CATALOGUE NUMBER

For 1930-1931 Sessions

UNIVERSITY OF WASHINGTON

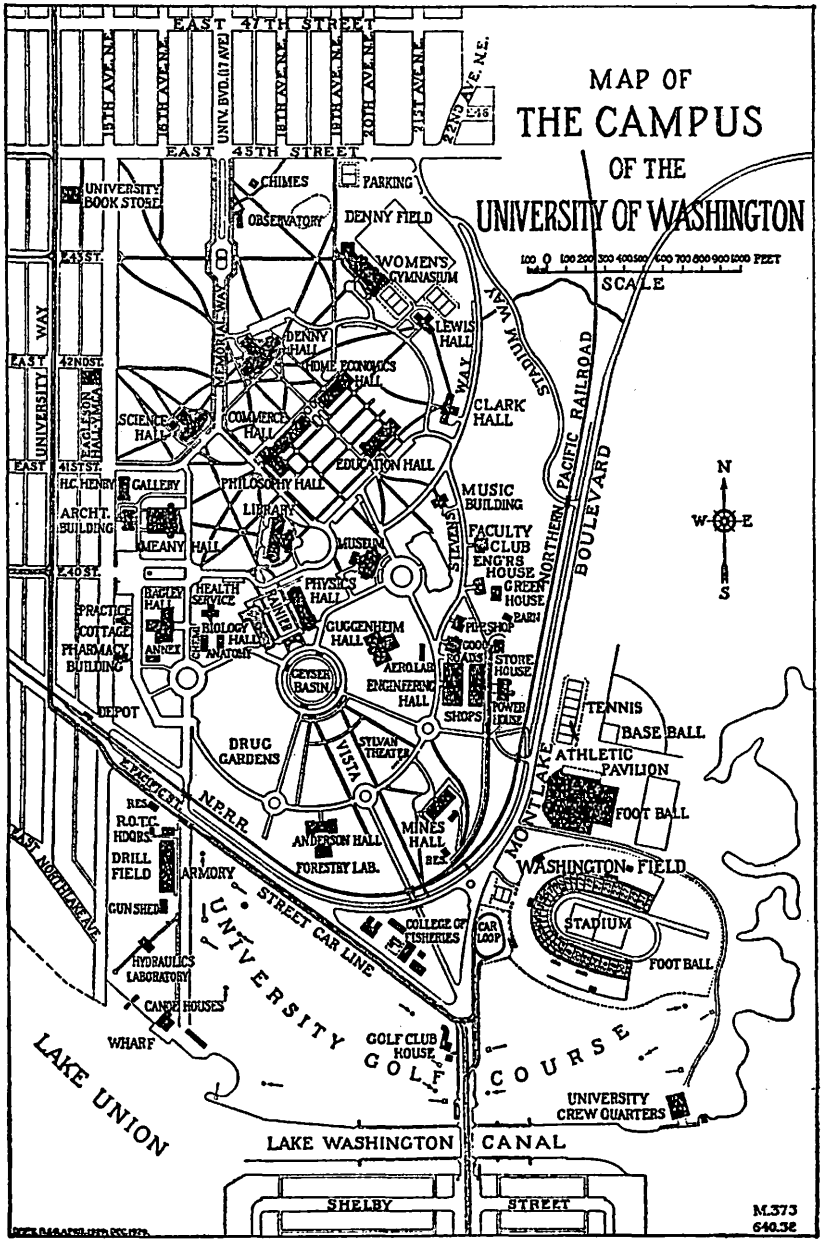
SEATTLE, WASHINGTON

June, 1930

Seattle
University of Washington Press
1930

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.



The University campus, comprising 582 acres, lies between Fifteenth Avenue Northeast and Lake Washington, and East Forty-fifth Street and Lake Union. Ravenna and Cowen Park cars run one block west of the campus. The offices of administration are located in Education Hall and are best reached by leaving the car at East Forty-second Street and University Way.

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THE UNIVERSITY CALENDAR
1930-1931

AUTUMN QUARTER

Registration dates.....May 12 to June 6; June 30 to August 28; September 24 to 27, 12 m., inclusive.
Latest day for securing reserved sections by payment of fees...Saturday, Sept. 27, 12 m.
Latest day for registration without penalty.....Saturday, September 27, 12 m.
Freshman Week.....Begins Monday, Sept. 29, 8 a.m.; ends Tuesday, Sept. 30, 10 p.m.
Instruction begins.....Wednesday, October 1, 8 a.m.
President's Annual Address.....Friday, October 3, 11 a.m.
Regular meeting of Faculty.....Tuesday, October 21, 4 p.m.
Latest day for receiving W's without grade.....Tuesday, October 28, 4:30 p.m.
Thanksgiving recess begins.....Wednesday, November 26, 6 p.m.
Thanksgiving recess ends.....Monday, December 1, 8 a.m.
Regular meeting of Faculty.....Tuesday, December 9, 4 p.m.
Instruction ends.....Friday, December 19, 6 p.m.

WINTER QUARTER

Registration dates for students in residence.....November 3 to December 19.
Registration dates for students not in residence.....November 3 to January 3.
Latest day for securing reserved sections by payment of fees for students who preregister.....Tuesday, December 30.
Latest day for registration without penalty.....Saturday, January 3, 12 m.
Instruction begins.....Monday, January 5, 8 a.m.
Regular meeting of Faculty.....Tuesday, January 27, 4 p.m.
Latest day for receiving W's without grade.....Saturday, January 31, 12 m.
Washington's birthday (Founders' Day).....Monday, February 23.
Regular meeting of Faculty.....Tuesday, March 10, 4 p.m.
Instruction ends.....Friday, March 20, 6 p.m.

SPRING QUARTER

Registration dates for students in residence.....February 9 to March 20.
Registration dates for students not in residence.....February 9 to March 28.
Latest day for securing reserved sections by payment of fees for students who preregister.....Wednesday, March 25.
Latest day for registration without penalty.....Saturday, March 28, 12 m.
Instruction begins.....Monday, March 30, 8 a.m.
Regular meeting of Faculty.....Tuesday, April 21, 4 p.m.
Latest day for receiving W's without grade.....Saturday, April 25, 12 m.
Campus Day.....Friday, April 24.
Regular meeting of Faculty.....Tuesday, June 2, 4 p.m.
Memorial Day (holiday).....Saturday, May 30.
Instruction ends.....Friday, June 12, 6 p.m.
Class Day and Alumni Day.....Saturday, June 13.
Baccalaureate Sunday.....Sunday, June 14.
Commencement.....Monday, June 15.

SUMMER QUARTER
1931

Registration dates.....April 27 to June 13, 12 m.
Latest day for securing reserved sections by payment of fees for students who preregister (first term).....Saturday, June 13, 12 m.
Special registration day.....Tuesday, June 16.
Instruction begins.....Wednesday, June 17, 8 a.m.
Latest day for receiving W's without grade (first term).....Tuesday, June 30, 4:30 p.m.
Independence Day (holiday).....Saturday, July 4.
Latest day for receiving W's without grade (full quarter)....Tuesday, July 14, 4:30 p.m.
First term ends.....Friday, July 24, 6 p.m.
Latest day for securing reserved sections by payment of fees (second term).....Friday, July 24.
Second term begins.....Monday, July 27, 8 a.m.
Latest day for receiving W's without grade (second term).Saturday, August 8, ~~4:30 p.m.~~ 12 m.
Instruction ends.....Thursday, August 27, 6 p.m.

THE BOARD OF REGENTS

A. H. B. JORDAN, President.....Everett
Term ends March, 1934

JAMES V. PATERSON, Vice-President.....Seattle
Term ends March, 1934

PAUL H. JOHNS, Secretary.....Tacoma
Term ends March, 1932

J. D. FARRELL.....Seattle
Term ends March, 1935

ROSCOE A. BALCH.....Spokane
Term ends March, 1933

J. M. PERRY.....Yakima
Term ends March, 1932

JOSEPH EDWARD LEASE.....Centralia
Term ends March, 1935

HERBERT THOMAS CONDON, Assistant Secretary to the Board

COMMITTEES OF THE BOARD OF REGENTS

OCEANOGRAPHICAL LABORATORIES.....Lease, chairman; Perry, Paterson

CO-OPERATION.....Perry, chairman; Lease, Paterson

STUDENT WELFARE.....Lease, chairman; Balch, Perry

BUILDINGS AND GROUNDS.....Farrell, Johns, chairmen; Paterson, Jordan

FINANCES.....Johns, chairman; Farrell, Balch

LANDS.....Balch, chairman; Johns, Jordan

METROPOLITAN LEASE.....Farrell, chairman; Jordan, Johns

OFFICERS OF ADMINISTRATION

The University

MATTHEW LYLE SPENCER, Ph.D., LL.D.....President of the University
Education Hall

DAVID THOMSON, B.A.....Dean of Faculties
Education Hall

FREDERICK MORGAN PADELFORD, Ph.D.....Assistant Dean of Faculties
Education Hall

HERBERT THOMAS CONDON, LL.B.....Comptroller
Education Hall

EDWIN BICKNELL STEVENS, M.A.....Registrar
Education Hall

WINNIFRED SUNDERLIN HAGGETT, M.A.....Dean of Women
Education Hall

WILLIAM R. WILSON, Ph.D.....Director, Personnel Work
Philosophy Hall

JOHN H. FAWCETT, B.A.....Men's Personnel Officer
Education Hall

WILLIAM D. TAYLOR, JR., B.A.....Men's Personnel Officer
Education Hall

The Colleges and Schools

DUDLEY DAVID GRIFFITH, Ph.D.....Dean of the College of Liberal Arts
Denny Hall

HENRY LANDES, M.A.....Dean of the College of Science
Science Hall

WILLIAM EDWARD COX, M.A.....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
Engineering Hall

IRVING MACKEY GLEN, M.A.....Dean of the College of Fine Arts
Music Building

HUGO WINKENWERDER, M.F.....Dean of the College of Forestry
Anderson Hall

VERNON McKENZIE, M.A.....Dean of the School of Journalism
Commerce Hall

HAROLD SHEPHERD, B.A., J.D.....Dean of the School of Law
Commerce Hall

WILLIAM ELMER HENRY, M.A.....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

FREDERICK MORGAN PADELFORD, Ph.D.....Dean of the Graduate School
Denny Hall

The Summer Quarter

HENRY ALFRED BURD, Ph.D.....Director
Education Hall

The Extension Service

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

THE UNIVERSITY FACULTY

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

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

Faculty in the Order of Academic Seniority

For alphabetical list with academic histories, see page 14.

Professors

Landes, Henry
Meany, Edmond Stephen
Kincaid, Trevor
Padelford, Frederick Morgan
Roberts, Milnor
Osborn, Frederick Arthur
Savery, William
Thomson, David
Johnson, Charles Willis
Frein, Pierre Joseph
Frye, Theodore Christian
Moritz, Robert Edouard
Magnusson, Carl Edward
Lantz, Harvey
Eastwood, Everett Owen
Henry, William Elmer
Hall, David Connolly
Gowen, Herbert Henry
Richardson, Oliver Huntington
Goodner, Ivan Wilbur
Glen, Irving Mackey
More, Charles Church
Benson, Henry Kreitzer
Weinzirl, John
Winkenwerder, Hugo
Bolton, Frederick Elmer
Vickner, Edwin John
Raitt, Effie Isabel
Smith, Stevenson
Bissett, Clark Prescott
Benham, Allen Rogers
Ayer, Leslie James
Dehn, William Maurice
Woolston, Howard
Smith, George McPhail
Kirkland, Burt Persons
Gould, James Edward
Weaver, Charles Edwin
Umphrey, George Wallace
Worcester, John Locke
Preston, Howard Hall
Loew, Edgar Allen
Daniels, Joseph
Kirsten, Friedrich Kurt
Haggett, Winnifred Sunderlin
Cox, William Edward
Cory, Herbert Ellsworth
Dakan, Carl Spencer
Wilson, George Samuel
Harris, Charles William
Martin, Charles Emanuel
Winger, Roy Martin
Smith, Charles Wesley
Carpenter, Allen Fuller
Cox, Edward Godfrey
McKenzie, Roderick Duncan
Thomas, Harlan
Sidey, Thomas Kay
McMahon, Edward
O'Bryan, Joseph Grattan
Winslow, Arthur Melvin
Tartar, Herman Vance
Burd, Henry Alfred
Griffith, Dudley David
Coon, Shirley Jay
Nottelmann, Rudolph H.
Matthews, Harry Thomas
McKenzie, Vernon
Rigg, George Burton
Rosen, Moritz
Venino, Albert Franz
Wood, Carl Paige
Skinner, Macy Milmore
Lynn, Eldin V.
Langenhan, Henry August
Guthrie, Edwin R.
Wilson, Hewitt
Orr, Frederick W.
Uhl, Willis Lemon
Patzer, Otto
Smith, Harry Edwin
Isaacs, Walter F.
Grondal, Bror Leonard
McMahon, Theresa Schmid
Carkeek, Vivian Morgan
Thompson, Thomas Gordon
Bishop, Eugene A.

McCormack, Harvey William
Mechem, Frank Lawrence
Spier, Leslie
Taylor, Edward Ayres
Wilson, William R.
Tyler, Richard G.
May, Charles Culbertson
Cole, Thomas R.
Guberlet, John E.
Hughes, Glenn
Thompson, W. F.
Barnes, Donald G.
Shepherd, Harold

Associate Professors

Milliman, Loren Douglas
Brakel, Henry Louis
Goggio, Charles
Jones, Robert William
Denny, Grace Goldena
Anderson, Samuel Herbert
Gross, Mary Emma
Newenham, Frances Dickey
Harrison, Joseph Barlow
Jessup, John H.
Gavett, George I.
Eckelman, Ernest Otto
Lucas, Henry S.
Esper, Erwin A.
Renner, George T.
Stone, Edward N.
Smith, E. Victor
Densmore, Harvey
Hotson, John W.
Goodspeed, George E.
Williams, Curtis T.
DeVries, Louis P.
Gregory, Homer E.
Wilcox, Elgin Roscoe
Price, Maurice T.
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
Ashley, Paul P.
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.
Mander, Linden A.
Martin, Howard Hanna
Rowntree, Jennie Irene
Utterback, Clinton L.
Wilson, Francis G.

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
Cole, Kenneth Carey
Lawrence, Charles Wilson
Griffin, Eldon
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.
Foote, Ernest A.
Stern, Bernhard J.
McFarlan, Lee A.
McKay, George
Benson, Edna
Luce, Dean
Norris, Earl R.
Brandstrom, Axel
Groth, J. H.
Chessex, Jean C. W.
Rahskopf, Horace
DeVries, 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.
Hamlin, Arthur LeRoy
Kelley, Frank H.
Quinby, Charles F. M. S.
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
Foster, Frank K.
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, Edward
Orsatti, Piero

Lecturers

McConahey, James
Robertson, James Postlewait
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.

Instructors

Kirchner, George
Chittenden, Hiram Martin Jr.
Dobie, Edith
Sivertz, Victorian
Markey, Helen Buck
Smith, Frederick Charnley
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.
Gunn, Elizabeth
Terrell, Margaret E.
Moritz, Harold K.
Rowlands, T. McKee
Newbury, Kirsten Larsson
Jacobs, Melville
Byers, Maryhelen
Grant, Ruth
Robinson, Rex J.
Wintermute, Edwin H.
Penington, Ruth
Cornu, Donald
Cain, Russell
Mackenzie, Donald H.
Spier, Erna Gunther
Welke, Walter
Kenworthy, Ray W.
Brown, Robert Quixote
Eastman, Frederick S.
Sergev, Sergius I.
Tymstra, Sybren Ruurd
Andrews, Siri
Hathway, Marion
Wilson, Clotilde
Evans, Clementine C.
Lang, Joseph William
O'Keefe, Jessie
Oliver, Louise Benton
Terry, Miriam
Torney, John
Woodcock, Edith

ASSOCIATES

Worman, Eugenie
Radford, Ethel Sanderson
Kerrigan, Sylvia Finlay
Vickner, Bertha Almen
Soule, Elizabeth
Edmundson, Clarence
Hamilton, Rachel Elizabeth
Buchanan, Iva
Graves, Dorsett
Lawson, Jane Sorrie
Bogardus, Alice Coleman
Putnam, Marguerite
Hall, Amy Violet
Wesner, Elenora
Brown, Lois Eula
Wagenknecht, Edward C.
Higgs, Paul
Hamack, Frank Hartmond
Rulifson, Leone Helmich
Terzieff, Ottilie
Davis, Erma Nelson
Ballaine, Genevieve Knight
Ankele, Felicie C.
Ulbrickson, Alvin
Goodsell, Julia
Nix, Martha
Glover, Harriet F.
Boxall, Edith A.
Hermans, Thomas G.
Berry, James A.
Coventry, Edwin J.
Phifer, Lyman D.
Maydahl, Bergete
Davidson, Lucy W.
Adams, Henrietta
Butterworth, Joseph
Haas, Harold Milburn
Wheeler, Bayard O.
Walters, Margaret
Martin, Robert R.
Lopatin, I. A.
Kahin, Helen
Anderson, Katherine
Phelan, James
Lamont, D. J.
Collins, Edward
Welch, Ralph
Wilcox, Chester
Phillips, Herbert Joseph
Reed, Florence

ASSISTANTS FOR 1929-30

Bacteriology

Bradshaw, Grace E., B.S.
Fisk, Roy, B.S.
Hendrickson, Freda, B.S.
Hirschman, Joy, B.S.
McFarlane, Vernon H., B.S.
Thayer, J. D., B.S.
Van Leeuven, Ray, B.S.

Botany

Hollingshead, John Hinton, B.A.

Business Administration

Ball, Lee C., B.S.
Capen, Donald, B.B.A.
Happ, Howell, B.B.A.
Johnson, Verner, B.A.
Pelz, Freda, B.B.A.
Wann, A. W., B.B.A.

English

Anderson, Victoria, B.A.
Atkinson, Dorothy, B.A., M.A.
Beal, Maud L., B.A.
Burgess, Jennie P., B.A., M.A.
Mark, Sara Norris, B.A., M.A.
Pellegrini, Angelo, B.A.
Person, Henry A., B.A.
Windhusen, Anne, B.A.

History

Jensen, Merrill, B.A.

Home Economics

Hurlburt, Grace K., B.S.
Simon, Esther Biermon, B.S.

Mathematics

Hardy, Martha Elizabeth, B.A.

Music

Anderson, Iris Canfield, B.M.
Plamondon, Vivienne, B.M.

Physical Education for Men

Kunde, Norman, B.S.

TEACHING FELLOWS FOR 1929-30

Anatomy
Kingston, George R., B.S.

Anthropology
Hill, Willard W., B.A.

Botany
O'Leary, Keith, B.S.
Southard, Lloyd C., B.S.

Business Administration
Davison, Elmer E., B.B.A.
Day, George, B.B.A.
Tuttle, Valgene, B.A.
Whitelaw, John W., B.A.

Chemistry
Anderson, Lucile, B.S.
Capps, Hubert Harold, B.A.
Christensen, Bert E., B.S.
Church, Anna Edsall, B.S.
Conrad, Frank H., B.S.
Evans, Lacey H., B.S.
Hicks, J. F. G., Jr., B.S.
McClain, Hubert Kenneth, B.S.
Mitchell, Raymond L., B.S.
Rice, Maude Ruth, B.S.
Schimke, Harold S., B.S.
Seymour, Keith M., B.S.
Shinn, Helen R., B.A.
Thomas, Bertram D., B.S.
Todd, Seldon P., B.S.
Wirth, Henry E., B.S.
Wright, Calvert C., B.S.

English
Brooks, Leslie D. G., B.A.
Burns, Harry, B.A.
Cheledin, Algerdas, B.A.
Cornu, Elizabeth, B.A.
Godden, Robert Wayne, B.A.
Kuhn, Bertha M., B.A.
Le Blanc, Katherine M., B.A., LL.B.
MacLean, James B., B.A.
Matthews, Gwladys, B.A.
Norrie, James L., Jr., B.A.
St. Clair, Laura, M.A.
Stafford, John B., B.A.
Stead, George A., B.A.
Stirling, Brents, LL.B.
Strother, Charles R., B.A.
Williams, Weldon, B.A., M.A.
Zillman, Lawrence J., B.A.

Geology and Geography
Chappell, Walter M., B.A.

Journalism
Stewart, Ruth, B.A.

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

Mines
Butler, Charles, B.S.
Curtis, Carl Edward, B.A., M.S.
Kriegel, W. Wurth, B.S. (C.E.)
Porter, Carroll B., B.A.

Oriental Studies
Chang, Hugh, B.A., M.A.

Pharmacy
Britt, Lewis C., B.S., M.S.
Evans, Clementine, B.S., M.S.
Hayden, Alice H., B.S., M.S.
Jorgensen, Paul S., B.S.
Poole, Abigail B., B.S., M.S.
Tobey, Lono W., B.S.

Physical Education for Men
Harby, Sam, B.A.
Peek, Clifford, B.S.

Physical Education for Women
Shapley, Elizabeth, B.S.
Wright, Monica, B.S.

Physics
Badgley, Ralph E., B.A.
Geer, Willard, B.S.
Gideon, Edith, B.S.
Jordan, E. B., B.A.
Knappe, Roger, B.A.
Lemery, Frances, B.A.
Rushing, John R., B.S.
Williams, Allan, B.A.

Political Science
Barbour, Dana M., B.A.
Dilley, Marjorie, B.A., M.A.

Psychology
Fowler, Sophia, B.A.
Ryder, Florence, B.A.

Romanic Languages
Bayley, Nettie, B.A.
Laird, Thelma, B.A., M.A.
Newberry, Amelia, B.A., M.A.
Porep, Helen, B.A.
Smith, Katherine Macrae, B.A.
Murdy, Iris V., B.A.
Van Gilder, Florence, B.A.

Zoology
Johnson, Martin, B.S.
Jones, Mildred, B.S.
Thompson, Catherine, B.S.
Wells, Marjorie, B.S.

ALPHABETICAL LIST OF THE UNIVERSITY FACULTY 1930-31

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.....*Associate in Nursing*
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.

Anderson, Katherine.....*Associate in Library Science*
B.S. (L.S.), Washington, 1928.

Anderson, Samuel Herbert.....*Associate Professor of Physics*
B.A., Park College, 1902; M.A., 1903; Ph.D., Illinois, 1912.

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.

Ashley, Paul Pritchard.... *Associate Professor of Business Administration*
LL.B., Washington, 1925.

Auernheimer, August.....*Instructor in Physical Education for Men*
B.Ph.Edu., Normal School of Gymnastic Union, Indianapolis. 1926.

