer, Arthur Champlain Jr.
Taylor, Henry Joe
Vogel, Leo
Worley, Lee Roy

SECOND LIEUTENANT, ARTILLERY

Bartells, Clifford Arthur
Janssen, Theodore Armin

Phillippi, Ralph
Skinner, Kenneth

HONOR GRADUATES OF THE RESERVE OFFICERS' TRAINING CORPS

Livingston, Stanley Donald

Bartells, Clifford Arthur

COMMISSIONS AS ENSIGNS IN THE UNITED STATES NAVAL RESERVE

Akey, Kenneth Tuttle
Boundy, James William
Buddress, Elmer Norrington
DeGarmo, Paul
Floberg, Victor Archie
Fox, William James Jr.
Green, Allen Valentine
Holgate, Charles Gordon
Johnson, Carl Alfred
Johnson, Willard Carrol

Keller, Jack Daniels
Kettenring, Robert LeRoy
Letson, Charles Francis
Lindman, Bertram Herman
Lundstrom, Herbert Frederick
Moore, Josiah "C" Jr.
Swensson, Karl Herbert Peer
Tronstad, Menford Sigmund
Ulsh, Charles Albert

FELLOWSHIPS, SCHOLARSHIPS AND PRIZES

THE LORETTA DENNY FELLOWSHIPS

John Holmes Dingle (Bacteriology)
B.S., University of Washington, 1930

John Irving Jolley (Chemistry)
B.S., University of Washington, 1930

Esther Weik Badgley (Zoology)
B.A., University of Kansas, 1925
M.A., University of Kansas, 1926

Alternates

Harry Hamilton Burns (English)
B.A., University of Washington, 1928

George Joseph Becker (English)
B.A., University of Washington, 1929

Stanley Elwood Putnam (French)
B.A., University of Washington, 1930

THE ARTHUR A. DENNY FELLOWSHIPS

Kenneth Wood Appelgate (History)
B.S. in Geol., University of Washington, 1926

Thomas Brents Stirling (English)
LL.B., University of Washington, 1926

Charles Schwartz (Pharmacy)
B.S. in Pharm., University of Washington, 1930

Lucius Elder Forbes (Education)
B.S., University of Montana, 1917
M.A., University of Washington, 1929

Roe Parker Rodgers (Civil Engineering)
B.S. in C.E., University of Washington, 1929

Drury Augustus Poindexter Pifer (Mines)
B.S. in Min. Engr., University of Washington, 1930

FELLOWSHIPS IN THE COLLEGE OF MINES AND THE NORTHWEST EXPERIMENT STATION, UNITED STATES BUREAU OF MINES

George Ava Page (Ceramics)
B.S. in Cer. Eng., Missouri School of Mines and Metallurgy, 1930

James A. Taylor (Coal Mining)
B.S. in Ch.E., University of Iowa, 1928

Howard Glen Wilcox (Ceramics)
B.S. in Mining, University of Washington, 1920

THE DUPONT FELLOWSHIP

Calvert Wright

THE BON MARCHE INDUSTRIAL FELLOWSHIP

Caroline Williams (1929-1930) Flora Mertie Willigar (1929-1930)

Alice Mildred Reid (1930-1931)

**COLUMBIA UNIVERSITY FELLOWSHIP IN MINING ENGINEERING
AND CHEMISTRY**

Not awarded

THE NAKATA FELLOWSHIP IN ORIENTAL STUDIES

Merle Ralph Cory

**THE SKAGIT VALLEY GOLDENSEAL FARM RESEARCH FELLOWSHIP
IN PHARMACY**

Ewen Gillis

THE CARL SCHURZ MEMORIAL FELLOWSHIP IN GERMAN

Frederick Carl Medack Jr.