Ayer, Leslie James...*Professor of Law; Acting Dean of the School of Law*
B.S., Upper Iowa, 1899; J.D., Chicago, 1906.

Bachman, Paul.....*Visiting Associate Professor of Political Science*
M.A., Washington, 1925; Ph.D., 1927.

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, 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.S., 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.

Benson, Henry Kreitzer.....*Professor of Chemical Engineering*
B.A., Franklin and Marshall, 1899; M.A., 1902; D.Sc., 1926; Ph.D., Columbia, 1907.

Berry, James A.....*Associate in Bacteriology*
B.S., M.S., Michigan State College, 1917.

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.

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.

Bolton, Lloyd L.....*Acting Instructor in Zoology*
B.A., British Columbia, 1922; M.A., 1924.

Boxall, Edith A.....*Associate in Latin and Greek*
B.A., New Brunswick, 1906; M.A., Chicago, 1911.

Brakel, Henry Louis.....*Associate Professor of Engineering Physics*
B.A., Olivet, 1902; M.A., Washington, 1905; Ph.D., Cornell, 1912.

Brandstrom, Axel John Felix.....*Assistant Professor of Forestry*
B.S.F., Washington, 1919.

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.

Buchanan, Iva.....*Associate in History*
B.A., Washington, 1907; M.A., 1920; Ph.D., 1930.

Burd, Henry Alfred, *Professor of Business Administration; Director of the Summer Quarter*
B.S., Illinois Wesleyan, 1910; M.A., Illinois, 1911; Ph.D., 1915.

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.

Carkeek, Vivian Morgan.....*Professor of Law*
LL.B., Washington, 1901.

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.

Chittenden, Hiram Martin.....*Instructor in 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.

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.

Collins, Edward.....*Associate in Physical Education for Men*
B.A., Notre Dame, 1930.

Conway, John Ashby.....*Assistant Professor of English*
B.A., Carnegie Institute of Technology, 1927.

Coon, Shirley Jay.....*Professor of Economics and Business Administration*
B.A., Beloit College, 1909; M.A., Ohio State, 1915; Ph.D., Chicago, 1926.

Cooper, James G., First Lieutenant, Infantry, *Assistant Professor of Military Science and Tactics*

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.

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; Dean of the College of Business Administration*
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.....*Associate in 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.

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.

Dvorak, August.....*Associate Professor of Education*
B.A., Minnesota, 1920; Ph.D., 1923.

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; 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.

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, Clementine C.....*Instructor in Pharmacy*
Ph.C., Washington, 1926; B.S. (Pharmacy), 1927; M.S. (Pharmacy), 1928.

Farquharson, Frederick Burt....*Assistant Professor of General 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.

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, Frank K.....*Assistant Professor of Education*
B.Ed., Washington, 1921; M.A., 1923; Ph.D., 1929.

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.

Garcia-Prada, Carlos.....*Assistant Professor of Spanish*
B.A., Colegio del Rosario, 1918; M.A., Michigan, 1924; Ph.D., Bogota, 1929.

Gavett, George Irving.....*Associate Professor of Mathematics*
B.S. (C.E.), Michigan, 1893.

Gillette, Alletta Maria.....*Associate in English*
B.A., Smith, 1907; M.A., Washington, 1911.

Glen, Irving Mackey..*Professor of Music; Dean of the College of Fine Arts*
B.A., Oregon, 1894; M.A., 1897.

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, Jr.....*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.

Grant, Ruth.....*Instructor in Business Administration*
B.B.A., Washington, 1925; M.B.A., 1928.

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.

Griffin, Eldon.....*Assistant Professor of Oriental Studies*
B.A., Harvard, 1916.

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.

Groth, 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.

Gunn, Elizabeth.....*Assistant Physician; Instructor in Hygiene*
B.S., Washington. 1923; M.D., Oregon, 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.....*Associate in Business Administration*
B.S. (M.E.), Purdue, 1911.

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, James Kendall.....*Associate Professor of Business Administration*
B.A., Oregon, 1925; M.A., 1926; Ph.D., Stanford, 1929.

Hall, R. A., Lieutenant Commander, U.S.N.,*Assistant Professor of Naval Science and Tactics*

Hamack, Frank Hartmond.....*Associate and Advisor in Business Administration*
LL.B., Georgetown, 1916.

Hamilton, Rachel Elizabeth.....*Associate in French*
B.L., Whitman, 1910; M.A., Washington, 1924.

Hamlin, Arthur LeRoy, Lieutenant, U.S.N., *Assistant Professor of Naval Science and Tactics*
Graduate, U.S. Naval Academy, 1922.

Harrar, Ellwood Scott.....*Instructor in Forestry*
B.S., Syracuse, 1927; M.S., 1928.

Harris, Charles William.....*Professor of Hydraulic Engineering*
B.S. (C.E.), Washington, 1903; C.E., Cornell, 1905.

Harrison, Joseph Barlow.....*Associate Professor of English*
B.A., Washington, 1910; B.A., Oxford, 1913.

Hatch, Melville H.....*Assistant Professor of Zoology*
B.A., Michigan, 1919; M.A., 1921; Ph.D., 1925.

Hathway, Marion.....*Instructor in Sociology*
B.A., Radcliffe, 1916; M.A., Chicago, 1927.

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; Professor of Library Science; Dean of the Library School*
B.A., Indiana, 1891; M.A., 1892.

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.....*Associate 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.

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.

Jacobsen, Philip A.....*Instructor in General Engineering*
B.S., Washington, 1926.

Jacobsen, Theodore Siegumteldt.....*Assistant Professor of Astronomy and Mathematics*
B.A., Stanford, 1922; Ph.D., California, 1926.

Jerbert, Arthur Rudolph.....*Assistant Professor of Mathematics*
B.S., Washington, 1916; M.S., 1923; Ph.D., 1928.

Jessup, John H.....*Associate Professor of Education*
B.A., Earlham College, 1920; M.A., Iowa, 1924.

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.

Kirchner, George.....*Instructor in Music*
Leipzig.

Kirkland, Burt Persons.....*Professor of Forestry*
B.A., Cornell, 1905.

Kirsten, Friedrich Kurt.....*Professor of Aeronautical Engineering*
B.S., Washington, 1909; E.E., 1914.

Lamont, D. J.....*Associate in Physical Education for Men*
LL.B., Loyola University, 1925.

Landes, Henry.....*Professor of Geology and Mineralogy; Dean of the College of Science*
B.A., Indiana, 1892; B.A., Harvard, 1892; M.A., 1893.

Lang, Joseph William.....*Instructor in Chemical Engineering*
B.S. (Ch.E.), Washington, 1928.

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.

Lindblom, Roy Eric.....*Assistant Professor of Electrical Engineering*
B.S. (E.E.), Washington, 1922; M.S. (E.E.), 1929.

Loew, Edgar Allen.....*Professor of Electrical Engineering*
B.S. (E.E.), Wisconsin, 1906; E.E., 1922.

Lopatin, I. A.....*Associate in Anthropology*
M.A., British Columbia, 1929.

[1]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.

Lynn, Eldin Verne.....*Professor of Pharmacology and Chemistry*
B.A., Washington, 1909; M.A., Wisconsin, 1910; Ph.D., 1918.

McConahey, James.....*Lecturer in Business Administration*
B.S., Washington and Jefferson, 1896; M.S., 1899; LL.B., Northwestern, 1899; C.P.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. (Education), 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.

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.

[1]McKenzie, Roderick D.....*Professor of Sociology*
B.A., Manitoba, 1912; Ph.D., Chicago, 1920.

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.

Mackenzie, Donald H.....*Instructor in Business Administration*
B.B.A., M.B.A., Washington, 1925.

Magnusson, Carl Edward.....*Professor of Electrical Engineering; Director 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. (Education), Washington, 1929.

Martin, Charles Emanuel.....*Professor of Political Science*
B.L., California, 1914; M.A., 1915; Ph.D., Columbia, 1917.

Martin, Howard Hanna.....*Associate Professor of Geography*
B.S., Pennsylvania, 1922; M.A., George Washington, 1923; Ph.D., 1929.

[1] Absent on leave, 1930-31.

Martin, Robert R.....*Associate in Sociology*
B.A., Washington, 1928; M.A., 1929.

Matthews, Harry Thomas, Colonel, U.S. Army, Retd.....*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.

Meisnest, Frederick William.....*Lecturer in German*
B.S., Wisconsin, 1893; Ph.D., 1904.

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.

[1]Miller, Robert Cunningham.....*Assistant 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.

Milner, Fred C., Captain Infantry, *Assistant Professor of Military Science and Tactics*

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 General 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.N.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.

Nelson, Edward.....*Assistant Professor of Philosophy*
Ph.D., Harvard, 1929.

[1] Absent on leave, 1930-31.

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., 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.

Orsatti, Piero.....*Assistant Professor of Music*
Pupil of Braggiotti, Marchesi, Lombardi, and Giroud.

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 Dean of Faculties*
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.

Patzer, 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.

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.....*Associate in Botany; Assistant Director of Oceanographical Laboratories*
B.S., Washington, 1928; M.S., 1929.

Phillips, Herbert Joseph.....*Associate in Philosophy*
B.A., Washington, 1920.

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.

Price, Maurice Thomas.....*Associate Professor of Sociology*
B.A., Chicago, 1910; Diploma, Rochester Theological Seminary, 1913;
M.A., Chicago, 1914; Ph.D., 1924.

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*
B.A., Washington, 1921; B.S. (L.S.), 1923.

Quainton, Cecil Eden.....*Assistant Professor of History*
B.A., Manitoba, 1918; B.A., Cambridge, 1924.

Quinby, Charles Fenton Mercer Spotswood, Lieutenant, U.S.N., *Assistant Professor of Naval Science and Tactics*
Graduate, U.S. Naval Academy, 1921.

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.....*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.....*Associate 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, Helen Neilson.....*Assistant Professor of Design*
National Academy of Design; Columbia; B.A., Washington, 1927.

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.

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.

Robertson, James Postlewait.....*Lecturer in Accounting*
C.P.A.

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.

Schultz, Leonard Peter.....*Instructor in Fisheries*
B.A., Albion College, 1924; M.S., Michigan, 1926.

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.

[2]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, 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 in Nursing Education*
Graduate, Malden, Massachusetts, Hospital School of Nursing, 1907;
B.A., Washington, 1926.

Spencer, Carrie E.....*Associate in Physical Education for Women*
B.S. (P.E.), Syracuse, 1923.

Sperlin, Ottis Bedney.....*Lecturer in English*
B.A., Indiana University, 1903; Ph.M., Chicago, 1908.

Spier, Erna Gunther.....*Instructor in Anthropology; Assistant Director of the Museum*
B.A., Barnard, 1919; M.A., Columbia, 1920; Ph.D., 1926.

Spier, Leslie.....*Professor of Anthropology; Director of the Museum*
B.S., College City of New York, 1915; Ph.D., Columbia, 1920.

Stern, Bernhard J.....*Assistant Professor of Sociology*
B.A., Cincinnati, 1916; M.A., 1917; Ph.D., Columbia, 1927.

Stone, Edward Noble.....*Associate Professor of Classical Languages*
B.A., Olivet College, 1891; M.A., 1893.

[2]Appointment effective, Oct. 1, 1931.

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, Ottilie.....*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; Director of Oceanographical Laboratories*
B.A., Clark, 1914; M.S., Washington, 1915; Ph.D., 1918.

Thompson, William F.....*Research Professor of Fisheries*
B.A., Stanford, 1911.

Thomson, David.....*Professor of Latin; Dean of Faculties*
B.A., Toronto, 1892.

Thorp, Don James.....*Assistant Health Officer*
B.A., Michigan, 1921; B.S., 1923; M.D., 1927.

Torney, John.....*Instructor in Physical Education for Men*
B.S., Washington, 1928; M.A., Columbia, 1930.

Tortorich, D. J., Lieutenant (Jg.), U.S.N., *Assistant Professor of Military 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.....*Associate 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.

Wilson, 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.....*Instructor in Spanish*
B.A., Montana, 1922; M.A., Washington, 1925; Ph.D., 1928.

Wilson, William R...*Professor of Psychology; Director of Personnel Work*
B.A., Washington, 1917; M.S., 1920; Ph.D., 1925.

Wiltamuth, Ralph, First Lieutenant, 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.

Wood, Carl Paige.....*Professor of Music*
B.A., Harvard, 1906; M.A., 1907.

Woodcock, Edith.....*Instructor in Music*
B.M., Rochester.

Woolston, Howard.....*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.

[1]Worden, Ruth.....*Assistant Professor of Library Science*
B.A., Wellesley, 1911.

Worman, Eugenie Hutchinson.....*Associate in Fine Arts*
Pratt Institute.

Young, Courtney P., First Lieutenant, C.A.C., *Assistant Professor of Military Science and Tactics*
Graduate, U.S. Military Academy, 1920.

[1] Absent on leave, 1930-31.

LIBRARY STAFF

Henry, William Elmer, M.A.....*Emeritus Librarian*
Smith, Charles Wesley, B.A., B.L.S.....*Librarian*
Beardsley, Arthur Sidney, LL.B., B.S. (L.S.), Ph.D.....*Law Librarian*
Putnam, Marguerite Eleanor, B.A., B.S. (L.S.).....*Acquisitions Librarian*
Edwards, Thelma Lillian, B.A., B.S. (L.S.).....*Catalogue Librarian*
Johns, Helen, B.A., Cert. (L.S.).....*Circulation Librarian*
Batcheller, Elva Lenore, B.A., B.S. (L.S.).....*Reference Librarian*
Hale, Ruth Elinor, B.A., B.S. (L.S.).....*Senior Assistant, Acquisitions Division*
Heathcote, Lesley Muriel, M.A., B.S. (L.S.).....*Senior Assistant, Acquisitions Division*
McCutchen, Lydia May, B.A., Cert. (L.S.).....*Senior Assistant, Acquisitions Division*
Lehde, Constance, B.S. (L.S.).....*Junior Assistant, Acquisitions Division*
Moseley, Maud, B.S. (L.S.).....*Junior Assistant, Acquisitions Division*
Campbell, Freda, B.A., B.S. (L.S.).....*Senior Assistant, Catalogue Division*
Grier, Mary Catharine, B.S., B.S. (L.S.), *Senior Assistant, Catalogue Division*
Swain, Olive, B.S., B.S. (L.S.).....*Senior Assistant, Catalogue Division*
Tucker, Lena Lucile, B.S. (L.S.), M.A., *Senior Assistant, Catalogue Division*
Betts, Rachel Mary, B.S., B.S. (L.S.), *Senior Assistant, Circulation Division*
Cavitt, Mary, B.A., B.S. (L.S.).....*Senior Assistant, Circulation Division*
Falkoff, Emma, B.A., B.S. (L.S.).....*Senior Assistant, Circulation Division*
Lyons, Hermiena Mary, B.A., B.S. (L.S.).....*Senior Assistant, Circulation Division*
Cooper, Dorothy Margaret, B.S. (L.S.).....*Junior Assistant, Circulation Division*
Dagg, Helen Gertrude, B.S. (L.S.)....*Junior Assistant, Circulation Division*
Moore, Helen Mary, B.S. (L.S.).....*Junior Assistant, Circulation Division*
Bollinger, Mary Elizabeth, B.A., B.S. (L.S.).....*Senior Assistant, Reference Division*
Christoffers, Ethel Margaret, Ph.B., B.S. (L.S.).....*Senior Assistant, Reference Division*
Gilchrist, Madeline, B.A., B.S. (L.S.)...*Senior Assistant, Reference Division*
Jones, Winnifred, B.S., B.S. (L.S.)....*Senior Assistant, Reference Division*
Kittell, George Henry, B.A., B.S. (L.S.).....*Senior Assistant, Reference Division*
Todd, John Ronald, B.A., B.S. (L.S.)...*Senior Assistant, Reference Division*
White, Frances Dunbar, B.A. B.S. (L.S.).....*Senior Assistant, Reference Division*
Johnston, Iris Francelle, B.S. (L.S.)....*Junior Assistant, Reference Division*
Pineo, Eleanor Wickwire, B.A., B.S. (L.S.).....*Assistant to the Librarian*

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.....*First Lieutenant, 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, U.S. Navy*
Quinby, Charles F. M. S.....*Lieutenant, U.S. Navy*
Hamlin, Arthur LeRoy.....*Lieutenant, U.S. Navy*
Tortorich, D. J.....*Lieutenant (Jg.), 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 Turrett Captain, U.S.N.R.*
Dunlap, Clarence E.....*Chief Signalman, U.S.N.R.*

ASSISTANT ADMINISTRATIVE OFFICERS

Reinhard, Ethel Orvis, B.A.....*Secretary to the President*
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*
Terrell, Margaret E., M.A.....*Director of Dormitories and Dining Halls*
Hoffman, Paul.....*Auditor*

OFFICE OF THE COMPTROLLER

Condon, Herbert T., LL.B.....*Comptroller*
Wilson, Aimee.....*Secretary to the Comptroller*
Butterbaugh, Grant, M.B.A.....*Assistant Comptroller*
Stuart, Charles K., LL.B.....*Cashier*
Hipkoe, Max.....*Assistant Purchasing Agent*
May, Charles C., B.S. (C.E.).....*Superintendent of Buildings and Grounds*

OFFICE OF THE REGISTRAR

Stevens, Edwin Bicknell, M.A.....*Registrar*
Ollis, Alice M.....*Assistant to the Registrar*
Ewell, Frances M.....*Assistant for Schedules and Secretary to the Registrar*
Willard, Frances, B.A.....*Credentials Assistant*
Creer, Ruth.....*Registration Assistant*
Brugger, Minnie Kraus, B.A.....*Graduation Assistant*
Pepper, Leah H.....*Recording Assistant*

THE MUSEUM

Spier, Leslie, Ph.D.....*Director of the Museum*
Rathbun, Samuel F.....*Honorary Curator of Birds*

THE HENRY ART GALLERY

Isaacs, Walter F., B.S. (F.A.).....*Director of the Gallery*
Savery, Hallie.....*Curator*

ENGINEERING EXPERIMENT STATION

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

OCEANOGRAPHICAL LABORATORIES

Thompson, Thomas Gordon, Ph.D.....*Director*

STATE CHEMIST

Johnson, Charles Willis, Ph.C., Ph.D.....*Director*

NORTHWEST EXPERIMENT STATION, UNITED STATES BUREAU OF MINES

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

UNIVERSITY HEALTH SERVICE

Hall, David Connolly, M.D.....*University Health Officer*
Thorp, Don James, M.D.....*Assistant*
Gunn, Elizabeth, M.D.....*Assistant*
Reeder, Maude, R.N.....*Superintendent, Infirmary*

BOARDS AND COMMITTEES

1930-1931

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

Administrative Boards

Admissions.....The Board of College Deans

Board of Deans—Thomson, Burd, Cox, Glen, Haggett, Henry, Johnson, Landes, V. McKenzie, Padelford, Roberts, Stevens, Tyler, Uhl, Winkenwerder.

Buildings—May (1933), Stevens (1933), Thomas (1932), Thomson (1931), Wilcox (1931).

Schedule and Registration—Stevens (1933), Butterbaugh (1931), Carpenter (1932), Gregory (1932), Newenham (1931), Sidey (1931), G. S. Wilson (1932).

Student Discipline—R. W. Jones (1933), Guthrie (1932), Lantz (1931), Nottelmann (1931), Raitt (1932).

Summer Quarter—Burd (1933), Condon (1932), Landes (1931), Padelford (1931), Thomson (1932), Uhl (1933).

Committees of the Faculty

Art.....Isaacs (1933), Herrman (1931), Rhodes (1932).

Athletics—O'Bryan (1933), O. E. Draper (1931), Dehn (1933), McIntyre (1932), Winger (1932), Griffith (1931).

Curriculum—Benson (1931), and chairmen of the curriculum committees of each college, together with a representative from each faculty having no curriculum committee.

Educational Research—Tartar (1933), Densmore (1931), Griffith (1932), Quainton (1933), Isaacs (1932), Preston (1931), W. R. Wilson (1933), Uhl (1932).

Graduation—Goodspeed (1932), Cornu (1932), Coon (1933), Hoard (1931), McKay (1931), Stevens (1933).

Honors—Carpenter (1931), Dahlin (1933), Fawcett (1932), Hawthorne (1933), Read (1932), C. P. Wood (1931).

Library—C. W. Smith (1933), Coon (1933), Guberlet (1932), Loew (1933), Padelford (1931), Patzer (1931), Powell (1932), Thomson (1932).

Public Exercises—Daniels (1933), Conway (1932), D. C. Hall (1932), Lawrence (1931).

Relations with Secondary Schools and Colleges—Bolton (1931), Cole (1933), Creer (1932), Frein (1931), Jessup (1932), Sperlin (1932), Stevens (1931), Utterback (1933), Uhl (1931), Warner (1932).

Rhodes Scholarships—Densmore (1933), Harrison (1931), Quainton (1932).

Rules—Goodner (1931), Meisnest (1932), Stevens (1931), W. Taylor (1932), Ward (1933).

Student Affairs—Dakan (1933), Creer (1933), E. M. Draper (1932), Dressler (1932), Haggett (1931), W. Taylor (1931).

Student Publications—V. McKenzie (1933), Ayer (1931), Campbell (1932), Osborn (1932).

Student Welfare and Loans—Gould (1933), Bash (1932), Condon (1932), Fawcett (1931), D. C. Hall (1932), Raitt (1931).

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 and tuitions should yield approximately $1,860,000 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 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, Howevер,* 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 Montlake 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 during the past year. The third unit, the O. B. Johnson Biological Laboratory, will be 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, Library, Meany Hall, Mines Laboratory, Music Building, Observatory, Pharmacy Building, Philosophy Hall, Physics Hall, Power House, Practice Cottage, R.O.T.C. Armory and Headquarters Buildings, Science Hall.

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 205,761.

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 49,637 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 458,945 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 relations. 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, which at present include 125,000 specimens.

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 of the Fine Arts

The Horace C. Henry Gallery of the Fine Arts was completed in December, 1926. This building with its collection of modern 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. Typical work of the schools of England, Spain, Holland, Germany and Sweden is also included.

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.

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 recording 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.

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 patternmaking 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 named fishes, particularly rich in species from Puget Sound and Alaska. By exchange and other means a representative series of the fishes found in American waters, with particular reference to forms of economic importance, is being built up. There is a collection to illustrate the species of shellfish, crustaceans, and other invertebrate animals constituting the bases for the corresponding industries.

Fish Diseases Laboratory. The laboratory for fish diseases is equipped for study of life histories of various parasites of aquatic animals, including aquaria for live subjects.

Fisheries Laboratory. The apparatus laboratory is equipped with working models of the larger forms, fully rigged types of the smaller forms, of fishery apparatus and detailed plans for their construction; equipment for manufacture, repair, care and preservation of nets; models of fishing vessels and boats, and samples of various fishery products prepared for market.

Aquarium. The aquarium is equipped with a number of tanks for live fishes, and with balanced and other aquaria for study of aquarium management.

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 five distinct units, as follows:

1. General Laboratory. Equipped with special wood sectioning and plain sliding microtomes, binocular research microscopes with mechanical 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. Wood Preservation Laboratory. A 14-inch by 12-foot retort, equipped with vapor drum and condenser, air compressor, vacuum pump and duplex pressure pump, is arranged for experimental work with any pressure process of treating wood. An open-tank plant of semi-commercial size is available for treatment of 9-foot material. It consists of one treating tank, two steel storage tanks for creosote and a wooden tank for the storage of metallic-salt solutions.

3. Wood Distillation Laboratory. A retort of about one-half cord capacity is equipped with copper condensers, gas pump, gas tank and redistilling apparatus. This plant has been installed by the U.S. Forest Service for co-operative work with the University.

4. Dry Kiln Laboratory. A dry kiln with a capacity of 10,000 feet B.M., equipped with a temperature controller, air compressor, hygrodeik, recording hygrometer and a recording thermometer is conveniently located on the University spur of the Northern Pacific Railway. Arrangements have also been completed at one of the local commercial plants whereby the College of Forestry is given complete control of an experimental kiln at the plant.

5. 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.

6. 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.

The Lee Field Laboratory. This is a tract of 80 acres containing a second growth stand of approximately 40 year old timber located at Maltby. The tract was donated to the College of Forestry by Ingie Marie Lee Hodgins, Edna Mae Lee Engle and George O. Lee, in memory of their parents, the late Mr. and Mrs. O. H. Lee. As the tract can be reached by auto in less than one-half hour from the University campus it will be especially valuable in connection with the regular laboratory instruction in the courses in silviculture and mensuration, and will also lend itself to some experimental work.

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 Department 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 two portable lanterns, 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 Door 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 tube-tester, 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, dryers, 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 both manufacturing and testing ceramic products. The heavy brick machinery consists of a 4-foot Crossley dry and wet pan, a Mueller universal auger machine with cutting table, and a large American dry brick press. Pottery machinery includes a washing outfit with a blunger, power screens, spray dryer and filter press, a potter's pug mill, jolly wheel and plaster molds for both 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 ball mills. Firing apparatus includes an oxygen acetylene cone-fusion furnace; a 3-foot, high-temperature, load-test kiln for two bricks; a 10 by 7-foot muffle down-draft terra cotta kiln; and a two-pot, 4 by 10-foot glass furnace. The kilns are fired with both gas and oil, and are equipped with thermo-couple, radiation, and optical pyrometers.

A humidity dryer complete with recording apparatus has recently been built. Other additions are a Brown recording electric carbon-dioxide apparatus, a petrographic microscope, hydrogen-ion concentration apparatus and a newly designed portable machine for testing the transverse strength of full-sized brick.

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 optimus 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. Members of the Experiment Station staff give occasional lectures to the students of the University on subjects dealing with their special lines of work.

Mine Safety Station. The Mine Safety Station of the United States Bureau of Mines is housed in a separate building located near Mines Laboratory. Various types of oxygen rescue and resuscitation apparatus are kept on hand for practice as well as for use in mine rescue work. The purposes of the station are to give emergency aid in cases of fires or explosions at mines or elsewhere, and also to train miners, firemen, and mining students in the use of oxygen helmets and other forms of rescue apparatus. From ten days to two weeks' time is required for the course of training. The applicant is taught the construction of the apparatus and is required to wear it for four hours each day, in two periods of two hours each. The practice is carried on in a room filled with gas which cannot be breathed without immediate 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 car-track, overcast, timbers and brick. First-aid instruction is also given. Applicants who have completed the course of training receive a certificate from the United States Bureau of Mines.

A one-ton, 45-horsepower automobile truck, equipped with rescue apparatus ready for emergency calls, forms part of the equipment of the safety station.

Engineering Experiment Station

The Engineering Experiment Station was formally 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 twelve 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 twelve 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 twelve 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 fifteen quarters in architecture, and twelve 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 twelve 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 fifteen 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 eighteen 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 twelve 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 twelve 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 forty-five minutes, for a school year of thirty-six 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 twelve 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, 1930, *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, together with all credentials showing present membership, or past service, in the army, navy, marine corps, National Guard, naval militia, or the United States Coast Guard.

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

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

Entrance Requirements

1. *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. One unit may be made up of fractional credits earned in music, physical education, debate, dramatics, and in other subjects accepted by the high school for graduation. The twelve units shall be distributed as follows:

(a) Not more than three units in technical or vocational 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, but nine academic units are required for all students who do not present a unit of fractional credits in other subjects accepted by the high school for graduation.

(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 mathematics.† Six units of technical electives may be offered, at least three of which 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 cir-

*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 forty-five minutes, for a school year of thirty-six weeks.

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

†Commercial arithmetic and elementary algebra do not satisfy this requirement.

cumstances 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.

2. *Scholarship Required.* A minimum of nine 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. Beginning with the autumn quarter of 1931-32, and thereafter, eleven such units will be required.

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 twelve 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 advance credit will be given for work done in institutions whose standing is unknown, except upon examination.

Students Transferring from Colleges Having a Lower Standard of Admission Than the University of Washington. A student applying to transfer from a college having a lower standard of admission than the University of Washington shall be required to furnish the following information:

(a) His status at the time of admission to college work.

(b) His status and his detailed record at the end of his period of residence in the college.

In the event that the student's high school record was not such as to have admitted him to the University of Washington, the student will not be admitted until at least one year of college work shall have been completed with recommending grades. It is understood that such students will not be admitted without the recommendation of the College last attended.

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 hours (exclusive of required physical education or military 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 hours, 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 thirty-five or more hours' 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 hours, (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 10 hours of military 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 must have three years of academic training.

School of Journalism. Requirements for admission to the School of Journalism are: Clear entrance to the College of Liberal Arts; 90 hours (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 10 hours of military 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 hours of college credits in courses approved by the faculty of the School of Education and the faculty of the college concerned, and 10 hours of military 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 twenty 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, twenty credits each in German and French and all required work. However, students who lack not more than fifteen 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 hours required for graduation.

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 hours required of resident students for graduation. Records of credit 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 Graduate School section.

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. Graduates of non-accredited high schools in the State of Washington are required to pass examinations with the College Entrance Examination Board in order to obtain admission to the University of Washington. The number and selection of examinations shall be determined by the Registrar upon the recommendation of the principal. When it is possible the student will be permitted to make use of Plan B, sometimes called the New Plan of the College Entrance Examination Board. This provides for tests in four senior subjects.

4. Graduates of non-accredited high schools in other states may qualify for admission as outlined in paragraph 3, with this exception; if the State University where their respective high schools are located requires them to qualify for admission by Plan A or the Old Plan they will be held to the same requirement if they apply for admission to the University of Washington.

5. Low Scholarship Students from Accredited High Schools of Washington.

(a) Subject to paragraph 1, graduates of accredited high schools in the State of Washington, whose grades do not meet the scholarship requirement of the University of Washington, may raise their scholarship by passing College Entrance Board Examinations in certain subjects to be determined by the Registrar and the dean of the college concerned.

(b) Non-recommended graduates of accredited high schools of other states than Washington may follow this plan also, subject to the exception noted in paragraph 4.

6. 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 16-21, 1930

The College Entrance Examination Board will hold examinations in June 1930 at nearly 400 points in the United States and abroad.

A list of places at which examinations will be held will be published about March 1. 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 twenty-five 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 a.m. and for an afternoon examination at 1:45 p.m. 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 public 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 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 twenty-one 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 Saturday, September 27 at 12 m; for the winter quarter prior to Monday, January 5, 1931; for the spring quarter, prior to Monday, March 30, 1931; and for the summer quarter prior to Wednesday, June 17, 1931.

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 following the final official registration date. After the first week ~~following the final official registration date~~ 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 hours of work:

(b) No student shall be registered for more than 16 hours of work (exclusive of military 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 hours (exclusive of military science or physical education).

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

RULE 6. Work taken in non-credit courses 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 infirmary 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 special legislative act of the session of 1921, the following tuitions and fees will be collected:

General 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 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.

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.

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.

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.

Marine Biological Station. 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.

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 in 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.

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 de-

partments 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.

Law Library Fee. Same as general tuition.

A.S.U.W. Fee. All students withdrawing may turn in their A.S.U.W. tickets at comptroller's office window "E," 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 1930-1931. 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	4.00
104, 105, 106, 110, 111, 112	5.00
Botany—1, 2, 3, 4, 11, 13, 14, 53, 90, 111, 180, 181, 182, 199, 220, 233, 247, 250, 251, 271, 272, 273	2.00
101, 105, 106, 107, 119, 140, 141, 142, 143, 144, 145, 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
55, 56, 104, 118, 119, 134, 140, 141, 145, 150, 155, 163, 164, 165, 166, 176, 177, 178, 205, 206, 207, 210, 211, 212, 225, 226, 227, 228, 230, 236, 250,—$1.00 per credit hour.	
Breakage Ticket	5.00
Civil Engineering—53, 54, 55, 56, 57, 59, 142, 143, 150, 155, 158, 162, 163, 171	2.00
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	.50
Education—All courses except those listed below	.50
71	4.00
190, 191	3.00
Electrical Engineering—132, 141, 181, 183, 196, 198	2.00
102, 110, 112, 122, 162, 164	4.00
Engineering Shops—52, 54, 55, 105, 106, 107	2.00
53, 104	3.00
English—41, 43, 187, 188	.50
214, 215, 216	1.00
Fisheries—111, 112, 113, 157	3.00
101, 102, 154, 175	4.00
165, 166, 167	5.00
201, 202, 203—$1.00 per credit hour.	
Forestry—1a, 1b, 1c	.50
60, 61, 125, 10-11	1.00
104, 140, 152, 163, 190	2.00
160, 161, 162, 173, 187, 188, 189, 196, 197, 213, 214, 215	3.00
62	4.00
General Engineering—1, 7	1.00
21	2.00
Geography—1, 11, 101, 103, 104, 111	1.00
Geology—1	1.00
2, 5, 6, 7, 105, 106, 107, 112, 121, 123, 124, 125, 130, 132	2.00
126—$1.00 per credit hour.	
Home Economics—8, 43, 101, 102, 190	2.00
25, 112, 113, 121, 127, 133, 143, 160, 161, 183, 188	3.00
191	4.00
1, 4, 5, 9, 103, 105, 106, 107, 108, 116, 120	6.00
200, 204, 205, 206—$2.00 per credit hour.	
207, 208, 209—$1.00 per credit hour.	
Journalism—1, 2, 61, 90, 91, 92, 104, 135, 145	1.00
3, 51, 101, 120, 125, 130, 131, 133, 136, 138, 140, 142, 150, 160, 225, 226, 227	2.00
171, 172	3.00
173, 174, 175	4.00
(Maximum fee for any one student $4.00 per quarter.)	
Law—Students registered in Law School, maximum of $10.00. Students in other colleges $1.00 per credit hour.	
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	1.00
18, 19, 20, 68, 69, 70, 118, 119, 120, 168, 169, 170 as listed below:	
McCreery, Oliver, Anderson (One lesson a week)	18.00
Venino, Van Ogle, Mabon, Bogardus, Venino-Jones, Lawrence, Rosen, Lynch, Wood, Kirchner (One lesson a week)	25.00
Glen (One lesson a week)	27.00
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—5, 6, 7, 9, 10, 11, 56, 57, 58, 65, 66, 67, 80, 81, 82, 101, 102, 110, 111, 112, 136, 137, 138, 151, 152, 166, 167, 168, 169, 170, 171, 172, 173, 174, 179, 180, 181, 263, 264, 265	1.00
32, 33, 34, 53, 54, 55, 157, 158, 159	2.00
105, 106, 116, 163, 164, 165	.50
103, 104, 130	2.50
107, 108, 109, 160, 161, 162, 175, 176, 177, 207, 208, 209, 260, 261, 262	3.00
72, 73, 74, 122, 123, 124, 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—$1.00 per credit hour.	
Breakage ticket	5.00
Physical Education for Men—for each P.E. (Men) class except those listed below:	
80, 90, 170, 171, 172, 173, 174	.50
Locker fee per quarter (where needed)	1.00
Physical Education for Women—Each P.E. (Women) class or combination of P.E. classes other than those listed below	1.50
4, 5, 6, 7, 8, 9	.50
95, 96, 97	1.00
87, 88	3.50
94, 98	12.00
Physics—1, 2, 3, 4, 5, 6, 7, 50, 51, 89, 90, 97, 98, 99, 101, 105, 113	2.00
54, 115, 154, 156, 170	4.00
(Architecture majors taking Physics 1—4 hours no fee.)	
Psychology—1	1.50
Sociology—55, 56, 62, 142	2.00
Zoology and Physiology—20	1.50
1, 2, 3, 4, 5, 101, 102, 106, 107, 108, 111, 112, 121, 155, 156, 157	2.00
6, 7	3.00
125, 126, 127, 128	3.50
53, 54, 55, 115, 163	4.00
151, 152, 153	5.00
201, 202, 203—50 cents per credit hour.	

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 where cancelled for non-payment 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 seven dollars and fifty cents ($7.50). 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 Uniforms Deposit. Each student registered for military or naval science is required to wear a uniform at drill. In the army units, the student purchases his uniform from a contract tailor, at a cost of approximately $30, the uniform being the property of the student. The Government gives commutation to the students at the rate of $7.15 for each of the first two required years of drill of which $1.15 per year is retained as a breakage and loss charge. Advanced students purchase a new uniform and are allowed $30 the first advanced year and $6 the second.

In the naval unit each student deposits $25 with the University, which is returned at the end of his service, less $.50 per quarter of drill, which amount is retained as a breakage and loss charge. The naval uniform is not the property of the student.

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 $36 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.

An amount equal to the first month's account is paid in advance and left on deposit to be applied on the board and room account for the last month of the school year.

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.

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

University Health Service

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

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

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

The Infirmary cares for all cases of illness (including physician's attendance, nursing and medicines) for a period of one week free of charge. For a period longer than one week a charge of 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 79).

DEGREES

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

General Rules

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

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

Note. 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.

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 five 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.

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, wholesomeness of influence and promise.

The Frederick and Nelson Scholarship. Frederick and Nelson of Seattle offer two scholarships, one to a boy and one to a girl, each of which carries $250 a year for the freshman and sophomore years. These scholarships are awarded on the basis of scholarship, personality, and business acumen.

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 Walker Cut Stone Company Scholarship. From the Walker Cut Stone Company of Tacoma, a traveling scholarship in the amount of $500, for use in the department of architecture. The student receiving the scholarship must furnish an additional $500, making a total of $1000; and must attend the School of Fine Arts at Fontainebleau, France, during the three months' summer session, preparing a series of measured detail drawings of Romanesque architectural stone mouldings and ornaments, the same to be published by the Walker Cut Stone Company for the use of architects.

The West Coast Lumber Bureau Scholarship. From the West Coast Lumber Bureau, a traveling scholarship in wood architecture, in the amount of $1000, for use in the department of architecture. The junior student selected must familiarize himself with the lumber industry here, with different woods, mill methods, etc.; he must spend two months at the Fontainebleau School of Fine Arts in France; he must continue his studies of wood construction in Switzerland, completing two or three drawings; and upon his return, his work in pamphlet form must be distributed to architects in coast cities and elsewhere.

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.

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 anuual 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 Boetzkes 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 Northwest Concrete Products Association Prize. A prize of $200 given by the Northwest Concrete Products Association, to be awarded to one or several students in the department of civil engineering for investigation and study in concrete, especially along lines that will be beneficial to the concrete products industry.

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 men's personnel directors or the dean of women for full information.

Student Welfare and Vocational Guidance

Men's Personnel Office

The directors of the men's personnel office 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 here.

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 men's personnel directors. 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 cooperation 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 to send out. 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 members of the association and entitled to the privileges of membership. 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 three dollars 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 bi-weekly 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 205 Home Economics Hall.

The purpose of the organization is to create and promote a spirit of Christian friendliness among women students; to afford opportunities for development of Christian leadership through cabinet and committee work; and to offer channels for self-expression through various forms of service work, both on and off the campus.

A full-time general secretary is employed whose services are at the disposal of every University woman.

Department Clubs. The following clubs are connected with the work of different University departments: American Chemical Society, American Institute of Civil Engineers, American Institute of Electrical Engineers, American Society of Mechanical Engineers, American Institute of Mining and Metallurgical Engineers, Ammonii Socii, Art Club, Business Administration Council, Chemical Club, Circolo Italiano Universitario, Deutscher Verein, Education Club, Engineers Council, Fisheries Club, French Club, Forestry Club, Graduate Club, Greek Club, Home Economics Club, Law Association, Maritime Commerce Club, Mathematical Journal and Research, Mines Society, Nurses' Club, Officers' Club, Pharmacy Club, Philological Club, Politicial Science Club, Men's Physical Education Club, Pre-Medic Club, Scandinavian Club, Student Council of Speech Art, Sociology Club, Spanish Club, University Women's Vocational Club, Washington Law Association, Women's Athletic Association, Zet Mu Tau, Zoology Club.

Religious and Social. Bethany Club, Chinese Club, Christian Science Society, Cosmopolitan Club, Fuyo-Kai Club, Filipino Club, Max Garrett Club, Inkwell Club, Japanese Club, Mountaineers Club, Newman Club, Menorah Society, Pilgrim Club, Roger Williams Club, Service Club of Washington,

Sororia, Tillicums, Young Men's Christian Association, Wesley Club, Westminster Club, Women's Ex-Service Club, Women's Federation of the University of Washington, Young Women's Christian Association.

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

Intra-mural 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 intra-mural contest. The Benton Brothers trophy is awarded to the winner of the women's intra-mural 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, Orchestra and Band, String Ensemble.

Activity Honor Societies. Fir Tree, Oval Club, Mortar Board, Purple Shield.

Scholastic Honor Societies. Phi Beta Kappa, Sigma Xi, Tau Beta Pi, Beta Gamma Sigma, Order of the Coif, Gamma Epsilon Pi.

Professional Fraternities. Alpha Delta Sigma, Alpha Kappa Delta, Alpha Kappa Psi, Atelier, Attic and Easel, Beta Alpha Psi, Delta Theta Phi, Gamma Epsilon Pi, Iota Sigma Pi, Kappa Psi, Lambda Rho, Mu Phi Epsilon, Omicron Nu, Pan Xenia, Phi Alpha Delta, Phi Delta Delta, Phi Delta Phi, Phi Delta Kappa, Phi Lambda Upsilon, Phi Mu Alpha, Phi Mu Gamma, Pi Lambda Theta, Pi Mu Chi, Scabbard and Blade, Sigma Delta Chi, Sigma Upsilon, Tau Sigma Delta, Theta Sigma Phi, Xi Sigma Pi.

Activity Societies. Associated University Players, Axe and Grindstone, Big W Club, Delta Phi, Gamma Alpha Chi, Girls' Rifle Club, Hammer and Coffin, Kappa Kappa Psi, Knights of the Hook, Minor W Club, Personnel Officers' Society, Radio Club, Red Domino, Sigma Alpha, Spurs, Tau Kappa Alpha, Tau Phi, University of Washington Band, Varsity Boat Club, Women's Athletic Association, Women's Federation Players, Women's W. Club.

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.

Independent Organizations. Lander Hall, Terry Hall, Tillicums.

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 groups: Clark Hall, Lewis Hall, Tolo House, Daughters of the American Revolution, Kla-how-yah, Wildarho, McKenny House, Peyac, Chako-Siyah, Tah-Mah-Na-Wis, Twana, Mamook.

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 fifteen or sixteen 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

All women students are required to take three hours of gymnasium work a week throughout the first and second years, ten credits in physical education being required of women for a degree.

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. It shall be the duty of every student of whom military science is required, and, similarly, it shall be the duty of every student of whom physical education is required, to see that he is properly registered for the course, and to report for instruction. Delays in completion of full registration will not excuse a student from attendance. Students who are required to take military science, and similarly, students who are required to take physical education, but fail to report for classes, will with the approval of the president, be excluded from all classes. The responsibility of complying with the regulations regarding military science and physical education rests entirely with the student.

Rule 18 (a). Men, who because of physical condition should not be required to take the work in military science shall be permitted to substitute physical training therefor. The authority for such substitution rests solely with the University health officer.

(b) Men or women, who, because of physical condition should, in the judgment of the University health officer, be relieved from the physical education requirement shall be exempted by him for one or more quarters; pro-

vided, however, that this shall not include any exemption from the lecture courses thereof.

(c) Students over twenty-four years of age at the time of original entrance into the University are exempt from the University requirements in military science and physical education.

(d) Men who are not citizens of the United States, and who do not intend to become citizens, are not permitted to enroll for military science but are required to satisfy the University requirement in physical education.

(e) Men who, because of pecuniary circumstances necessitating outside work, or because of other sufficient reasons desire to transfer from military science to physical education shall present a written application to the chairman of the appropriate committee upon a form provided therefor.

(f) With the approval of the president the department of Military Science and Tactics may, for good and sufficient reasons, at any time, cancel a student's registration in military science. This cancellation of registration will not operate to reduce the University requirements for graduation. Students whose registration has thus been cancelled will report to the dean of their college for adjustment. Notice of cancellation of registration will in every case be filed in the registrar's office, a duplicate copy being sent to the dean concerned for his information.

(g) 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 are not eligible to membership in the Reserve Officers' Training Corps. They will be registered in military science, but upon presentation of proper credentials will be transferred to the department of physical education by the department of military science.

(h) Entering students presenting credits for military science received prior to matriculation as entering freshmen shall be allowed an exemption for military science up to the value of the said credits but shall be held for physical education unless they elect to take military science.

RULE 19. A short-course student, a special student, or one registered for not to exceed six credits, shall not be required to include military science or physical education in his program.

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 hours 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

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 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, 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.

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.

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.

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 12:00 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 de-

ferred 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 hours' 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 hours 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 women's Federation, Y.M.C.A. and Y.W.C.A. presidents and class officers, must comply with these general eligibility rules. Eligibility in the cases listed under 38 (g) shall be ascertained and enforced by 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 units the preceding quarter or not carrying successfully ten units 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 hours of scholastic work, and earned passing credits 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) Eligibility in athletic cases shall be determined by the chairman of the faculty athletic committee.