THE AGNES HEALY ANDERSON RESEARCH FELLOWSHIPS IN FORESTRY

Kenneth Campbell McCannel John Edward Liersch
Lloyd Todd Webster

THE ISABELLA AUSTIN MEMORIAL SCHOLARSHIP

Alda Juliette Martell

THE GAMMA PHI BETA SCHOLARSHIP

Mary Elizabeth Bixby

THE VENINO SCHOLARSHIP IN MUSIC

Joan Hutchinson

THE MU PHI EPSILON SCHOLARSHIP IN MUSIC

Catherine E. Moore

THE BEECHER KIEFER MEMORIAL SCHOLARSHIP IN MUSIC

Franz Brodine

THE LADIES MUSICAL CLUB SCHOLARSHIP

Sigrid Brodine

THE PAUL KARSHNER MEMORIAL SCHOLARSHIPS IN MUSIC

George Hahn

Bertha Mae Moulton

THE P.E.O. SCHOLARSHIP

Katherine Shirley Curtis

THE SCHOLARSHIP TO THE FONTAINEBLEAU SCHOOL OF FINE
ARTS IN FRANCE

Albert Ernest Hennessy

THE DEPARTMENT OF ARCHITECTURE TRAVELING SCHOLARSHIP

Henry John Olschewsky

PUYALLUP UNIVERSITY OF WASHINGTON ALUMNI SCHOLARSHIP

Kathryn Gynn

THE WILLIAM MACKAY SCHOLARSHIP IN MINING

Paul Harold Bundy

THE SIGMA DELTA CHI SCHOLASTIC AWARD IN JOURNALISM

Blanche Gordon

Rene Avis Beam

THE SEATTLE TIMES AWARD

Marion Olive Ferriss

THE CARKEEK PRIZE IN LAW

Phyllis Cavender

THE WASHINGTON MUTUAL SAVINGS BANK ESSAY PRIZES IN
BUSINESS ADMINISTRATION

Paul Hadley Davis

Charles Henry Bowen

Fred William Wagner

(Honorable Mention to Richard Jones and Donald Gateswood Gill)

THE CHARLES H. BEBB PRIZES IN ARCHITECTURE

Albert Ernest Hennessy

Andrew Oien

Alexander Galitzin

THE GLADDING-McBEAN TERRA COTTA COMPANY PRIZES

Kenneth Bliss Anderson

Alexander Galitzin

Edward Ludington Graef

THE CHARLES LATHROP PACK FOUNDATION PRIZE IN FORESTRY

George Edgar Stoltz

THE OMICRON NU PRIZE IN HOME ECONOMICS

Ruth Clair Deering

THE CHI OMEGA PRIZE IN SOCIOLOGY

Sylvia Dorothea Nagel

THE UNIVERSITY DISTRICT HERALD EDITORIAL PRIZE

Richard Macfarlane

THE McKENZIE ACCURACY AWARD

Warren Russell Austin

James Edward Watkins

Mary Osborn

THE FRED W. KENNEDY AWARD

Thomas Frederick Barnhart

THE McKEAN BOOK PRIZE

Lionel Holmes

THE BETA GAMMA SIGMA AWARD

Robert A. Nelson

J. Milton Owsley

THE ITALIAN COMMERCIAL CLUB GOLD MEDAL FOR EXCELLENCE
IN ITALIAN

Helen Dorothy Wallin

CIRCOLO ITALIANO UNIVERSITARIO AWARD**Retha Ann Hicks****Lesley Muriel Heathcote****THE FRENCH GOVERNMENT GOLD MEDAL FOR EXCELLENCE IN FRENCH****Doris Virginia Stratton****THE LEHN AND FINK GOLD MEDAL FOR PHARMACEUTICAL ESSAY****Joseph Fernauld Fernandes****THE AMERICAN PHARMACEUTICAL ASSOCIATION GOLD MEDAL
FOR EXCELLENCE IN PHARMACY****Herman John Schroeder****THE LINTON MEMORIAL AWARD****Carl William Kraft****THE JUNIOR MILITARY PRIZE****Charles Head Norris**

REGISTER OF STUDENTS

The Register of Students is issued early in each academic year as a separate bulletin and may be obtained on application to the publications editor.