(e) 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.

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 and must satisfy the department responsible for the work, before he is allowed to represent the University; provided, that if a student engages in any part of these activities without registering for the course of which it forms a part, his eligibility shall be determined by 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 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.

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

(b) All other student groups, wishing to have speakers address them must have the speakers, together with the date, place, hour and subject, approved in advance by the Public Exercises Committee, and must secure the permission of the superintendent of buildings and grounds for the use of any of the University buildings or any part of the grounds of the University.

(c) No student meeting shall be designated as an assembly without the approval of the Public Exercises Committee.

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, Home Coming, 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.

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 fifteen 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 fifteen entrance units, at least ten academic credits, and a minimum of ten military credits, shall be regarded as eligible for initiation into a fraternity.

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

(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 LIBERAL ARTS

I. 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 students 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 section, page 61.

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 may be found on page 51.

Credentials for students expecting to enter the University in the autumn quarter, 1930, 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, together with all credentials showing present membership, or past service, in the army, navy, marine corps, National Guard, naval militia, or the United States Coast Guard.

II. 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. One unit may be made up of fractional credits earned in music, physical education, debate, dramatics, and in other subjects accepted by the high school for graduation. The twelve units shall be distributed as follows:

1. Not more than three units in vocational or technical 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.

Nine academic units are required for all students who do not present a unit of fractional credits in other subjects accepted by the high school for graduation.

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.

Recommending Grades. A minimum of nine 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. Beginning with the autumn quarter of 1931-32, and thereafter, eleven such units will be required. 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 cov-

ering 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 1930 from June 16 to 21 and 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 four years 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 accredited 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.

III. 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. *History, U.S.;* 57-58-59	One year of U.S. History in high school (may be ½ civics and ½ U.S. History).
2. *History,* 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. *English* 1-2; ten credits	None.
4. *Ancient Life and Literature*—ten credits. May be satisfied by: a. *Any two*: Latin 11, 13, Greek 11, 13 (In English) b. *Any two*: 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. *Any two*: 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. *Physical Science*—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. *Biological Science*—ten credits from one of the following groups: a. Botany 1, 2, 3, 4; b. Botany 105, 106, 107; c. Geology 1, 5, 6 or 7. d. Geology 1, Geography 1 or 11; e. Geology 1, Geology 112; f. Geography 1 and 11 or 101 or 103; g. Zoology 1-2.	One year of one in high school.
7. *Social Science*—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. *Psychology* 1; five credits	None.
9. *Philosophy;* 5 credits. May be satisfied by 1 or 2 or 3 or 5	None. (Not open to freshmen)
10. *Military or Naval Science or Physical Education;* ten credits	None.

IV. 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.

V. Scholarship Standing

(Rule 23)

Low Scholarship Report. 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. 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:

(a) 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.

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

(c) 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, 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" (Withdrawal) count neither as registered hours nor as grade points.

Reinstatement of Students Dismissed on Account of Low Scholarship

(a) 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.

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

VI. 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 99-104.

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 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, 160 and 168 and at least 30 additional credits in courses from the following list:

60. Labor in Industry.
61. Social and Economic Standards of Living.
103. Money and Banking.
104. Economics of Transportation.
106. Economics of Marketing and Advertising.
108. Risk and Risk Bearing.
121. Corporation Finance.
122. Principles of Investment.
124. Public Finance.
129. Taxation.
131. Economics of Public Utilities.
159. Advanced Money and Banking.
161. Labor Problems.
162. European Labor Problems.
164. Real Estate and Land Economics.
165. Labor Legislation.
166. Women in Industry.
171. Modern Trends and Criticism.
175. The Business Cycle.
181. Economics of Consumption.

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.

VII. Schedule Limitations

Dean's Signature. No student shall be registered for more than 16 hours a quarter (exclusive of military science and physical education), or for less than 12 hours a quarter except with the written consent of the dean.

Outside Work. In addition to a load of 16 plus 1⅓ hours a student may carry a maximum of 8 hours per week outside work without special permission. But if he carries more than 8 hours of outside work, he must have the dean's signature for excess hours, each 3 hours of outside work counting the same as one credit hour. 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 Hours Based on Grades. No entering freshman may carry excess hours. 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 hours, when grades average B, with no grade below C
18 hours, when grades are straight B—or better
19 hours, when all grades are A

Juniors and seniors who have made *exceptionally* good records may in rare cases be allowed to carry 20 hours.

High School Deficiencies. Deficiencies which are being made up in high school shall count on the student's schedule as five hours per half unit.

VIII. Requirements for the Degree of Bachelor of Arts

Total Hours. 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 neces-

sity 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 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 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 hours 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.

IX. 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, 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 hours 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 Men's 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.

X. 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, together with the required ten credits in military or naval science or physical education.

Adviser. From the beginning of the feshman 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. These courses are arranged in the order in which they should normally follow each other.

First Year

	Credits		*Credits*
Econ. 1. ‡Gen. Econ.	5	Jour. 1, 2. ‡Jour. as a Profession	2
English 1. ‡Composition	5	Jour. 3. ‡Elements of Publishing	3
64, 65. ‡Lit. Backgrounds	6	Lib. Arts 1. †Intro. to Mod. Thought.	5
Greek 11. ‡Greek Civ.[1]	5	Latin 11. ‡Roman Civ.[1]	5
Hist. 5-6. †Eng. Pol. and Soc. Hist.	10	‡Mil. or Naval Sci. or Phys Ed.	5
		Pol. Sci. 1. ‡Comparative Government	5
		‡Science[2]	10
		Soc. 1. ‡Intro. Soc.	5

Second Year

	Credits		*Credits*
Arch. †112,113. Freehand Draw.	4	Jour. 90,91,92. ‡Current Events	1
Econ. 2. †Gen. Econ.	5	‡Mil. Sci. or Naval Sci. or Phys. Ed.	5
61. Soc. & Econ. Stan. of Liv.	5	Musc 4,5,6. Hist. & Appr.	9
106. †Econ. of Mkts. and Adv.	5	Phil. 5. ‡Intro. to Logic[3]	5
English 67,68,69. ‡Great Am. Writers.	6	Psychology 1. ‡Gen. Psych.	5
Foreign Language	10	Sociology 56. The Family	3
Hist. 57-58-59. ‡Hist. of U.S.	9	57. Child Welfare	3
71-72-73. Ancient Hist.	9	62. Play and Leisure Time	3
Jour. 51. ‡News Writing	5	63. †Community Organization	3
61. ‡The Smaller Newspaper	3		

[1] Students who have taken, or who plan to take, three or more years of ancient language, may omit this requirement. Greek 13 or Latin 13 may be substituted respectively for Greek 11 or Latin 11.

[2] If a student has not had in high school the sciences prescribed for junior standing in Liberal Arts (that is, 10 hours of a physical science and 10 hours of a biological science) he is required to take ten hours of chemistry or physics and ten hours of botany or geology or zoology or geography in the University.

[3] Philosophy 1 or Philosophy 3 may be substituted for this requirement.

XI. Pre-Law Curriculum—Two-Year 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 93.

Transfer Students. Students who transfer from other institutions with advanced standing, but who have had less than two full years of liberal arts credit in their respective institutions, and who are not entitled to 90 liberal arts credits in accordance with the credit computation system of this University, nor have completed the requirements of the lower division of the College of Liberal Arts of this University, or their equivalent, must satisfy all of the local requirements before they will be admitted to the Law School. Students who transfer from other institutions with advanced standing, and who have had at least two full years of liberal arts credit in their respective institutions and are entitled to 90 liberal arts credits, more or less, in accordance with the credit computation system of this University, but who have not completed the requirements of the lower division of the College of Liberal Arts of this University, or their equivalent, may be held to earn such additional liberal arts credits as the dean of the Law School may impose as a condition for entrance to, or graduation from, the Law School. The object of this provision is, with proper regard for comity between institutions of higher learning, to bring about a fair and reasonable leveling between the preliminary training offered by students from this University and that offered by students from other institutions.

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.

Autumn Quarter Entrance. The Law School curriculum contemplates entrance in the autumn quarter, and the student enters advantageously only at this time. This is of such importance that in cases where there are only a few deficiencies, they should, if possible, be removed during the intervening summer quarter, or through the Extension Service.

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
Astronomy 1
Liberal Arts 1, 11
Latin 1-2, 3, 4, 5, 6
B.A. 1, 2
B.A. 65
Political Science 1
Political Science 118
Political Science 119, 120
Sociology 1
English 38, 40
English 51, 52, 53
English 54, 55, 56
English 64, 65, 66
English 73, 74, 75
History 105, 106, 107
History 108, 109, 110

XII. 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 hours 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 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 95. 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.

XIII. 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 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 science or naval science or physical education, and including all required work. However, students who lack not more than fifteen 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 hours 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.

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 should 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
English ‡1-2. Comp.	10	Music 4,5,6. Hist. and Appr.	9
57. Intro. to Poetry	5	[3]Mod. Lang. ‡1-2-3 French or German	15
40. Essentials of Spk.	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
[2]Hist. 1-2. Medieval and Modern	10	[4]Latin ‡11,13, Roman Civ. and Lit.	10
5-6. Eng. Pol. and Social	10	Mil. or Naval Sci. or Phys. Educ.	5
[2]Science. Bot., Geo., or Zool.	10		

Second Year

[3]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
[2]Hist. †57-58-59. United States	9	[1]Pol. Sci. ‡1. Comparative Gov't.	5
O.S. 75-76. Hist. of China	10	[1]Soc. ‡1. Introduction	5
O.S. 78-79. Hist. of Japan	10	97. America in Civilization	5
[4]Greek ‡15-16. Civilization	10	62. Play and Leisure Time	3
Anthrop. 51. Gen. Intro. to Anthrop.	5	[1]Econ. ‡1. Introduction	5
		7. Geog. Backgrounds of Industry	5
		61. Social and Econ. Standards	3
		Lib. Arts. †11. Intro. to Fine Arts.	5
		Mil. or Naval Sci. or Phys. Educ.	5

THIRD YEAR

	Credits		*Credits*
[3]Mod. Lang. Complete Lib. School Requirement	10	Eng. †134. Reformation in England..	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	[2]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

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.

XIV. PRE-EDUCATION CURRICULUM

Admission. Pre-education students must fulfill all the lower division requirements of the College of Liberal Arts, (see page 93 of this bulletin) 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 focusing which will give to scholarship a certain weight of close relevancy to the peculiar responsibilities of the teacher. Within the limits set by the academic organization of the departments and colleges, which in a University must attempt both to make scholars and to contribute to the special ends of professional schools, it is still possible for the prospective teacher to make choice of courses which will enhance his pleasure in 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:

[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 hours 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.

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Political Science 1	5	History 6	5	Psychology 1	5
History 5	5	English 65	3	Education 60	4
English 64	3	Liberal Arts 1	5	Zoology 17	2
Zoology 16	2	Geology 1	5	Geology 7	5
		Sociology 1	5	English 40	5

SECOND YEAR

History 57	3	History 58	3	History 59	3
		Anthropology 51	5	Education 60	4
				Political Science 53	3
		Philosophy 2	5	or Philosophy 3	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 reenforce 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 English, 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: Education 60 (open to sophomores who have earned 65 hours), Education 70, 71 and 75, and five hours of electives in education.

Course 70 should be taken during the junior year. This course is prerequisite to Education 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.

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
B. Biology
C. Chemistry
D. Geology
E. Geography
F. Mathematics
G. Military Science
H. Naval Science
I. Physics

III. Required curricula in group majors leading to the degree of bachelor of science:

A. Combined Science and Law
B. Pre-Library

IV. Prescribed curricula in vocational subjects:

A. Home Economics
B. Nursing Education
C. Physical Education for Men
D. Physical Education for Women
E. Pre-medical

V. One-year course leading to certificate in Public Health Nursing.

VI. 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), 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 51-68.

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

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, fisheries, 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

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
English 1	5	English 2 or electives	5	Psychology 1	5
Chemistry 1 or 21	5	Chemistry 2 or 22	5	Chemistry 23	5
Zoology 1 or 3	5	Zoology 2 or 4	5	Sociology 1	5
Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔

Second Year

Bacteriology 101	5	Bacteriology 102	5	Bacteriology 103	5
Chemistry 131	5	Chemistry 132	5	Chemistry 111	5
Anatomy 105	6	Anatomy 106 or 102	6	Anatomy 107 or 103	6
Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔

Third Year

Bacteriology 105	5	Bacteriology 106	5	Bacteriology 104	5
Physics 1	5	Physics 2	5	Physics 3	5
Electives	5	Electives	5	Electives	5

Fourth Year

Bacteriology 120	5	Bacteriology 121	5	Bacteriology 122	5
Electives	10	Electives	10	Electives	10

* Physiography (with laboratory work) taken in a 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

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
English 1	5	English 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. or Phys. Ed.	1⅔
Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔		

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. or Phys. Ed.	1⅔
Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔		

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	13
Electives	10	Electives	10	Pol. Sci. 101	2

C. CHEMISTRY

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Chemistry 1 or 21	5	Chemistry 2 or 22	5	Chemistry 23	5
Mathematics 4	5	Mathematics 5	5	Mathematics 6	5
English 1	5	English 2 or [1]Electives.	5	[1]Electives	5
Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔
		[1]Options (a) Geology or Mineralogy. (b) Mechanical Drawing. (c) Biological Science.			

Second Year

Chemistry 109	5	Chemistry 110	5	Chemistry 101	5
Physics 1 or 97	5	Physics 2 or 98	5	Physics 3 or 99	5
Mathematics 61	3	Mathematics 62	3	[2]Electives	5
Electives	2	Electives	2	Military or Naval Sci. or Phys. Ed.	1⅔
Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔		

**Two and one-half years of mathematics required, which may be taken in high school or University.

[2] Students expecting to elect the industrial group in junior year must take Chemistry 52 the spring quarter of the sophomore year.

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Chemistry 131	5	Chemistry 132	5	Chemistry 133	5
[3]Electives	5	[3]Electives	5	[3]Electives	5
Group Options		Group Options		Group Options	
(a) General—		(a) General—		(a) General—	
[4]Electives	5	[4]Electives	5	[4]Electives	5
(b) Industrial—		(b) Industrial—		(b) Industrial—	
Chemistry 121	5	Chemistry 122	5	Chemistry 123	5
(c) Biochemical—		(c) Biochemical—		(c) Biochemical—	
Physiology 151 or		Physiology 152 or		Physiology 153 or	
Bacteriology 101	5	Bacteriology 102	5	Bacteriology 103	5

FOURTH YEAR

Chemistry 181	5	Chemistry 182	5	Chemistry 183	5
[4]Electives	2	[4]Electives	2		
Group Options		Group Options		Group Options	
(a) General—		(a) General—		(a) General—	
Electives	8	Electives	8	Electives	10
(b) Industrial—		(b) Industrial—		(b) Industrial—	
Chem. Eng. 171	5	Chem. Eng. 172	5	Electives	8
Chem. Eng. 176	3	Chem. Eng. 177	3	Pol. Sci. 101	2
(c) Biochemical—		(c) Biochemical—		(c) Biochemical—	
Chemistry 161	5	Chemistry 162	5	Chemistry 163	3
Chemistry 165	3	Chemistry 164	3	Electives	7

D. GEOLOGY

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Chemistry 1 or 21	5	Chemistry 2 or 22	5	Chemistry 23	5
Mathematics 51	4	Mathematics 52	4	English 1	5
Gen. Engineering 1	3	Gen. Engineering 2	3	Gen. Engineering 21	3
Elective	3	Elective	3	Gen. Engineering 13	3
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Phys. Ed.	1⅔	or Phys. Ed.	1⅔	or Phys. Ed.	1⅔

SECOND YEAR

Geology 5	5	Geology 6	5	Geology 7	5
Physics 1	5	Physics 2	5	Geology 121	5
Bot. or Zool. 1	5	Bot. or Zool. 2	5	Civil Engineering 54	3
Military or Naval Sci.		Military or Naval Sci.		English 2	5
or Phys. Ed.	1⅔	or Phys. Ed.	1⅔	Military or Naval Sci.	
				or Phys. Ed.	1⅔

THIRD YEAR

Geology 123	5	Geology 124	5	Geology 125	5
French 1 or German 1.	5	Geology 130	5	Geology 132	5
Astron. or Elective	5	French 2 or German 2.	5	French 3 or German 3.	5

FOURTH YEAR

Geology 122 or Elect.	10	Geology 126	5	Geology 128	5
Mining 51	3	Geology 127	5	Geology 112	5
Chemistry 111	5	Geology 190	5	Metallurgy 53	3
				Metallurgy 160	2

[3] In addition to the subjects specifically listed above, 10 credits in either French or German are required, to be completed before the end of the third year.

[4] The History of Chemistry, Chem. 190 and 191, are suggested as electives in either the junior or senior year.

E. GEOGRAPHY

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Geography 1	5	Geology 1	5	English 2	5
Sociology 1	5	Economics 1	5	Economics 2	5
English 1	5	Botany 1 or 2	5	Botany 4	5
Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔

Second Year

Sociology 55	5	Geography 11	5	Bus. Admin. 7	5
Physics 1 or 4 or Chem. 1 or 21	5	Physics 2 or 5 or Chemistry 2 or 22	5	[5]Math. 2 or Elective	5
French 1 or German 1.	5	French 2 or German 2.	5	French 3 or German 3.	5
Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔

Third Year

Geography 102	5	Geography 103	5	Geography 104	5
Geography 115	3	Geology 106	5	Geol. 112 or 113	5
History 5	5	History 6	5	Geology 128	5
Elective	2				

Fourth Year

Anthropology 51	5	Geography 175 or 190	5	Geography 105	5
Bus. Admin. 145	5	Bus. Admin. 143	5	Bus. Admin. 144	5
[6]Elective	5	[6]Elective	5	[6]Elective	5

F. MATHEMATICS

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
English 1	5	English 2 or Electives.	5	History	5
Mathematics 4	5	Mathematics 5	5	Mathematics 6	5
Physics 1	5	Physics 2	5	Modern Foreign Lang.	5
Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔

Second Year

History	5	Economics 1	5	Political Science 1	5
Mathematics 107	5	Mathematics 108	5	Mathematics 109	5
Modern Foreign Lang.	5	Chemistry 1	5	Chemistry 2	5
Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔

Third Year

Group I—Secondary School Teachers

Psychology 1	5	Philosophy or Logic	5	Astronomy 1	5
Biological Science	5	Biological Science	5	Mathematics	2 or 3
Mathematics	2 or 3	Mathematics	2 or 3	Education 60	4
Electives	3 or 2	Electives	3 or 2	Electives	3 or 2
				Educ. elective	2

Group II—College and University Teachers

Psychology 1	5	Philosophy or Logic	5	Astronomy	5
Biological Science	5	Biological Science	5	Mathematics	4
Mathematics	5	Mathematics	5	Electives	5

[5] If solid geometry has been taken in high school, elective may be substituted.
[6] If graduate work leading to the doctorate is contemplated, a second language should be taken.

FOURTH YEAR

Group I—Secondary School Teachers

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Education 70	5	Education 71	2½	Education	3
Education 71	5	Electives	12	Electives	3
Electives	7			Education 75Q	3

Group II—College and University Teachers

Mathematics	5	Mathematics	5	Mathematics	5
Electives	10	Electives	10	Electives	10

G. 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

First Year	*Credits*	*Second Year*	*Credits*
Mil. Sci. 1-2-3, all units	5	Mil. Sci. 51-52-53 Inf. Mil. Sci. 61-62-63 Arty. Mil. Sci. 71-72-73 Ord.	5
Math. 1 (Algebra)	5		
Math. 2 (Solid Geometry)	5		
Math. 4 (Plane Trigonometry)	5	Physics 1-2 or 97, 98	10
General Engr. 7 (Engr. Draw.)	3	Chemistry 1-2 or 21-22	10
General Engr. 21 (Plane Surv.)	3	French, German or Spanish	9 or 10
English 1-2	10	History 57-58-59	9
French, German or Spanish 1-2-3	15	English 40	5

Summer Quarter—Basic R.O.T.C. Camp

Third Year	*Credits*	*Fourth Year*	*Credits*
Military Science 104-105-106 Military Science 114-115-116 Military Science 124-125-126	9	Military Science 154-155-156 Military Science 164-165-166 Military Science 174-175-176	9
Philosophy 1, 2, 3 or 5	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.

* All electives will be outside the military department.

H. FOUR-YEAR CURRICULUM IN NAVAL SCIENCE

For students who desire to major in Naval Science the following four-year curriculum has been provided. In addition to giving the student a good general education this course will give him the degree of B.S. in Naval Science on graduation and enable him to obtain a commission as Ensign in the United States Naval Reserve.

Naval Science

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Naval Science 1	1⅔	Naval Science 2	1⅔	Naval Science 3	1⅔
Mathematics 51	4	Mathematics 52	4	Mathematics 2	5
English 1	5	English 2	5	English 40	5
French, German, Span.	5	French, German, Span.	5	French, German, Span.	5

Second Year

Naval Science 51	1⅔	Naval Science 52	1⅔	Naval Science 53	1⅔
Physics 1	5	Physics 2	5	Physics 3	5
History 57	3	History 58	3	History 59	3
French, German, Span.	3	French, German, Span.	3	French, German, Span.	3
Mathematics 101	2	Gen. Engr. 7	3	Mech. Engr. 82	2
Electives	2	Electives	2	Electives	2

Summer Quarter—Basic R.O.T.C. Cruise (Optional)

Third Year

Naval Science 101	3	Naval Science 102	3	Naval Science 103	3
Pol. Sci. 111	3	Pol. Sci. 112	3	Pol. Sci. 113	3
Phil. 2, 3 or 5	5	Physics 154	3	Elective	10
Elective	5	Elective	5		

Fourth Year

Naval Science 151	3	Naval Science 152	3	Naval Science 153	3
Mech. Engr. 198	3	Elec. Engr. 101-102	6	Naval Thesis	5
Electives	9	Electives	6	Mechanical Engr. 179	3
				Electives	5

Summer Quarter—Advanced R.O.T.C. Cruise (Required)[1]

The student will be advised by the department of naval science in regard to electives.

I. PHYSICS

First Year	*Credits*	*Second Year*	*Credits*
†Physics	15	Physics	15
Mathematics	15	Mathematics	15
English	10	Biol. Sci., Geol. or Astronomy	10
Psychology	5	*Restricted Elective	5
Military or Naval Sci. or Phys. Ed.	5	Military or Naval Sci. or Phys. Ed.	5

Third Year	*Credits*	*Fourth Year*	*Credits*
Physics	5	Physics	10
Chemistry	15	**Advisory Electives	15
**Advisory Electives	10	Free Electives	20
*Restricted Electives	10		
Free Electives	5		

[1] One advanced cruise, preferably at the end of the third year, will be required of all students. Week-end cruises are offered once a month.

† If the student has had high school chemistry he is advised to take physics in his freshman year.

* Restricted electives include work in history, economics, language, philosophy, political science, and sociology.

** Advisory electives must be approved by the department.

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 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

First Year

	Credits		*Credits*
[3]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

Second Year

	Credits		*Credits*
[3]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
English ‡1, 2. Composition	10	Geology ‡1. General	5
		Geography ‡1 Prin. of Econ. Geog	5
		Music 4, 5, 6. Hist. and Apprec	9

Third Year

	Credits		*Credits*
[3]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

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

Many fields of activity other than teaching are open to women trained in home economics. In each line of work offered, there is opportunity to supplement the technical work of the laboratory with practical experience. In food preparations, the students do practical work in the University Commons, commercial establishments, hospitals and clubs. In the clothing courses, students learn first to sew for themselves and then for customers.

Seniors are required to live in the home management house on the campus where they take full responsibility for the management and care of the house for a family of four during a period of three weeks.

[3] The Library School requires 20 hours each of French and German in either high school or college.

‡ Required courses.

The following grouping is arranged as a guide in selecting work that will best satisfy the requirements of each individual:

Group I, General, for students who desire a liberal college training with emphasis on subjects that pertain to home economics. Persons interested in social betterment who wish to enter definite welfare work may combine home economics and sociology in this curriculum.

Group II, Food and Nutrition, for students who wish to specialize in teaching this phase of the work in institutions of higher education, for laboratory or research workers. Those who intend to become sanitary and food inspectors are also advised to take the course.

Group III, Teachers' Curriculum for High School Teachers of Home Economics, combines home economics and liberal arts subjects, chemistry, physics, bacteriology, fine arts, physiology and economics. Courses are arranged to meet the particular needs of home economics students. Practice teaching extending through one semester in the Seattle schools is required. On application to the State Board of Vocational Education, graduates of this course will receive a Smith-Hughes certificate.

Group IV, Institutional Management, combines the fundamental sciences, technical and business courses with practice work. Young women trained along this line with initiative and ability find positions that offer increasingly attractive returns.

Group V, Textiles, Clothing and Fine Arts, requires a minimum of science but gives ample opportunity for combining work in design with clothing and textiles for the purpose of general culture or for use in a commercial field. A major in Business Administration may be included.

Any of these five lines leads to the degree of bachelor of science in home economics. Students who fulfill all entrance requirements of the College of Liberal Arts may use home economics as a major for the degree of bachelor of arts.

"Preferred elective" refers to required courses from which the student may be exempted in certain cases with the approval of the head of the department.

Group I—General Curriculum

To provide a liberal college training, and for those students who wish to fit themselves for the following vocations:

1. Homemaking.
2. Social Service. (Elect economics and sociology.)

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
English 1	5	English 2	5	Physiology 7	5
Zool. 1 or Bot. 1	5	Chemistry 1 or 21	5	Chemistry 2 or 22	5
Phys. Ed.	2	Zool. 2 or Bot. 2	5	Lang., Lit. or Hist.	5
		Phys. Ed.	2	Phys. Ed.	2

Preferred electives—H.E. 4, 7, 8, 25, 43; Nursing 5.

Second Year

Lang., Lit. or Hist.	10	Lang., Lit. or Hist.	10	Lang., Lit. or Hist.	5
Phys. Ed.	2	Phys. Ed.	1	Psychology 1	5
				Economics 1	5
				Phys. Ed.	1

Preferred electives—H.E. 5; P.S.D. 9; Bact. 101.

Third Year

Philosophy 2	5	Sociology 1	5

Preferred electives—H.E. 105-106, 111, 112, 113, 116; Physics 89-90.

Fourth Year

Preferred electives—H.E. 144-145, 143, 190; Arch. 1-2.

Group II—Food and Nutrition

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
English 1	5	English 2	5	Chemistry 2 or 22	5
Physiology 53	5	Chemistry 1 or 21	5	Physiology 55	5
Phys. Ed.	2	Physiology 54	5	Lang., Lit. or Hist.	5
		Phys. Ed.	2	Phys. Ed.	2

Preferred electives—H.E. 4, 7, 8, 25; P.S.D. 9.

SECOND YEAR

Lang., Lit. or Hist.	5	Lang., Lit. or Hist.	5	Lang., Lit. or Hist.	5
Bacteriology 101	5	Bacteriology 102	5	Psychology 1	5
Chemistry 135	5	Chemistry 136	5	Chemistry 144	5
Phys. Ed.	2	Phys. Ed.	1	Phys. Ed.	1

Preferred electives—H.E. 5; Soc. 56, 57; Psych. 118, 121.

THIRD YEAR

Economics 1	5	Chemistry 104	4
		Sociology 1	5

Preferred electives—H.E. 107-108, 111, 116; Nursing 5; Physics 89-90.

FOURTH YEAR

Preferred electives—H.E. 183, 190, 191 and related sciences.

Group III—Smith-Hughes Teacher Training

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
English 1	5	English 2	5	Lang., Lit., or Hist.	5
Physiology 7	5	Chemistry 1 or 21	5	Chemistry 2 or 22	5
Phys. Ed.	2	Phys. Ed.	2	Phys. Ed.	2

Preferred electives—Arch. 1-2; H.E. 4, 7, 8, 25; P.S.D. 9.
If H.E. 4 and 8 are taken in high school, substitute H.E. 43 and Nursing 5.

SECOND YEAR

Lang., Lit., or Hist.	5	Lang., Lit., or Hist.	5	Lang., Lit., or Hist.	5
Chemistry 135	5	Chemistry 136	5	Psychology 1	5
Phys. Ed.	2	Physical Ed.	1	Physical Ed.	1
Preferred electives—					
Home Economics 5	5	Home Economics 43	3	Bacteriology 101	5
		Nursing 5	2		

THIRD YEAR

Education 60	4	Education 70	5	Economics 1	5
Education elective	2			Education 75NA	3
				Sociology 1	5
Preferred electives—					
Physics 89	5	Physics 90	5	Home Econ. 107-108	10
Home Economics 112	5	Home Economics 113	5	Home Economics 143	3
		Home Economics 116	5	Home Economics 111	3

FOURTH YEAR

Education 75NB	3	Education 72	2½	Education 71	5
Preferred electives—					
Home Economics 148	2	Home Economics 144	2	Home Economics 145	2
		Home Economics 190	4	Home Economics 183	3

Group IV—Institutional Management

To be taken by those who wish to fit themselves for the following vocations:

1. Dietitians.
2. House directors.
3. Managers of tearooms, lunchrooms, cafeterias.
4. Food service in state, municipal, or charitable institutions.

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
English 1	5	English 2	5	Chemistry 2 or 22	5
Physiology 7	5	Chemistry 1 or 21	5	Lang., Lit. or Hist.	5
Phys. Ed.	2	Phys. Ed.	2	Phys. Ed.	2

Preferred electives—H.E. 4, 7, 25; P.S.D. 9; Arch. 1-2.

Second Year

Lang., Lit., or Hist.	5	Lang., Lit. or Hist.	5	Lang., Lit. or Hist.	5
Chemistry 135	5	Chemistry 136	5	Psychology 1	5
Phys. Ed.	2	Physical Ed.	1	Physical Ed.	1

Preferred electives—H.E. 5; Bact. 101.

Third Year

Economics 1	5	Sociology 1	5

Preferred electives—H.E. 107-108, 116, 124, 143; Chem. 144; Physics 89-90; B.A. 65 and 106.

Fourth Year

Preferred electives—H.E. 121, 122, 123, 125, 144, 145, 191.

Group V—Textiles, Clothing and Fine Arts

Summary

	Credits		*Credits*
College Requirements	67	Free Electives	31
Fine Arts	31	Physical Education	10
Home Economics	51		

A major in business administration may be elected with this curriculum. This is advised for those who wish to enter commercial fields in costume design. For this purpose students should elect the following courses: Business Administration 1, 62, 106, 136, 146, 147, 198. The normal diploma may be secured by electing the subjects required: Ed. 60, 70, 71, 75NA; and five hours in education.

Suggested Schedule

College Requirements	*Credits*	*Fine Arts*	*Credits*	*Home Economics*	*Credits*
English	10	P.S.D. 5, 6	6	H.E. 7. Survey	2
Lang., Lit., or Hist.	20	9, 10, 11	9	8. Elem. Clothing	3
Chem. 1-2, 21-22 or Phys. 89-90	10	169, 170	4	25. Textiles	5
Physiology 7	5	Electives	8	127. Non-Textiles	3
Economics 1	5	Arch. 1-2	4	101-102	4
Sociology 1	5			109. House M'gt.	5
Psychology 1	5			112-113. Clothing	10
Philosophy 1 or 2	5			133. Costume Des.	5
				135. Millinery	3
				143. Home Furn.	3
				160. 161. Adv. Cloth. Construction	6
				188. Adv. Text.	2
Total	65	Total	31	Total	51
Free Electives	36			Physical Education	10

B. FIVE-YEAR CURRICULUM 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 education and a certificate of nursing.

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
English 1	5	English 2	5	Home Economics 9	6
Nursing Education 1	5	Chemistry 1 or 21	5	Chemistry 2 or 22	5
Physics 89	5	Physics 90	5	Psychology 1	5
Physical Education	2	Physical Education	2	Physical Education	2

Second Year

Anatomy 101	3	Home Economics 105	5	Home Economics 106	5
Physiology 53	5	Physiology 54	5	Physiology 55	5
Economics 1	5	Sociology 1	5	Nursing Ed. 50	5
Elective	2	Physical Education	1	Physical Education	1
Physical Education	2				

Third Year

Anatomy 102	3	Anatomy 103	3	Bacteriology 103	5
Bacteriology 101	5	Bacteriology 102	5	Electives	10
English 40	5	Electives	7		
Electives	2				

Curriculum to be Followed in Hospital by Five-Year Nursing Students

	Credits		*Credits*
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

Curriculum for Graduate Nurses

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
English 1	5	Chemistry 1 or 21	5	Chemistry 2 or 22	5
Psychology 1	5	English 2	5	Economics 1	5
Elective	5	Elective	5	Elective	5
Physical Education	2	Physical Education	2	Physical Education	2

Preferred electives—Sociology 1, 63, 62; Zoology 16, 17.

Second Year

Physiology 53	5	Physiology 54	5	Physiology 55	5
Home Economics 105	5	Home Economics 106	5	Education 60	4
Elective	5	Elective	5	Elective	7
Physical Education	2	Physical Education	1	Physical Education	1

Preferred electives—Psychology 101, 114, 131; English 40; Sociology 131.

Third Year

Bacteriology 101	5	Bacteriology 102	5	Bacteriology 103	5
Nursing 102	5	Elective	5	Elective	10
Elective	5	Nursing 103	5		

Preferred electives—Sociology 155, 156, 157, 171, 173; Nursing 110.

C. PHYSICAL EDUCATION FOR MEN

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
English 1	5	English 2	5	English 40	5
Sociology 1	5	Zoology 1	5	Zoology 2	5
Electives	3	Electives	3	Electives	5
Physical Education 80	2	Physical Education 90	2	Physical Education 3	1⅗
Physical Education 1	1⅗	Physical Education 2	1⅗		

Second Year

Physiology 53	5	Physiology 54	5	Physiology 55	5
Psychology 1	5	Zoology 17	2	Sociology 62	3
Physical Education 112	2	Physical Education 110	3	Physical Education 113	3
Electives	3	Electives	5	Electives	4
Physical Education 51	1⅗	Physical Education 52	1⅗	Physical Education 53	1⅗

Third Year

Education 60	4	Education 120	3	Bacteriology 103	5
Political Science 101	2	Physical Education 132	2	Home Economics 104	2
Physical Education 131	3	Physical Education 142	3	Physical Education 133	2
Physical Education 141	3	Electives	7	Physical Education 143	3
Electives	4			Electives	3

Preferred electives—Physical Education 171, 155, 175.

Fourth Year

Education 70	5	Education 190	3	Education 71	2½
Education 71	2½	Education 75U	2	Physical Education 150	3
Physical Education 145	3	Education 71	2½	Physical Education 153	2
Electives	5	Nursing 140	3	Electives	8
		Electives	6		

Preferred electives—Phys. Ed. 170, 172, 173; Educ. 101, 146.

Chemistry 1-2 required of students who have not completed a year of Chemistry or Physics in high school.

D. PHYSICAL EDUCATION FOR WOMEN

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
English 1	5	Sociology 1	5	English 2	5
Zoology 1	5	Physical Education 100	2	Zoology 17	2
Zoology 16	2	Elective	3	Elective	3
Physical Education 4-5	2	Physical Education 6-7	2	Physical Education 8-9	2
Physical Education	3	Physical Education	3	Physical Education	3
Summer Quarter					
Physical Education 180	2				

Second Year

Physiology 53	5	Physiology 54	5	Physiology 55	5
Anatomy 101	3	Dramatic Art 5	5	Psychology 1	5
Anatomy 110	1	Anatomy 111	1	Anatomy 112	1
Physical Education 111	3	Physical Education 112	3	Physical Education 113	3
Elective	2	Physical Education	3	Physical Education	3
Physical Education	3				

Third Year

Education 60	4	Educ. Elective	3	Education 70	5
Physical Education 122	3	Physical Education 101	3	Physical Education 102	3
Physical Education 162	5	Physical Education 163	5	Physical Education 164	5
Educ. Elective	2	Elective	4	Elective	2
Elective	2				

Fourth Year

Physical Education 145	3	Physical Education 132	3	Physical Education 133	3
Physical Education 131	3	Nursing 140	3	Education 71	2½
Education 71	2½	Education 72	2½	Physical Education 153	2
Electives	7	Education 75V	2	Physical Education 152	2
		Electives	6	Electives	6

The equivalent of Chemistry 1-2 or Physics 89-90 is required in either high school or at the University.

A student may also use physical education as a major, following the prescriptions outlined under Elective Curricula, page 10 (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.

As a means of obtaining advanced practice in technique, supervised teaching, or advanced coaching and refereeing, major students are strongly advised to select several of the following courses during their junior and senior years: Phys. Ed. 178, 179, 159, 170, and 175.

Other elective courses which may be taken are: Phys. Ed. 134, 127, and 177.

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

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Chemistry 1 or 21	5	Chemistry 2 or 22	5	Chemistry 23	5
Zool. 3 (Pre-medical)	5	Zool. 4 (Pre-medical)	5	Physiology 7	5
English 1	5	English 2	5	Psychology 1	5
Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔

Second Year

Sci. French or German.	5	Physics 2	5	Chem. 129 (Organic)	5
Physics 1	5	Electives	5	Physics 3	5
English 73	3	Chem. 128 (Organic)	5	Ec. 1 or Pol. Sci. 1	5
Electives	2	Military or Naval Sci. or Phys. Ed.	1⅔	Military or Naval Sci. or Phys. Ed.	1⅔
Military or Naval Sci. or Phys. Ed.	1⅔				

Third Year

Anatomy 101	6	Anatomy 102	6	Anatomy 103	6
Anatomy 105	6	Anatomy 106	6	Anatomy 107	6
*Bacteriology 101	5	*Bacteriology 106	5	*Bacteriology 104	5

Fourth Year

Physiology 151	5	Physiology 152	5	Physiology 153	5
*Chemistry 161	5	*Chemistry 162	5	Bacteriology 112	5
Bacteriology 105	5	Electives	6	Anatomy 104	4
				Pol. Sci. 101	2

* Approved electives may be substituted.

V. 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:

	Credits		Credits
Nursing Educ. 102	5	‡Psychology 1	5
Nursing Educ. 103	5	‡Psychology 131, 132	8
‡Sociology 171	5	‡Bacteriology 103	5
‡Home Economics 105-106	10	‡Education 60	4
‡English 40	5	Field Work	16
		Total credits required	45

EXTENSION SERVICE CURRICULUM AT FIRLAND SANATORIUM

Which Also Leads to the Certificate in Public Health Nursing.

	Credits		Credits
Nursing Education 102	3	Sociology 171	5
Nursing Education 103	3	Psychology 1	3
Home Economics 104	3	English 1	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
Chemistry 7	5	Anatomy 25	3
Home Economics 9	6	Physiology 20	3

Courses of Study

For description of courses, see Departments of Instruction section.

‡ Electives.

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, 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 for a minimum amount of professional study, but all wishing to secure the life diploma are required to spend at least one quarter 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.

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.

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 most 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.

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 prevocational 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 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 hours of college credit earned in the University of Washington or in an accredited institution of equal rank. Disposition of these 90 hours 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 hours of credit may enroll in course 60, Secondary Education.

Students who are contemplating registration in the School of Education and in the introductory course, Education 60, should plan to have a conference with Professor Edgar M. Draper at least three months before registering for this course.

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 hours of credit 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 ad-

vanced 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.

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 hours of credit beyond requirements for entrance to the school, at least 48 of which shall be in upper division subjects. In the total of 180 hours of academic credit required for graduation from the School of Education the following must be included:

Academic major	35 credits
Academic minor	20 credits
Education, including 2 hours special teachers' course	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:

		Credits			*Credits*
60.	Secondary Education	4	190.	Educational Measurements	3
70.	Intro. High School Procedure	5	75.	Teachers' Course in Spec. Sub.	2
71.	Cadet Teaching	5-7½		Educational Electives	3½-6

Normal school graduates who are candidates for the bachelor's degree from the School of Education are required to take the following courses in education unless they have already pursued equivalent courses (in all cases they must earn at least ten credits in education at the University of Washington):

		Credits			*Credits*
60.	Secondary Education	4	75.	Teachers' Course in Spec. Sub.	2
190.	Educational Measurements	3		Educational Elective	1

An academic major consists of a minimum of 35 credits in some subject other than education, the number of credits and distribution of which shall be approved by the University faculty.

An academic minor consists of a minimum of 20 credits in some subject other than education, the number of credits and distribution of which shall be approved by the general faculty.

Part of the preparation in the academic major and minor should be completed before entrance to the School of Education.

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

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

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

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. 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. (c) Completion of the following courses in education:

	Credits		*Credits*
60. Secondary Education	4	75. Teachers' Course in Spec. Sub..	2
70. Introduction to H.S. Procedure.	5	Electives in Education.....	1½-4
71. *Cadet Teaching	5-7½		

*Students shall take 7½ hours in course 71, Cadet Teaching, except by exemption by the Dean of the School of Education.

Graduates of the two-year courses of state normal schools who subsequently graduate from this University and who become candidates for the University five-year normal diploma must earn in this University at least 10 credits in education. These credits shall be distributed as follows unless equivalent courses have already been pursued:

	Credits		*Credits*
60. Secondary Education	4	75. Teachers' Course in Spec. Sub..	2
190. Educational Measurements	3	Electives in Education.....	1

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.

Persons who have received the master's or doctor's degrees from this University are eligible to the University five-year normal 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
Botany
Chemistry
Civics
Commercial Teaching
Dramatic Art
Economics
English, including Public Speaking
French
Geography
Geology
German
History
Home Economics
Industrial Arts
Journalism
Latin
Mathematics
Physical Education for Men
Physical Education for Women
Physics
Political Science
Public School Art
Public School Music
Sociology
Spanish
Zoology

Major students in one field of music may also minor in another field of music.

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 subsequent to receiving the five-year normal diploma.

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 5 hours 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 twenty-four 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 six years two full quarters of residence work of at least 12 hours each subsequent to receiving the five-year normal diploma shall be required for the life diploma.

10. The education courses shall be specified by the dean of the School of Education with the view to rounding out 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 hours 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.

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 hours in education than Washington. The following are the requirements in several states: Arizona, 27 hours; California, 23 to 40 hours, also a year of graduate work; Colorado, 31 hours; Idaho, 15 hours; Illinois, 18 hours; Indiana, 28½ hours; Iowa, 21 hours; Kansas, 27 hours; Minnesota, 23 hours; Missouri, 27 hours; Montana, 17 hours; Nebraska, 18 hours; Nevada, 24 hours; New Mexico, 23 hours; North Dakota, 24 hours; Ohio, 36 hours; Oklahoma, 36 hours; Oregon, 22½ hours; Pennsylvania, 27 hours; South Dakota, 23 hours; Texas 36 hours; Utah, 27 hours; Wisconsin, 22½ hours; Wyoming, 18 to 30 hours, depending upon the kind of certificate.

The North Central Association of Secondary Schools and Colleges requires 22½ hours 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 hours 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

Major		*Credits*
101.	General Bacteriology	5
102.	Sanitary Bacteriology	5
103.	Pub. Hyg. Bacteriology	5
104.	Serology	5
105.	Infectious Diseases	5
106.	Clinical Diagnosis	5
	Bacteriology Electives	5
	Minimum total	35

Minor		*Credits*
101.	General Bacteriology	5
102.	Sanitary Bacteriology	5
103.	Public Hygiene	5
	Bacteriology Electives	5
	Minimum total	20

BOTANY

Major		*Credits*
1.	Elementary Botany	5
2.	Elementary Botany	5
105,106,107.	Morph. and Evol.	15
140,141,142. or 143,144,145.	General Fungi / Plant Physiology	15
	Minimum total	40

Minor		*Credits*
1.	Elementary Botany	5
2.	Elementary Botany	5
105,106,107.	Morph. and Evol.	15
	Minimum total	25

CHEMISTRY

Major	*Credits*
1-2. Gen. Inorganic Chem. or 21-22. Gen. Inorganic Chem.	10
23. Elem. Qualitative Anal.	5
101. Adv. Qualitative Anal.	5
111. Quantitative Analysis	5
131-132. Organic Chemistry	10
140-141. Elem. Physical Chem.	6
Minimum total	41

Minor	*Credits*
1-2. Gen. Inorganic Chem. or 21-22. Gen. Inorganic Chem.	10
23. Elem. Qualitative Anal.	5
101. Adv. Qualitative Anal. and 111. Quantitative Analysis or 131. Organic Chemistry 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

Major	*Credits*
1. Comparative Government	5
1. General Economics	5
1. Introductory Sociology	5
Elective in Political Science	15
Elective in Econom. or Sociology	5
Minimum total	35

Minor	*Credits*
1. Comparative Government	5
1. General Economics or 1. Introductory Sociology	5
Elective in Political Science	10
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 125-126.