SUMMARY OF ENROLLMENT 1930-31

I. BY SCHOOLS AND COLLEGES

SCHOOLS AND COLLEGES	SUMMER QUARTER			AUTUMN QUARTER	WINTER QUARTER	SPRING QUARTER	TOTAL
	1st Term	2nd Term	Total				
	1	2	3	4	5	6	7
Bus. Admin.	133	137	159	1153	1104	998	1350
Men.....	89	94	103	898	879	790	1058
Women....	44	43	56	255	225	208	292
Education...	757	485	814	180	197	232	236
Men.....	166	126	167	56	68	86	86
Women....	591	359	647	124	129	146	150
Engineering..	47	24	49	910	980	761	1032
Men.....	47	24	49	904	976	755	1025
Women....	..	..	..	6	4	6	7
Fine Arts...	180	126	188	734	619	573	819
Men.....	26	21	29	196	179	162	224
Women....	154	105	159	538	440	411	595
Fisheries...	..	1	1	*	*	*	*
Men.....	..	1	1	..	..	..	..
Forestry...	6	1	6	116	113	97	147
Men.....	6	1	6	116	113	97	147
Grad. School.	908	682	1057	503	531	533	681
Men.....	360	311	418	289	323	320	389
Women....	548	371	639	214	208	213	292
Journalism...	6	7	8	64	62	56	70
Men.....	3	2	3	44	40	33	46
Women....	3	5	5	20	22	23	24
Law.....	71	63	71	301	302	255	322
Men.....	66	58	66	281	285	239	300
Women....	5	5	5	20	17	16	22
Liberal Arts.	596	421	633	2133	1940	1811	2425
Men.....	178	162	184	823	768	713	973
Women....	418	259	449	1310	1172	1098	1452
Library Sch.	2	3	3	46	52	53	56
Men.....	..	..	..	3	..	..	3
Women....	2	3	3	43	52	53	53
Mines.....	2	2	2	51	54	36	61
Men.....	2	2	2	50	53	35	60
Women....	..	..	..	1	1	1	1
Pharmacy...	4	2	4	122	127	118	135
Men.....	4	2	4	101	108	98	113
Women....	..	..	..	21	19	20	22
Science.....	225	198	277	1055	994	954	1249
Men.....	102	87	103	518	503	452	593
Women....	123	111	174	537	491	502	656
TOTALS.....	2937	2152	3272	7368	7075	6477	8583
Men.....	1049	891	1135	4279	4295	3780	5017
Women....	1888	1261	2137	3089	2780	2697	3566

* Included in the College of Science.

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. Column 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 1930-31

II. BY CLASSES

CLASSES	SUMMER QUARTER			AUTUMN QUARTER	WINTER QUARTER	SPRING QUARTER	TOTAL
	1st Term	2nd Term	Total				
	1	2	3	4	5	6	7
Graduates...	936	707	1084	579	613	610	761
Men.....	384	332	442	342	381	373	444
Women.....	552	375	642	237	232	237	317
Seniors.....	554	475	591	1174	1322	1346	1356
Men.....	241	211	241	690	774	764	774
Women.....	313	264	350	484	548	582	582
Juniors.....	606	440	641	1403	1437	1340	1502
Men.....	192	137	198	821	867	787	916
Women.....	414	303	443	582	570	553	586
Sophomores.....	123	107	128	1600	1548	1381	1801
Men.....	73	72	73	976	977	848	1111
Women.....	50	35	55	624	571	533	690
Freshmen.....	96	81	104	2572	2122	1765	3097
Men.....	43	40	48	1426	1275	993	1739
Women.....	53	41	56	1146	847	772	1358
Specials.....	26	15	28	40	33	35	66
Men.....	3	5	5	24	21	15	33
Women.....	23	10	23	16	12	20	33
Unclassified.....	596	327	696	..	..	..	..
Men.....	113	94	128	..	..	..	..
Women.....	483	233	568	..	..	..	..
TOTALS.....	2937	2152	3272	7368	7075	6477	8583
Men.....	1049	891	1135	4279	4295	3780	5017
Women.....	1888	1261	2137	3089	2780	2697	3566

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. Column 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.....	8,583
During summer quarter.....	3,272
	<u>11,855</u>
Deduct summer quarter duplicates.....	494
Total.....	<u>11,361</u>

EXTENSION STUDENTS

Extension Classes:	
Men.....	747
Women.....	3,912
	<u>4,659</u>
Home Study:	
Men.....	1,044
Women.....	994
	<u>2,038</u>
Total Extension Students.....	<u>6,697</u>

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