(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 credit hours as follows:

	Credits
B.A. 102. Office Management	5
110. Advanced Accounting	5
120. Business Organization	5
124. Public Finance	5
167. Employment Management	5

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

	Credits
B.A. 1, 2. General Economics	10
7. Geographic Background of Industry	5
54, 55, 56. Business Law	9
62, 63, 64. Principles of Accounting	15
102. Office Management	5
110. Advanced Accounting	5
115. Business Correspondence	5

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.

DRAMA

Major	*Credits*
6,7,8. Fundamentals	9
127, 128, 129. History of Theatre	9
104,105,106. El. Workshop	12
114,115,116. Adv. Workshop	6
121,122,123. Adv. Playacting	9
153. Representative Plays	3
Electives	9
Minimum total	57

Minor	*Credits*
6,7,8. Fundamentals	9
127, 128, 129. History of Theatre	9
51,52,53. El. Playacting	9
104,105,106. Workshop	12
Minimum total	39

Substitutions in the above schedule may be arranged after consultation with the Department of English.

For a major the student having advanced credit from other institutions must take at least one-half of the required 57 hours at the University of Washington.

For a minor the student having advanced credit from other institutions must take at least one-half of the required 39 hours at the University of Washington.

Students will not be allowed to major in dramatic art in the upper division unless they have maintained an average of "B" or better in the lower division dramatic art courses. Majors will not be eligible for upper division work in the department until they have completed *all* of the lower division requirements.

After April 1, 1930, at the conclusion of the senior year, all major and minor students will be required to take examinations covering the entire field of study and practice in the department. Examinations will be both written and oral, and will be distributed over a period of one week.

Students transferring from other institutions, with junior standing, must submit to the department of dramatic art a certified copy of their credentials for approval before registering in the department. The department will not accept transfers of students from other institutions who have not maintained an average of "B" or better in drama studies, and it will reserve the right to require any such students to take certain of the lower division courses before allowing them to go into the upper division.

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:

		Credits
B.A.	60. Labor in Industry	5
	61. Soc. and Econ. Stand. of Living	3
	103. Money and Banking	5
	104. Economics of Transportation	5
	106. Econ. of Marketing and Adver.	5
	108. Risk and Risk Bearing	5
	121. Corporation Finance	5
	122. Principles of Investment	5
	124. Public Finance	5
	129. Taxation	5
	131. Economics of Public Utilities	5
	159. Advanced Money and Banking	5
	161. Labor Problems	5
	162. European Labor Problems	5
	164. Real Estate and Land Econ.	5
	165. Labor Legislation	3
	166. Women in Industry	2
	168. Development of Econ. Thought	5
	171. Modern Trends and Criticism	5
	181. Economics of Consumption	5

Minimum total for academic major—50 credits.
Minimum total for academic minor—20 credits.

ENGLISH

Major	*Credits*
1,2. Composition	10
73,74. Intro. to Modern Lit.	6
57. Intro. to Poetry	5
60. Intro. to Shakespeare	5
79. Oral Reading of Literature	3
90. Chaucer	3
117,118,119. Hist. of Eng. Lang.	4
170,171,172. Shakespeare, or 150,151,152. Old and Mid. Eng. Lit.	9
144,145,146. 18th Cent. Literature or 167,168,169. 17th Cent. Literature.	6 or 9
174,175,176. Late 19th Cent. Lit. or 177,178,179. Early 19th Cent. Lit. or 161,162,163. American Literature	9
Senior Examination	
	50 or 53

Minor	*Credits*
1,2. Composition	10
64,65. Literary Backgrounds	6
57. Intro. to Poetry	5
60. Intro. to Shakespeare	5
79. Oral Reading of Literature	3
117,118,119. Hist. of Eng. Lang.	4
144-179. One of the year courses required in the major's list	6 or 9
	29 or 32

1. Note that the above courses are recommended. Substitutions in this list are allowed, however, to fit a student's definite plan of study if approved in writing by the department of English.

2. Note also that, although English 1 and 2 are required, they do not give credit toward a major or minor. See the departmental statement for the substitution for English 2 recommended to majors and minors.

3. All students taking an academic major in English will be given an examination in composition and literature for entrance into Education 75H. As a result of this examination students may be required to take 75I or 75J. For a normal diploma, the student must pass 75H or 75I and 75J.

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

HUMAN GEOGRAPHY

Major	*Credits*
1. Elements of Geography (or 101. Principles of Geog.)	5
11. Weather & Climate (or 111. Principles of Meteorology)	5
B.A. 7. Geog. Backgrounds of Ind.	5
Geology 1 Introduction to Earth Science (or 6. Elem. of Physiog. or 106. Prin. of Physiog.)	5
Electives from upper div. courses in Geog.	15
Minimum total	35

Minor	*Credits*
1. Elements of Geog.	5
B.A. 7. Geog. Backgrounds of Ind.	5
102. Econ. Geog. of N.A.	5
Elective from upper div. courses in Geog.	5
Minimum total	20

PHYSICAL GEOGRAPHY & GEOLOGY

Major	*Credits*
1. Introd. to Earth Sci.	5
5. Rocks & Minerals	5
6. Elem. of Physiography	5
Geog. 1. Elem. of Geog.	5
Geog. 11. Weather & Climate	5
Geog. 115. Climatology	3
112. Physiog. of East. U.S. (or 113. Physiog. of West. U.S.)	5
128. Econ. Geology	5
Minimum total	38

Minor	*Credits*
1. Introd. to Earth Sci.	5
6. Elem. of Physiog.	5
Geog. 11. Weather & Climate	5
112. Physiog. of East. U.S. (or 113. Physiog. of West. U.S.)	5
Minimum total	20

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:

Major	*Credits*
5 to 12; 50a,b; 51a,b; 52a,b. Sec. Year Work, about	10
103,104,105. Recent Writers or equiv. 118a,b. Ger. Prose Read. or equiv. 139,140 Stud. in Ger. Lit. or equiv. 142. Lyrics and Ballads or equiv. 180,181,182. 19th Cent. Literature or equiv.	about 20
109,110,111. Adv. Composition	3
121. Phonetics	2
Minimum total	35

Minor	*Credits*
5 to 12. Second Year Work, about	10
103,104,105 Recent Writers or equiv. 118a,b. Ger. Prose Read. or equiv. 139,140. Stud. in Ger. Lit. or equiv. 142. Lyrics and Ballads or equiv.	about 6
109,110,111. Adv. Composition	3
121. Phonetics	2
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 of upper division grade. 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 127).

B. Fulfillment of following major or minor requirements.

Major	*Credits*
1. Required: a total of 48 credits.	
1-2. Medieval and Modern	10
5-6. English History	10
71-72-73. Ancient Hist.	9
57-58-59. United States or 143,144,145. United States	9
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 or 163-164-165. Northwest Hist.	5 or 6
114. Renaissance or 115. Reformation or 129. French Revolution or 130. Europe, 1814-1870 or 131. Europe Since 1870 or 182. England in the 19th Century	5
Mnimum total	48 or 49

Minor	*Credits*
1-2. Medieval and Mod. Eur. Hist.	10
143,144,145. Advanced U.S. or 71-72-73. Ancient History	9
or 131. Europe Since 1870	5
Electives	1-5
Minimum total	20

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.

	Credits
4. Food Preparation	3
5. Food Selection and Preparation.	5
7. H.E. Survey	2
8. Clothing	3
25. Textiles	5
43. Home Sanitation	3
107-108. Dietetics	10
111. Child Care	3
112-113. Costume Design and Const.	10
116. Food Selection and Prep.	5
143. Home Furnishing	3
144-145. Household Management	4
148. Home Management House.	2
Minimum total	58

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

Major	*Credits*
25. Textiles	5
109. Elem. of Home Economics	5
112-113. Costume Des. and Construc.	10
130-131. Com. Clothing Construc.	6
133. Clothing Costume Design	5
135. Millinery	3
143. Home Furnishing	3
148. Home Management House	2
Minimum total	39

Minor	*Credits*
25. Textiles	5
112-113. Costume Des. and Construc.	10
143. Home Furnishing	3
Home Econ. Electives	2
Minimum total	20

Prerequisites for either major or minor

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

P.S.D. 9. Art Structure 3

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.

JOURNALISM

Major	*Credits*
51. News Writing	5
101. Reporting	5
120. Copy Reading	3
150. Editorial Writing	3
Elect 19 credits from any of the following:	
3. Elements of Publishing	3
130. Fundamentals of Advertising	5
131. Display Advertising	5
138. History of Journalism	5
135. Publicity	2
170-171-172. Features	6
Educ. 75S. News. for Teachers	2
250. Research	3-5
Minimum total	35

Minor	*Credits*
51. News Writing	5
101. Reporting	5
120. Copy Reading	3
150. Editorial Writing	3
Electives	4
Minimum total	20

LATIN

Major	*Credits*
Greek 1-2-3. Elementary Greek	15
Thirty-five credits selected from the following (at least eighteen credits in Upper Division courses):	
Latin 21. Cicero: De Senectute; Latin Literature (MacKail).	5
22. Catullus; Latin Lit. (MacKail)	5
23. Virgil: Georgics and Bucolics; Latin Lit. (MacKail)	5
24. Sallust: Catiline and Jugurtha; Latin Lit. (MacKail)	5
25. Ovid: Metamorphoses	5
100. Livy	5
101. Horace	5
102. Tacitus	5
103. Plautus and Terence	5
106. Syntax and Prose Comp.	3
107. Cicero's Letters	3
108. Virgil's Aeneid. Books VII-XII.	3
109. Pliny's Letters	3
113. Roman Home Life and Religion	3
Senior Examination	
Minimum total	50

Minor	*Credits*
Twenty credits selected from the following:	
Latin 21. Cicero: De Senectute; Latin Literature (MacKail).	5
22. Catullus; Latin Lit. (MacKail)	5
23. Virgil: Georgics and Bucolics; Latin Lit. (MacKail)	5
24. Sallust: Catiline and Jugurtha; Latin Lit. (MacKail)	5
25. Ovid: Metamorphoses	5
100. Livy	5
101. Horace	5
102. Tacitus	5
103. Plautus and Terence	5
106. Syntax and Prose Comp.	3
107. Cicero's Letters	3
108. Virgil's Aeneid. Books VII-XII.	3
109. Pliny's Letters	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.	
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

Major	*Credits*
4. Plane Trigonometry	5
5. College Algebra	5
6. Analytical Geometry	5
107,108,109. Diff. and Integral Calc.	15
131. Selected Topics in Mathematics	3
Electives in Mathematics	6
Minimum total	39

Minor	*Credits*
4. Plane Trigonometry	5
5. College Algebra	5
6. Analytical Geometry	5
131. Selected Topics in Mathematics	3
Electives in Mathematics	5
Minimum total	23

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, mathematics 1 should be elected during the freshman year in addition to above schedule. If the student has not had solid geometry he should either take Math. 2 in addition to the above schedule or among his electives.

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

Prerequisite: Equivalent of four years of piano study for either major or minor.

Major	*Credits*
4,5,6. Music Hist. and Apprec.	9
15,16. Sight. Read. and Ear Train.	6
51. Elementary Harmony	5
53. Intermediate Harmony	5
56. School Music	5
101. Advanced Harmony	5
113,114. Music Education	4
154,155,156. Music Supervision	6
Minimum total	45

Minor	*Credits*
(In Theoretical and Applied Music for Music Majors.)	
109. Counterpoint	5
112. Music Forms	5
117. Elementary Composition	5
18,19,20. Applied Music 68,69,70. Applied Music 118,119,120. Applied Music	9
Minimum total	24
The following courses may be selected as a minor by any student whose major lies in some field other than music:	
4,5,6. Music Hist. and Apprec.	9
15,16. Sight. Read. and Ear Train.	6
51. Elementary Harmony	5
53. Intermediate Harmony	5
56. School Music	5
113,114. Music Education	4
or Applied Music	6
Minimum total	34 or 36

PHYSICAL EDUCATION FOR MEN

Major	*Credits*
90. Personal and Gen. Hygiene	2
110. Athletic Train. and First Aid.	3
131. Kinesiology	3
132. Individual Gymnastics	2
133. Individual Gymnastics	2
141. Phys. Educ. Methods	3
142. Phys. Educ. Methods	3
143. Phys. Educ. Methods	3
145. Principles of Phys. Educ.	3
150. Phys. Educ. and Admin.	3
153. Meth. in Health Education	2
Advanced Athletic Methods	6
Minimum total	35

Required supplementary courses:
Biological Sciences:
Zoology 1 and 2
Physiology 53, 54, 55
Or the equivalent.

Social Sciences:
Sociology 1
Psychology 1
Or the equivalent
5 hours electives.

Minor	*Credits*
90. Personal and Gen. Hygiene	2
110. Athletic Train. and First Aid.	3
141. Phys. Educ. Methods	3
142. Phys. Educ. Methods	3
143. Phys. Educ. Methods	3
145. Principles of Phys Educ.	3
Advanced Athletic Methods	4
Minimum total	21

PHYSICAL EDUCATION FOR WOMEN

Major	*Credits*
101-102. Survey of Gym.....	6
111. Rhythms and Dramatic Games.	3
112. Elem. Athletic Games.....	3
113. Org. & Admin. of Playgrounds.	3
122. Kinesiology	3
131-132-133. Adap. Activ.	9
152. Admin. of P.E.....	2
153. Meth. in Health Educ.....	2
162,163,164. Meth. in P.E.....	15
180. Campcraft	2
Minimum total.....	48
Required supplementary sciences:	
Anatomy 101, 110-111-112	6
Physiology 53-54-55	15

Minor	*Credits*
111. Rhythms and Dramatic Games.	3
112. Elem. Athletic Games.....	3
162,163,164. Meth. in P.E.....	15
Minimum total.....	21

Required supplementary courses; 15 credits to be selected from sociology, dramatic art and zoology.

Anatomy and physiology 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.

PHYSICS

Major	*Credits*
1-2,3. General Physics or 4-5,6. General Physics	15
101. Introd. to Mod. Theories.....	5
Physics Electives* (restricted).....	15
Minimum total.....	35

*Courses numbered below 200.

Minor	*Credits*
1-2,3. General Physics or 4-5,6. General Physics	15
Physics Electives*	10
Minimum total.....	25

A teaching major or minor in physics should be supported by at least a year of college mathematics.

To be recommended to teach physics, a minimum of 25 hours, with an average grade better than C is required.

For recommendation for normal diploma with physics as a major or a minor, the requirement is the same as the above with an average grade better than C.

POLITICAL SCIENCE

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

Minor	*Credits*
1. Comparative Government	5
101. Intro. to Amer. Const. Govt...	2
151. American National Government.	5
161. Municipal Government	5
Electives	3
Minimum total.....	20

PUBLIC SCHOOL ART

Requirements for Academic Majors and Minors in P.S.D.
Both major and minor are required.

Major	*Credits*
5,6,7. Drawing	9
9,10,11. Art Structure	9
53. Art Structure	3
56,57,58. Drawing and Painting	9
160. Life	3
116. Illustration	3
101,102. Public School Art	4
126,127,128. History of Art	3
Minimum total	43

Minor	*Credits*
Applied Arts.	
For Majors in Public School Art only.	
54,55. Art structure	6
151. Illustration	3
166. Stage Design	3
105,106. Art Structure	6
103,104. Pottery, or	
157,158. Metal Work	6
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

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

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

*Conducted in French.

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

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

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

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

SOCIOLOGY

Major	*Credits*
1. Introductory Sociology or 150. General Sociology	5
55. Human Ecology or 65. The City	5
66. Group Behaviour	5
Electives from courses offered in the department after consultation regarding the special field of interest.....	20
Minimum total.....	35

Minor	*Credits*
1. Introductory Sociology or 150. General Sociology	5
55. Human Ecology or 65. The City	5
66. Group Behaviour	5
Electives from courses offered in the department after consultation regarding the special field of interest.....	10
Minimum total.....	25

ZOOLOGY

Major	*Credits*
1-2. Elements of Zoology..... or 53-54-55. Physiology	10 15
Zoology Electives .....20 to	25
Minimum total.....	35

Minor	*Credits*
1-2. Elements of Zoology..... or 53-54-55. Physiology	10 15
Zoology Electives 5-10	
Minimum total.....	20

Courses of Study

For a description of courses, offered by the School of Education, 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.

In preparing for the Library School a student should maintain an average of B, as a strong foundation is essential for successful library service.

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 hours required for graduation.

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, to be 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 will be granted.

Advisory Suggestions

In preparing for the Library School a student should 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.

CURRICULA

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
English ‡1-2. Composition	10
21. Intro. to Poetry	5
40. Essentials of Speaking	5
70,71,72. Shakespeare	9
64,65,66. Lit. Backgrounds	9
[2]Hist. 1-2. Medieval and Modern	10
5-6. Eng. Pol. and Social	10
[2]Science. Bot., Geol. or Zool	10
Music 13. Appreciation	5
[3]Mod. Lang. ‡1-2-3. French or Ger.	15
Psych. ‡1. General	5
Lib. Arts †1. Intro. to Mod. Thought	5
Arch. 3. Appreciation	2
[4]Latin ‡11,13. Rom. Civ. and Lit.	10

Second Year

	Credits
[3]Mod. Lang. ‡ Fourth Qr. of Foreign Language previously taken	5
Begin other language required by Library School	10
[2]Hist. †57-58-59. United States	9
Or. Stud. 75-76. Hist. of China	10
78-79. History of Japan	10
[4]Greek ‡15-16. Civilization	10
Anthrop. 51. General Intro. to Anth.	5
Zool. 16. Evolution	2
17. Eugenics	2
[1]Pol. Sci. ‡1. Comparative Gov't.	5
[1]Soc. ‡1. Introduction	5
97. America in Civilization	5
62. Play and Leisure Time	3
[1]Econ. ‡1. Introduction	5
7. Geog. Background of Industry.	5
61. Soc. and Econ. Standards	5
Lib. Arts †11. Intro. to Fine Arts	5

Third Year

	Credits
[3]Mod. Lang. Complete Library School Requirement	10
Phil. ‡1, 2 or 3. Introduction	5
Hist. 125. Turkey and Near East	5
129. Fr. Rev. and Napoleonic Era.	5
†130. Europe, 1814-1870	5
†131. Europe Since 1870	5
Pol. Sci. 122. Foreign Affairs	3
123. International Relations	3
Or. Stud. 114, 115, 116. History of Religion	9
120. Prob. Eastern Asia and Pac.	5
Eng. †134. Reformation in Eng.	3
†137. 19th Century Prose	3
†164,165,166. Am. Lit. from 1870	9
174,175. 19th Century Poetry	6
[2]Sci. Phys. 1-2 or Chem. 1-2	10
German †106,108. Ger. Lit, in Tr.	5
French †118,119,120. Surv. Fr. Lit.	9
†181,182,184. Ital. Lit. in Tr.	6
Scand. Lit. 109,110,111. Mod. Auth.	3
†180,181,182. Recent Lit.	6

[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 hours 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.

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
175. Classif. and Cat..	4	184. Classif. and Cat...	3	191. Classif. and Cat...	4
177. Reference	3	185. Reference	3	193. Reference	2
178. Hist. of Books...	2	187. Libr. Organization.	2	197. Libr. Admin.	2
179. Book Selection ..	2	°§188. Book Selection ..	2	°§196. Book Selection.	2-4
170. Children's Work..	3	§183. Lit. for Children	2	§194. Bibliography	3
171. Library Econ. ..	2	°§180. Story Telling ...	1	°§190. Lit. for Children	2
		§181. Adv. Child. Wk.	1	°§180. Story Telling ...	1
		°§182. School Work ...	1	°§199. Adv. Child. Wk.	1
		186. Practice	5	°§182. School Work ...	1

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

	Credits		*Credits*
§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

	Credits		*Credits*
§Mod. Lang. ‡Fourth quarter of foreign language previously taken...	5	Zoology ‡16. Evolution	2
Begin other foreign language required by Library School.....	10	17. Eugenics	2
Pol. Sci., Econ. or Soc. 1. Intro....	5	History 1-2. Mod. and Medieval.....	10
English ‡1-2. Composition	10	Geology ‡1, 7. General.....	10

THIRD YEAR

	Credits		*Credits*
§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
		English 136,137. 19th Cent. Prose...	6

III. LIBRARY WORK WITH CHILDREN

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
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	*Soc. 57. Child Welfare	3	*§Education	3

COURSES OF STUDY

For the work of the lower division and for courses in departments other than library science the sections of the catalogue relating to the Colleges of Liberal Arts and Science and the Departments of Instruction should be consulted.

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*May be taken in preparation.
§ The Library School requires 20 hours each of two modern foreign languages, French and German, in either high school or college.
‡ Electives.
° Consult instructor.
* Consult dean of the Library School.

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 51-68.

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 degree of bachelor of business administration is conferred on any student who has fulfilled the entrance requirements and who presents 190 credits in subjects required or approved by the faculty of the College of Business Administration.

The degree of master of arts (M.A.) or master of business administration (M.B.A.) or master of arts in business administration (M.A. in B.A.) is conferred on students who complete in a satisfactory manner an approved course ordinarily requiring three quarters of advanced work beyond that required for the bachelor's degree. The degree of master of arts implies a major in liberal arts courses in economics and a minor in some related subject in some other department. The degree of master of business administration is a professional degree, and implies that a candidate's work has been confined to business administration or economics. The degree of master of arts in business administration is a semi-professional degree and implies a major in business administration and a minor in some related subject in some other department. Before being recognized as a candidate for an advanced degree a student must appear before a committee appointed by the dean of the Graduate School to determine the student's fitness for such work and to confer with him upon his proposed course of study.

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.

At least three-fourths of the credits required for graduation must be earned with grades of A, B, or C.

Curriculum

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:

First Year

	Credits
B.A. 1, B.A. 2. General Economics	10
7. Geographic Background of Industry	5
English 1. Written and Oral English	5
37. Argumentation	5
*Physical Science (10 hours) or Biological Science (10 hours) or Mathematics (10 hours) or Foreign Language (10 hours)**	10
‡Approved electives	10

Second Year

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

Third Year

B.A. 60. Labor in Industry	5
115. Business Correspondence	5
103. †Money and Banking, or	
106. †Economics of Marketing and Advertising, or	
108. †Risk and Risk Bearing	10
Political Science	5
‡Approved electives	40

Fourth Year

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

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 these 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

*Students majoring in water transportation are required to take B.A. 49 (Ship Operation) and B.A. 53 (Navigation). This satisfies the requirement and they are therefore not required to take 10 hours of a physical or biological science, mathematics, or foreign language.

**Students electing foreign language to satisfy this requirement who have not had two units of the language chosen in high school must take 20 hours in the college, ten hours of which will count as electives.

‡Of the total 82 hours of electives, 10 must be chosen from philosophy, psychology, sociology or political science. Of the approved electives in the junior and senior years at least 25 hours must be in the upper division courses in economics and business administration.

†Students are required to take 10 hours selected from the three courses, B.A. 103, B.A. 106, B.A. 108.

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, 160, 168, and at least 30 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:

		Credits
B.A.	60 Labor in Industry	5
	61. Social and Economic Standards of Living	3
	103. Money and Banking	5
	104. Economics of Transportation	5
	106. Economics of Marketing and Advertising	5
	108. Risk and Risk Bearing	5
	121. Corporation Finance	5
	122. Principles of Investment	5
	124. Public Finance	5
	129. Taxation	5
	131. Economics of Public Utilities	5
	159. Adv. Money and Banking	5
	161. Labor Economics	5
	162. European Labor Problems	5
	164. Real Estate and Land Econ.	5
	165. Labor Legislation	3
	166. Women in Industry	2
	168. Dev. of Econ. Thought	5
	171. Mod. Trends and Criticism	5
	175. The Business Cycle	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 hours 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 conferred 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 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 prepares students for the following professions:

(a) Economics
(b) Accounting
(c) Commercial Banking and Credit Administration
(d) Commercial Teaching
(e) Foreign Trade
(f) Insurance
(g) Investment Banking
(h) Labor
(i) Management
(j) Marketing, Merchandising, and Advertising
(k) Public Utilities
(l) Real Estate
(m) Transportation

Students majoring in these fields must:

1. Satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144.
2. Take a minimum of 25 upper division credit hours in the major field;
3. Have their selection of courses approved by their major professor.

(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 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 satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144.

(2) Required to take 25 credit hours from the following list:

		Credits
B.A. 61.	Social and Economic Stand. of Living	3
*103.	Money and Banking	5
104.	Economics of Transportation	5
*106.	Economics of Marketing and Advertising	5
*108.	Risk and Risk Bearing	5
121.	Corporation Finance	5
122.	Principles of Investment	5
124.	Public Finance	5
129.	Taxation	5
B.A. 131.	Econ. of Public Utilities	5
159.	Adv. Money and Banking	5
161.	Labor Economics	5
162.	European Labor Problems	5
164.	Real Estate and Land Econ.	5
165.	Labor Legislation	3
166.	Women in Industry	2
168.	Dev. of Econ. Thought	5
171.	Mod. Trends and Criticism	5
175.	The Business Cycle	5
181.	Economics of Consumption	5

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

(3) 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	Zool. 16. Evolution	2
Soc. 131. Social Statistics	5	17. Eugenics	2

(b) of approved courses in the following fields: Anthropology, Economics and Business Administration, English, Foreign Language, History, Philosophy, Political Science, Psychology, Sociology.

(B) ACCOUNTING

The courses in Accounting are planned to prepare students for positions in the following fields: (1) professional accounting, industrial accounting, governmental and industrial auditing; (2) executive positions in business concerns, as head accountants, treasurers, cashiers, comptrollers, and budget directors.

Students majoring in Accounting are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144.

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

	Credits		Credits
B.A. 110,111, 112. Adv. Accounting.	15	B.A. 184. Auditing Technique	5
154. Cost Accounting I	5	or	
156. Auditing	5	191. Research in Accounting	5

(3) 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:

	Credits		Credits
B.A. 155. Cost Accounting II	5	B.A. 184. Auditing Technique	5
157. Income Tax Accounting	5	185. C.P.A. Problems	5
158. Managerial Accounting	5	191. Research in Accounting	2-5

(b) in general business subjects:

	Credits		Credits
B.A. 59. Graphic and Tabular Anal. of Bus. Probs	5	B.A. 136. Market Analysis	5
102. Office Management	5	163. Industrial Management	5
120. Business Organization	5	172. Executive Technique and Budgetary Control	5
121. Corporation Finance	5	175. The Business Cycle	5
122. Principles of Investment	5	177. Business Forecasting	5
124. Public Finance	5	196. Research in Management	2-5
126. Commercial Credit	5	Law 187-188. Private Corporations	6
130. Industrial Anal. and Control.	5	Math. 13. Statistical Methods	5
132. Management of Pub. Utilities.	5		

(C) COMMERCIAL BANKING AND CREDIT ADMINISTRATION

The courses in Commercial Banking and Credit Administration 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; (5) treasurer's departments of corporations; (6) financial administrative work in business enterprises.

Students majoring in Commercial Banking and Credit Administration are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144. This must

include B.A. 103, Money and Banking, taken preferably in the third quarter of the sophomore year or the first quarter of the junior year.

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

	Credits		Credits
B.A. 121. Corporation Finance	5	B.A. 127. For. Exch. & Intern. Bank'g	5
125. Bank Administration	5	159. Adv. Money and Banking	5
126. Commercial Credit	5	189. Bank Credit Administration	3

(3) 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 this field:

	Credits		Credits
B.A. 120. Business Organization	5	B.A. 176. Investment Analysis	5
122. Principles of Investment	5	177. Business Forecasting	5
175. The Business Cycle	5	178. The Stock Exchange	3

(b) from the following list:

	Credits		Credits
B.A. 59. Graphic and Tabular Anal. of Business Problems	5	Law 176. Mortgages	5
104. Economics of Transportation	5	183. Suretyship	3
*106. Economics of Marketing and Advertising	5	191. Property V	5
*108. Risk and Risk Bearing	5	196. Trusts	5
110,111,112. Advanced Accounting	15	Math. **11. Investments I	5
124. Public Finance	5	**12. Investments II	5
131. Economics of Pub. Utilities	5	**13. Statistical Methods	5
173. International Com. Policies	5	Eng. 40. Essentials of Speaking	5
Law 137. Negotiable Instruments	3	101. Public Debate	2
159. Wills	3	Hist. 1-2. Medieval and Mod. Europe	10
		5-6. English Pol. and Soc. Hist	10
		O.S. 25. History of Asia	5

(D) 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 143-144.

(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 page 125.

(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 credit hours as follows:

	Credits		Credits
B.A. 102. Office Management	5	B.A. 124. Public Finance	5
110. Advanced Accounting	5	167. Employment Management	5
120. Business Organization	5		

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

(E) FOREIGN TRADE

The courses in Foreign Trade are planned to prepare students for: (1) positions and eventual executive work in the export department of manufacturing concerns; (2) positions in export commission houses in the United States; (3) positions as representatives in foreign lands of American export houses or manufacturing concerns; (4) customs brokerage; (5) inde-

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

pendent work as export and import brokers or export merchants; (6) positions with foreign freight forwarders or independent work in this field; (7) positions 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 satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144.

(2) Required to take 27 credit hours as follows:

	Credits		*Credits*
B.A. 117-118.	Exporting and Import.. 10	B.A. 145.	Trade of the Americas... 5
143.	Trade of Far and Near East. 5	174.	Foreign Trade of the West Coast..... 2
144.	Trade of Europe 5		

(3) 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. 104.	Econ. of Transportation.. 5	B.A. 173.	International Commercial Policies..... 5
113.	Ports and Terminals..... 3	195.	Research in Foreign Trade and Transportation.....2-5
119.	Water Transportation 5	Geog. 102.	Economic Geography of North America..... 5
127.	Foreign Exchange and International Banking..... 5	103.	Pol. and Econ. Geog. of Asia 5
134.	Marketing Problems 5	105.	Econ. Geog. of Latin America 5
135.	Marketing of Northwest Prod. 5	Law 165.	Admiralty 3
136.	Market Analysis 5	184-185.	International Law 6
146.	Retail Sales Problems..... 5	Pol. Sci. 121.	For. Rel. of the U.S.. 3
147.	Retail Buying Problems..... 5	122.	Admin. of Amer. For. Affairs. 3
148.	Retail Store Organization.... 5	123.	International Relations 3
149.	Marine Insurance 5	Twenty hours or more of some modern foreign language.	
151.	Transportation Rates 5		
152.	Shipping and Consular Reg.. 3		
159.	Adv. Money and Banking.... 5		

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 satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144.

(2) Required to take the 27 credit hours listed in Paragraph 2 above and, in addition, at least 30 hours of some modern foreign language.

(3) 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. 104.	Econ. of Transportation... 5	Geog. 103	Political and Economic Geography of Asia..... 5
119.	Water Transportation 5	105.	Econ. Geog. of Latin America 5
127.	Foreign Exchange and International Banking 5	Hist. 1-2.	Medieval and Mod. Europe. 10
134.	Marketing Problems 5	157-158-159.	Hist. of American Diplomacy 6
136.	Market Analysis 5	O.S. 75-76.	History of China.....10
149.	Marine Insurance 5	78-79.	History of Japan.....10
151.	Transportation Rates 5	Law 165.	Admiralty 3
152.	Shipping & Consular Reg..... 3	184-185.	International Law..... 6
159.	Adv. Money and Banking... 5	Pol. Sci. 121.	For. Rel. of the U.S.. 3
173.	International Commer. Policies 5	122.	Admin. of For. Affairs..... 3
Geog. 102.	Economic Geography of North America..... 5	123.	International Relations 3
		129.	Intern. Rel. of the Far East.. 5

(F) INSURANCE

The courses in Insurance are planned to prepare students for: (1) selling various types of insurance; (2) employment in offices of insurance companies or agencies; (3) executive work outside of offices, known generally as field work.

Students majoring in Insurance are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144. This must include B.A. 108, Risk and Risk Bearing, taken preferably in the third quarter of the sophomore year or the first quarter of the junior year.

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

	Credits		*Credits*
B.A. 120. Business Organization	5	B.A. 149. Marine Insurance	5
141. Fire Insurance	5	170. Casualty Insurance	5
142. Life Insurance	5	Law 133. Insurance	3

(3) 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. 102. Office Management	5	B.A. 175. The Business Cycle	5
103. Money and Banking	5	Eng. 38. Argumentation and Debate	5
121. Corporation Finance	5	40. Essentials of Speaking	5
122. Principles of Investment	5	41. Advanced Speaking	3
124. Public Finance	5	43. The Speaking Voice	3
127. For. Exch. & Internat. Bank.	5	Law 100. Agency	5
138. Sales Management	5	103-104. Contracts	10
152. Shipping and Consular Reg.	3	165. Admiralty	3
164. Real Estate and Land Econ.	5	Phil. 3. Introd. to Ethics	5

(G) INVESTMENT BANKING

The courses in Investment Banking are planned to prepare students for positions with: (1) investment banks and bond houses; (2) bond departments of commercial banks; (3) stock brokers.

Students majoring in Investment Banking are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144. This must include B.A. 103, Money and Banking, taken preferably in the third quarter of the sophomore year or the first quarter of the junior year.

(2) Required to take 33 credit hours as follows:

	Credits		*Credits*
B.A. 120. Business Organization	5	B.A. 175. The Business Cycle	5
121. Corporation Finance	5	176. Investment Analysis	5
122. Principles of Investment	5	178. The Stock Exchange	3
124. Public Finance	5		

(3) 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. 104. Econ. of Transportation	5	B.A. 189. Bank Credit Administration	3
127. Foreign Exchange and International Banking	5	Eng. 40. Public Speaking	5
129. Taxation	5	Geog. 102. Economic Geography of North America	5
131. Econ. of Public Utilities	5	Law 137. Negotiable Instruments	3
150. Railroad Transportation	5	187-188. Private Corporations	6
159. Adv. Money and Banking	5	Phil. 2. Introd. to Social Ethics	5
164. Real Estate and Land Econ.	5	Pol. Sci. 123. International Relations	3
177. Business Forecasting	5		

(H) LABOR

The courses in Labor are planned to prepare: (1) Liberal Arts students who wish to specialize as undergraduates in the field of labor or as graduates in the field of labor research; (2) Business Administration students who expect to enter the industrial field as employment managers.

Students majoring in Labor are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144.

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

	Credits		Credits
B.A. 61. Social and Economic Standards of Living	3	B.A. 167. Employment Management	5
161. Labor Economics	5	168. Develop. of Econ. Thought	5
162. European Labor Problems	5	171. Mod. Trends and Criticism	5

(3) 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
B.A. 175. The Business Cycle	5	Math. 13. Statistical Methods	5
181. Economics of Consumption	5	Phil. 2. Introd. to Social Ethics	5
Eng. 161,162,163. American Lit.	9	Zool. 16. Evolution	2

(b) of approved courses in the following fields: American and European History, Economics and Business Administration, Sociology.

(I) MANAGEMENT

The courses in Management are planned: (1) to prepare students for positions as personnel managers, directors of business research departments and bureaus, departmental managers and factory superintendents in the industrial field; (2) in conjunction with the accounting courses, to prepare students for positions as comptrollers and budget directors.

Students majoring in Management are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144. This should include Math. 11, Investments I, and Math. 13, Statistical Methods.

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

	Credits		Credits
B.A. 130. Industrial Anal. & Control.	5	B.A. 172. Executive Technique and Budgetary Control	5
163. Industrial Management	5	M.E. 140. Time Study and Job Anal.	5
167. Employment Management	5		

(3) 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 Bus. Prob.	5	B.A. 158. Managerial Accounting	5
102. Office Management	5	161. Labor Economics	5
106. Economics of Marketing and Advertising	5	162. European Labor Problems	5
107. Traffic Management	5	168. Develop. of Econ. Thought	5
110,111,112. Advanced Accounting	15	175. The Business Cycle	5
120. Business Organization	5	*176. Investment Analysis	5
*121. Corporation Finance	5	*177. Business Forecasting	5
*122. Principles of Investment	5	196. Research in Management	2-5
126. Commercial Credit	5	Psych. 1. General Psychology	5
128. Human Waste in Industry	3	Chem. 1-2. Gen. Inorganic Chemistry	10
*132. Management of Pub. Utilities.	5	121. Industrial Chemistry	5
*136. Market Analysis	5	122. Industrial Chemistry	5
139. Industrial Relations	3	123. Industrial Chemistry	5
*154,155. Cost Accounting	10	Physics 1-2, 3. General Physics	15
		G.E. 7. Engineering Drawing	3
		Law 187-188. Private Corporations	6

*These courses are especially recommended.

(J) MARKETING, MERCHANDISING, AND ADVERTISING

1. Marketing

The courses in Marketing are planned: (1) to explain the present marketing system and analyze current criticisms of marketing agencies; (2) to present the theory of and provide practice in planning, executing, reporting, and interpreting market analyses; (3) to dissect the complex activities growing out of the selling problems of modern business; (4) to prepare for work as salesman, sales manager, research specialist, and distribution analyst with any business organization.

Students majoring in Marketing are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144. This must include B.A. 106, Economics of Marketing and Advertising, taken preferably in the third quarter of the sophomore year or the first quarter of the junior year.

(2) Required to take 35 credit hours as follows:

	Credits		*Credits*
B.A. 134. Market Problems	5	B.A. 140. The Co-operative Movement	5
135. Marketing Northwest Prod.	5	177. Business Forecasting	5
136. Market Analysis	5	198. Research in Marketing and Advertising	5
138. Sales Management	5		

(3) 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. 137. Advertising Campaigns	5
103. Money and Banking	5	146. Retail Sales Problems	5
104. Economics of Transportation	5	147. Retail Buying Problems	5
107. Traffic Management	5	148. Retail Store Organization	5
108. Risk and Risk Bearing	5	172. Executive Technique and Budgetary Control	5
117-118. Exporting and Importing	10	175. The Business Cycle	5
120. Business Organization	5	Eng. 103. Extemp. Speaking	3
127. Foreign Exchange and International Banking	5	Law 100. Agency	5
130. Industrial Anal. and Control	5	146,147. Sales	6
		193. Trade Regulations	3

2. Merchandising

The courses in Merchandising are planned to give a basic training to students who aim to become merchandise managers, buyers, assistant buyers, stylists, statisticians, personal shoppers, personnel directors, educational directors, store superintendents, store managers, office managers, publicity directors and credit managers in retail institutions.

Students majoring in Merchandising are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144. This must include B.A. 106, Economics of Marketing and Advertising, taken preferably in the third quarter of the sophomore year or the first quarter of the junior year.

(2) Required to take 33 credit hours as follows:

	Credits		*Credits*
B.A. 146. Retail Sales Problems	5	Eng. 103. Extemporaneous Speaking	3
147. Retail Buying Problems	5	H.E. 25. Textiles	5
148. Retail Store Organization	5	or	
188. Apprenticeship in Merchandis.	10	B.A. 126. Commercial Credit	5

(3) 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. 102. Office Management	5	B.A. 175. The Business Cycle	5
109. Advertis. Prin. and Practice	5	Eng. 40. Essentials of Speaking	5
117-118. Exporting and Importing	10	41. Advanced Speaking	3
126. Commercial Credit	5	H.E. 25. Textiles	5
134. Marketing Problems	5	127. Non-Textiles	3
135. Marketing of Northwest Prod.	5	143. Home Furnishing	3
136. Market Analysis	5	188. Advanced Textiles	2
137. Advertising Campaigns	5	Jour. 130. Fundamentals of Advertis.	5
138. Sales Management	5	131. Display Advertising	5
140. The Co-operative Movement	5	Psych. 121. Applied Psychology	5
172. Executive Technique and Budgetary Control	5	Soc. 131. Social Statistics	5

3. Advertising

The courses in Advertising are planned: (1) to place advertising as an integral part of the marketing process; (2) to make clear the economic and psychological principles underlying advertisements and current advertising practices; (3) to provide, through courses and practice, a familiarity with advertising technique; (4) and thus to prepare for work with an advertising agency or with the advertising department of a manufacturer, wholesaler, or retailer.

Students majoring in Advertising are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144. This must include B.A. 106, Economics of Marketing and Advertising, taken preferably in the third quarter of the sophomore year or the first quarter of the junior year.

(2) Required to take 35 credit hours as follows:

	Credits		Credits
B.A. 109. Advertising Principles and Practice	5	B.A. 198. Research in Marketing and Advertising	5
136. Market Analysis	5	Journ. 51. News Writing	5
137. Advertising Campaigns	5	130. Fundamentals of Advertising.	5
		131. Display Advertising	5

(3) 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 Analysis of Business Problems	5	Eng. 103. Extemporaneous Speaking	3
103. Money and Banking	5	Jour. 90,91, or 92. Current Events	1
134. Marketing Problems	5	133. Advertising Typography	5
135. Marketing of Northwest Prod.	5	135. Publicity	2
138. Sales Management	5	Law 100. Agency	5
140. The Co-operative Movement	5	193. Trade Regulations	3
175. The Business Cycle	5	P.S.D. 5,6,7. Drawing	9
177. Business Forecasting	5	9,10,11. Art Structure	9
Eng. 51. Advanced Composition	2	Psych. 121. Applied Psychology	5

(K) PUBLIC UTILITIES

The courses in Public Utilities are planned to prepare students for positions in the business departments (sales, personnel, rate making, auditing, accounting) of the various public utility industries.

Students majoring in Public Utilities are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144. This should include Math. 11, Investments I, and Math. 13, Statistical Methods.

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

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

(3) 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	134. Marketing Problems	5
103. Money and Banking	5	136. Market Analysis	5
106. Economics of Marketing and Advertising	5	138. Sales Management	5
110,111,112. Advanced Accounting	15	154. Cost Accounting I	5
120. Business Organization	5	158. Managerial Accounting	5
121. Corporation Finance	5	167. Employment Management	5
122. Principles of Investment	5	176. Investment Analysis	5
124. Public Finance	5	Law 142-143. Public Utilities	6
130. Industrial Anal. and Control	5	170,171. Constitutional Law	6
		177. Municipal Corporations	3
		Pol. Sci. 101. Constitutional Gov't	2

(L) REAL ESTATE

The courses in Real Estate are planned to prepare students for positions as real estate appraisers, real estate brokers, real estate mortgage bankers and property managers.

Students majoring in Real Estate are:

(1) Required to satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144. This must include B.A. 103, Money and Banking, and B.A. 108, Risk and Risk Bearing, taken preferably in the third quarter of the sophomore year or the first quarter of the junior year.

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

	Credits		Credits
B.A. 120. Business Organization	5	164. Real Estate and Land Econ	5
122. Principles of Investment	5	169. Principles of Real Estate	5
124. Public Finance	5		
or			
129. Taxation	5		

(3) 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. 141. Fire Insurance	5
106. Economics of Marketing and Advertising	5	163. Industrial Management	5
109. Advertising Prin. and Prac	5	170. Casualty Insurance	5
121. Corporation Finance	5	175. The Business Cycle	5
122. Principles of Investment	5	177. Business Forecasting	5
124. Public Finance	5	Eng. 40. Essentials of Speaking	5
126. Commercial Credit	5	Law 116. Property II—Real	5
129. Taxation	5	176. Mortgages	3
		181. Landlord and Tenant	3

(M) 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 satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144.

(2) Required to take 33 credit hours as follows:

	Credits		*Credits*
B.A. 67. Paper Work in Shipping..	5	B.A. 150. Railroad Transportation...	5
104. Economics of Transportation.	5	151. Transportation Rates	5
107. Traffic Management	5	195. Research in Foreign Trade and Transportation.....	5
113. Ports and Terminals.....	3		

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

(3) 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. 108. Risk and Risk Bearing....	5	Math. 1. Advanced Algebra.....	5
119. Water Transportation	5	4. Trigonometry	5
121. Corporation Finance	5	Phil. 5. Introduction to Logic.....	5
131. Econ. of Public Utilities.....	5	Phys. 4-5. General Physics.....10	
133. Control of Public Utilities...	5	Psych. 1. General Psychology.....	5
143. Trade of the Far & Near East	5	C.E. 120. Transportation Engineering	2
144. Trade of Europe.....	5	121. Transportation Engineering ..	4
145. Trade of the Americas.....	5	123. Transportation Engineering...	3
Chem. 1-2. General Chemistry.....10		125. Railways	3
Eng. 40. Essentials of Speaking.....	5	127. Yards and Terminals.....	3

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 satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144. This must include B.A. 49, Ship Operation, and B.A. 53, Navigation, in lieu of ten hours of science, mathematics or foreign language.

(2) Required to take 31 credit hours as follows:

	Credits		*Credits*
B.A. 104. Econ. of Transportation...	5	B.A. 149. Marine Insurance.....	5
107. Traffic Management	5	151. Transportation Rates	5
113. Ports and Terminals.....	3	152. Shipping and Consular Reg...	3
119. Water Transportation	5		

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

(3) 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. 42. Wharf Management.....	5	Astron. 1. General Astronomy.....	5
67. Paper Work in Shipping.....	5	Nav. Sci. 51-52-53. Basic Naval Sci..	9
108. Risk and Risk Bearing.....	5	Phys. 4-5. General Physics.....10	
121. Corporation Finance	5	Chem. 1-2. General Chemistry.....10	
126. Commercial Credit	5	Psych. 1. General Psychology.....	5
127. Foreign Exchange and International Banking.....	5	Law 165. Admiralty.....	3
128. Human Waste in Industry...	3	Math. 1. Adv. Algebra.....	5
143. Trade of the Far & Near East	5	4. Trigonometry	5
144. Trade of Europe.....	5	Phil. 5. Introduction to Logic.....	5
145. Trade of the Americas.....	5	Eng. 40. Essentials of Speaking.....	5
195. Research in Foreign Trade and Transportation.....	5	M.E. 185. Naval Architecture.....	3

Students must obtain 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 Aernonautical 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 satisfy the general requirements of the University and the College of Business Administration outlined on pages 143-144.

(2) Required to take 32 credit hours as follows:

	Credits		Credits
B.A. 53. Navigation	5	B.A. 195. Research in Foreign Trade and Transportation	5
104. Econ. of Transportation	5	A.E. 161. Aerial Transportation	3
107. Traffic Management	5	162. Adv. Aerial Transportation	3
113. Ports and Terminals	3		
114. Aerial Navigation	3		

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

(3) 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. 67. Paper Work in Shipping	5	A.E. 121. Airships	3
108. Risk and Risk Bearing	5	C.E. 127. Yards and Terminals	3
121. Corporation Finance	5	Chem. 1-2. General Chemistry	10
133. Control of Public Utilities	5	Eng. 40. Essentials of Speaking	5
143. Trade of the Far & Near East	5	Phil. 5. Introduction to Logic	5
144. Trade of Europe	5	Phys. 4-5. General Physics	10
145. Trade of the Americas	5	Psych. 1. General Psychology	5
A.E. 101. Aerodynamics	3	Math. 1. Adv. Algebra	5
111. Airplane Design	3	4. Trigonometry	5

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 and 64. 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 Marine 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. The University requirements in military or naval science, physical education and hygiene are satisfied as follows:

Men Students. Freshmen and sophomores, five hours of military or naval science per week each year.

Women Students. Participation in healthful activities for the first four quarters, and the lecture course on the fundamentals of healthful and efficient living.

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 standard 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 JOURNALISM

The School and Its Equipment

The first courses in journalism in the University of Washington were given in 1907. A department of journalism was established in 1909. In March, 1918, the department was formally made a school.

The professional courses in the School of Journalism and those prescribed in the Colleges of Liberal Arts and Science are planned with two aims in view—to offer instruction and practice in the fundamentals of newspaper work in both the business and editorial sides, and to provide such studies as are best adapted to give the broad training necessary for successful pursuit of journalism as a profession. In the first the courses include reporting, copy reading, editorial writing, magazine 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, together with 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.

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 1930-31 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.

Pre-Journalism Majors. The dean of the School of Journalism is the adviser for all students in journalism from the beginning of the freshman year. To him should be taken questions about co-ordinating courses in other schools and any matters touching scholastic problems.

Journalism Curriculum. From the beginning of the freshman year a specific curriculum of studies (see page 8) is required of students expecting to major in journalism. Courses in news writing, the profession of journalism, 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 must be earned before entrance.

Major in Journalism in the School of Education. (See Education bulletin.) Majors in Journalism in the School of Education may substitute Journalism 125 (Principles of High School Journalism) for the Teachers' course in Education in their major subject.

Minor in Journalism. Students wishing to minor in journalism must include the following courses in their minor: Journalism 51 (News Writing), 101 (Reporting), 120 (Copy Reading), and 150 (Editorial Writing). A total of twenty hours 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. Fifty of these credits 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.

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 hours, the degree of master of arts 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 of arts in journalism are scheduled below. The courses are arranged in the order in which they normally follow each other. Those with a double dagger are required. Those marked with a single dagger are recommended electives. Others are suggested electives. The University requirements of military or naval science and physical education must be met in addition to those noted below.

First Year

	Credits		Credits
Econ. 1. ‡Gen. Econ.	5	Lib. Arts 1. †Intro. to Mod. Thought.	5
English 1. ‡Comp.	5	Latin 11. ‡Roman Civ.[1]	5
64, 65. ‡Lit. Backgrounds	6	‡Mil. or Naval Sci. or Phys. Ed.	5
Greek 11. ‡Greek Civ.[1]	5	Pol. Sci. 1. ‡Comparative Gov't.	5
Hist. 5-6. †Eng. Pol. & Soc. Hist.	10	‡Science[2]	10
Jour. 1, 2. ‡Journ. as a Profession	2	Soc. 1. ‡Intro. Sociology	5
3. ‡Elements of Publishing	3		

Second Year

	Credits		Credits
Arch. 112, 113. †Freehand Draw.	4	Jour. 61. ‡The Smaller Newspaper.	3
Econ. 2. †Gen. Econ.	5	90, 91, 92. ‡Current Events	1
61. Soc. & Econ. Standards	5	‡Mil. or Naval Sci. or Phys. Ed.	5
106. †Econ. of Mkt. and Adv.	5	Music 4,5,6, Hist. & Appr. of Music.	9
Eng. 67,68,69. ‡Am. Writers	6	Phil. 5. ‡Intro. to Logic[3]	5
For. Lang.	10	Psychology 1. ‡Gen. Psych.	5
Hist. 57-58-59. ‡Hist. of U.S.	9	Sociology 56. The Family	3
71-72-73. Ancient Hist.	9	57. Child Welfare	3
Jour. 51. ‡News Writing	5	62. Play and Leisure Time	3
		63. †Community Organization	3

[1] Students who have taken, or who plan to take, three or more years of ancient language, may omit this requirement. Greek 13 or Latin 13 may be substituted respectively for Greek 11 or Latin 11. The requirement may also be satisfied by 10 hours of Oriental Studies 50, 51 or 52.

[2] If a student has not had in high school the sciences prescribed for junior standing in Liberal Arts (that is, 10 hours of a physical science and 10 hours of a biological science) he is required to take ten hours of chemistry or physics and ten hours of botany or geology or zoology or geography in the University.

[3] Philosophy 1 or Philosophy 3 may be substituted for this requirement.

THIRD YEAR

	Credits
Arch. 101-102-103. Hist. of Arch.	6
Astronomy 1. Gen. Astronomy	5
Dram. Art 51, 52, 53. Ele. Play Act.	9
111, 112, 113. Play Writing	15
Econ. 109. †Adv. Prin. and Prac.	5
136. Market Analysis	5
English 40. †Essentials of Speaking	5
60. ‡Shakespeare	5
97,98,99. The Bible as Lit.	6
104, 105, 106. ‡Contemp. Lit.	9
137. Prose of the Victorian Per.	3
Foreign Language	10
History 130. Europe, 1814-1870	5
131. †Europe Since 1870	5
147. Civil War Period	3
148. Reconstruction Period	3
149. National Development	3
Journalism 101. ‡Reporting	5
104. ‡Newspaper Administration	2
120. ‡Copy Reading	3
125. ‡Prin. of H.S. Journ.	5
Jour. 130. †Fundamentals of Adv.	5
131. †Display Advertising	5
133. Adv. Typography	5
136. †Comparative Journalism	3
138. ‡Hist. of Journalism	5
140. ‡Business Office	5
Phil. 101-102-103. Hist. of Phil.	9
Pol. Sci. 111. Hist. of Pol. Theory	3
112. Amer. Political Theory	3
113. Contemp. Political Thought	3
121. For. Relations of the U.S.	3
122. †American Foreign Affairs	3
123. †International Relations	3
Psychology 109. Mental Tests	3
111. Hist. of Recent Psych.	2
126. Abnormal Psych.	3
Romanic Lang. and Lit. 118, 119, 120. Survey of French Lit.	9
Science	10
Sociology 130. Methods of Soc. Invest.	5
131. Social Statistics	5

FOURTH YEAR

	Credits
Econ. 54. ‡Business Law	3
55, 56. †Business Law	6
Econ. 137. †Advertising Campaigns	5
161. Labor Econ.	5
168. †Devel. of Econ. Thought	5
198. †Marketing and Adv.	5
Education 60. Secondary Educ.	4
180. Hist. of Educ.	5
183. American Educ.	5
Journ. 135. †Publicity	2
142. ‡Specialized Reporting	3
145. ‡Law of the Press	3
150. ‡Editorial Writing	3
160. Trade Journalism	5
171-172. Mag. Feature Writing	4
173, 174-175. Short Story Writing	15
228. Prob. in Jour.	2-4
Pol. Sci. 152. ‡Amer. Pol. Parties	5
161. Municipal Government	5
162. Municipal Administration	5
English 161, 162, 163. Hist of American Culture	9
164, 165, 166. †Am. Lit. Since 1870	9
Foreign Language	10
History 153. †Pacific Rim	3
163-164-165. Northwest Hist.	6
Pol. Sci. 163. State Government	5
Science	15
Sociology 155. Soc. Legislation	3
156. Criminology	3
201. †Public Opinion[4]	2

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 109 (Advertising Principles and Practice); Economics 136 (Market Analysis); Economics 137 (Advertising Campaigns); 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.

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), Dramatic Art 51, 52, 53 (Elem. Play Acting), Dramatic Art 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.

COURSES OF STUDY

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

[4] May be taken by fourth year students by special permission of the instructor.

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 seven departments: aeronautical, chemical, civil, electrical, mechanical and general engineering and engineering shops. The College of Engineering offers six four-year curricula (see page 167) leading to the degree of bachelor of science in the respective branches of chemical, civil, 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 students. 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 hydroelectric 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 will be 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 railroad 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 and 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.

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 work including design, operation and superintendence of machinery; fuel economy; power plants; structural materials; heating and ventilation; gas engineering; refrigeration; and automotive engineering.

ENGINEERING LABORATORIES

For description of laboratories, see pages 40-41.

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 51-68.

PREPARATION IN ALGEBRA FOR ENGINEERING

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.

Curricula and Degrees

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

branches of engineering, as B.S. in civil engineering. A more general training leading to the degree of B. S. in commercial engineering is scheduled, including courses in industrial management and economics while majoring in one of the above curricula.

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 enigneering (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 credit hours), 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 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.

CURRICULA OF THE COLLEGE OF ENGINEERING

FOR THE FRESHMAN YEAR IN ALL DEPARTMENTS

FRESHMAN

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Trig.—Math. 51	4	Alg.—Math. 52	4	Anal. Geom.—Math. 53	4
Drawing—G.E. 1	3	Drawing—G.E. 2	3	Drafting Prob.—G.E. 3.	3
Engr. Prob.—G.E. 11..	3	Engr. Prob.—G.E. 12..	3	Gen. Chem. 23.....	5
Gen. Chem. 1 or 21....	5	Gen. Chem. 2 or 22....	5	Surveying—G.E. 21 ...	3
Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔

IN AERONAUTICAL ENGINEERING

Leading to the degree of Bachelor of Science in Aeronautical Engineering.

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Physics 97	5	Physics 98	5	Physics 99	5
Calc.—Math. 61	3	Calc.—Math. 62	3	Calc.—Math. 63	3
Mechanism—M.E. 81 ..	3	Mechanics—C.E. 131 ..	3	Mechanics—C.E. 132 ..	3
Steam Engr.—M.E. 82.	3	Gen. Econ.—B.A. 3...	3	English 100	3
Shop 53	1	Shop 54	1	Shop 55	1
Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔

JUNIOR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Aerodynamics—A.E. 101	3	Aerodynamics—A.E. 102	3	Airpl. Des.—A.E. 111..	3
Hydr.—C.E. 142	5	Dir. Cur.—E.E. 101-2..	6	Alt. Cur.—E.E. 121-2..	6
Str. Anal.—C.E. 171...	3	Str. Anal.—C.E. 172...	3	Str. Anal.—C.E. 173...	3
Mach. Des.—M.E. 111..	3	Mach. Des.—M.E. 112..	3	Engr. Matls.—M.E. 167	3
English 102	3	Non-Fer. Met.—Shp 104	1		

SENIOR

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

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Physics 97	5	Physics 98	5	Physics 99	5
Calc.—Math. 61	3	Calc.—Math. 62	3	Chem. 52	3
Chem. 109	5	Chem. 110	5	Chem. 101	5
Mechanism—M.E. 81...	3	Steam Engr.—M.E. 82.	3	Steam Lab.—M.E. 83...	3
Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔

JUNIOR

Chem. 121	5	Chem. 122	5	Chem. 123	5
C.E. 132	3	Chem. 128	5	Chem. 129	5
E.E. 101	4	Eng. 100	3	E.E. 121	4
E.E. 102	2	M.E. 111	3	E.E. 122	2
Shop 55	1				

SENIOR

Chem. 181	5	Chem. 182	5	Chem. Engr. 173.....	3
Chem. Engr. 171.....	5	Chem. Engr. 172.....	5	Electives 12	
Chem. Engr. 176.....	2	Chem. Engr. 177.....	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

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Physics 97	5	Physics 98	5	Physics 99	5
Calc.—Math. 61	3	Calc.—Math. 62	3	Gen. Econ.—B.A. 3....	3
Steam Engr.—M.E. 82.	3	Mechanics—C.E. 131...	3	Mechanics—C.E. 132 ...	3
Curves & Ethwk—C.E. 57	4	Transp. Engr.—C.E. 58	4	Adv. Surv.—C.E. 59...	4
Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔

JUNIOR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Hydraulics—C.E. 142..	5	Hyd. Engr.—C.E. 143..	5	Str. Anal.—Tmbr.— C.E. 173	3
Str. Anal.—R.C.— C.E. 171	3	Str. Anal.—Steel— C.E. 172	3	Recl.—C.E. 157	3
Matls. of Const.— C.E. 162	3	Matls.—Tmbr. & Steel— C.E. 163	3	Dir. Cur.—E.E. 101-2..	6
Bus. Law—B.A. 54....	3	Roads & Pavements— C.E. 121	3	Sanit. Engr.—C.E. 150.	3
Adv. Drft.—C.E. 100..	2	English 100	3		

SENIOR

Hydraulic and Sanitary Engineering Option

Sewerage—C.E. 158 ... 3	Wat. Sup.—C.E. 155... 3	Sanit. Des.—C.E. 154.. 3
Hyd. Mach.—C.E. 145.. 3	Ind. Chem. 119..... 3	Hyd. Power—C.E. 147. 3
Str. Des.—R.C.— C.E. 175 4	Str. Des.—Steel— C.E. 176 4	Engr. Rel.—C.E. 199... 3
Geology 105 5	English elective 3	Str. Des.—Tmbr.— C.E. 177 3
	Elective 3	Elective 3

Structural Engineering Option

Sewerage—C.E. 158 ... 3	Wat. Sup.—C.E. 155 .. 3	Str. Des.—Tmbr.— C.E. 177 3
Str. Des.—R.C.— C.E. 175 4	Str. Des.—Steel— C.E. 176 4	Adv. Str. Des.— C.E. 185 4
Adv. Str. Anal.— C.E. 181 3	Adv. Str. Anal.— C.E. 182 3	Engr. Rel.—C.E. 199... 3
Geology 105 5	Ind. Chem. 119 3	English Elective 3
	Elective 3	Elective 3

Highway and Railway Engineering Option

Sewerage—C.E. 158 ... 3	Wat. Sup.—C.E. 155... 3	Str. Des.—Tmbr.— C.E. 177 3
Str. Des.—R.C.— C.E. 175 4	Str. Des.—Steel— C.E. 176 4	Engr. Rel.—C.E. 199... 3
Geology 105 5	Ind. Chem. 119..... 3	English elective 3
Highway Des.—C.E. 124 3	Hy. & Ry. Econ.— C.E. 123 3	Transp. Admin.— C.E. 128 3
	Elective 3	Elective 3

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

IN ELECTRICAL ENGINEERING

Leading to the degree of Bachelor of Science in Electrical Engineering.

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Physics 97	5	Physics 98	5	Physics 99	5
Calc.—Math. 61	3	Calc.—Math. 62	3	Calc.—Math. 63	3
Mechanism—M.E. 81 ..	3	El. Stm. Lab.—M.E. 83	3	Mechanics—C.E. 131 ..	3
El. Stm. Lab.—M.E. 82	3	Gen. Econ.—B.A. 3....	3	English 100	3
Shop 53	1	Shop 54	1	Shop 55	1
Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔

JUNIOR

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

SENIOR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Alt. Cur.—E.E. 163....	6	El. Trans.—E.E.195,196	4	El. Trans.—E.E. 198...	2
Alt.Cur. Lab.—E.E. 164	4	Physics 154	3	Thesis or electives.....	4
Electives	6	Thesis or electives.....	4	Electives 10	
		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:

	Credits	
Electrical Communication—E.E. 131.....	2	
Telephone Transmission—E.E. 132.....	4	
Illumination—E.E. 141	4	
Design of Electrical Apparatus—E.E. 154.....	4	
Electric Railways—E.E. 171.....	4	
Central Stations—E.E. 173.....	4	
Power Transmission—E.E. 175.....	5	
Research—E.E. 180, 182, 184.....2 to	5	(each)
Radio—E.E. 181, 183	5	(each)
Thesis—E.E. 186, 188.....2 to	5	(each)
Engineering Equations—E.E. 191.....	3	
Seminars—E.E. 190, 192.....	4	(each)
Seminar—E.E. 194	5	

IN MECHANICAL ENGINEERING

Leading to the degree of Bachelor of Science in Mechanical Engineering.

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Calc.—Math. 61	3	Calc.—Math. 62	3	Calc.—Math. 63	3
Physics 97	5	Physics 98	5	Physics 99	5
Mechanism—M.E. 81...	3	Steam. Lab.—M.E. 83..	3	English 100	3
Steam Engr.—M.E.82..	3	Gen. Econ.—B.A. 3....	3	Mechanics—C.E. 131...	3
Shop 53	1	Shop 54	1	Shop 55	1
Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔

JUNIOR

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

SENIOR

Bus. Law.—B.A. 54....	3	Gas. Eng.—M.E. 198...	3	Power Plants—M.E.184.	3
Thermo.& Ref.—M.E.183	5	Heat.& Vent.—M.E.182.	3	Steam Turb.—M.E. 179	5
Mach. Des.—M.E. 113.	2	Mach. Des.—M.E. 114.	2	Mach. Des.—M.E. 115 or 199	3
Electives	5	Engr. Matls.—M.E. 167	3	Thesis—M.E. 195.....	3
		Electives	5	Electives	4

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

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Calc.—Math. 61	3	Calc.—Math. 62	3	Calc.—Math. 63	3
Physics 97	5	Physics 98	5	Physics 99	5
Mechanism—M.E. 81	3	Steam Lab.—M.E. 83	3	English 100	3
Steam Engr.—M.E. 82	3	Gen. Econ.—B.A. 3	3	Mechanics—C.E. 131	3
Military or Naval Sci. or Physical Ed.	1⅔	Shop 115	3	Military or Naval Sci. or Physical Ed.	1⅔
		Military or Naval Sci. or Physical Ed.	1⅔		

JUNIOR

Dir. Cur.—E.E. 101	4	Alt. Cur.—E.E. 121	4	Hydraulics—C.E. 142	5
Dir. Cur. Lab.—E.E.102	2	Alt. Cur. Lab.—E.E.122	2	English 102	3
Mechanics—C.E. 132	3	Mach. Des.—M.E. 111	3	Mach. Des.—M.E. 112	3
Labor in Ind.—B.A. 60	5	Accounting—B.A. 62	5	Accounting—B.A. 63	5
Electives	2	Electives	3		

SENIOR

Bus. Law.—B.A. 54	3	Bus. Law—B.A. 55	3	Mktg. & Adv.—B.A.106	5
Electives	13	Electives	13	Electives	11

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

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 47.

COLLEGE OF FINE ARTS

General Information

This college comprises the departments of architecture, music, 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 major in applied music, composition, or public school music, and to the degree of bachelor of arts in 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 music and in public school art (P.S.D.) may receive a normal diploma, entitling them to teach music in the public schools, by meeting the requirements of the department of education and such departmental requirements as these respective departments may institute.

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 hour load.

SCHOLARSHIPS

Scholarships in Piano Study. Mr. 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 1930-31, 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.

PRIZES AND COMPETITIONS

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 51-68.

SPECIAL REQUIREMENTS FOR ARCHITECTURE AND MUSIC

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, trigonometery, physics, and at least two years of foreign language. Forty hours of foreign language are required for graduation, fifteen hours of which are provided in the curriculum.

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.

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

Students intending to enter any of the music courses leading to a degree must satisfy the head of the department that they have completed in addition to the usual high school preparation the equivalent of four years' work in piano, showing that they are familiar with the rudiments and can play scales and chords well in all positions, the small sonatas of Haydn, Mozart and Beethoven, and easier compositions representative of the best literature for the piano.

If work on another instrument is substituted for this entrance requirement, a knowledge of the piano sufficient to enable a student to play ordinarily difficult music at sight will be required before graduation. No student may receive University credit in applied music without having satisfied this above requirement.

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.

Major students in music may earn not more than one-third of the required number of applied music credits in class work.

Forty hours of foreign language either in the high school or in the University 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 in the University. Language courses given in English translation will not be counted toward this requirement. If he presents no foreign language for admission to the University, he must supply the deficiency in addition to the hours demanded by the respective curricula, without credit.

The department of music offers examinations in sight singing, ear training, and elementary harmony for students who wish to attempt them, with a view of being excused from these required courses. These examinations will be held by appointment and applications must be filed with the regis-

trar in advance. Students who successfully pass the examinations will be expected to register for advanced courses in the same subjects.

Freshmen who intend to enroll in the College of Fine Arts with a major in Music will be given an examination during "Freshman Week," to test (1) native musical capacity, (2) ability to fulfill entrance requirement in applied music, (3) vocal possibilities.

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 bulletin.

CURRICULA

The following curricula present the requirements for the several degrees arranged in suitable sequence. As many of the five-hour 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.

FOR THE BACHELOR OF MUSIC DEGREE WITH A MAJOR IN APPLIED MUSIC

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Music 15 S.R.& Ear Tr.	3	Music 16 S.R.& Ear Tr.	3	Music 6 Hist. & Appr..	3
18 Applied	3	19 Applied	3	20 Applied	3
4 Hist. & Apprec...	3	5 Hist. & Appr.....	3	English 3	3
English 1	3	English 2	3	For. Lang.	5
Elective	2	Elective	2	Military or Naval Sci.	
Military or Naval Sci.		Military or Naval Sci.		or Physical Educ....	1⅔
or Physical Educ....	1⅔	or Physical Educ....	1⅔		

Second Year

Music 10 Cho. or 31		*Music 11 Cho. or 32		*Music 12 Cho. or 33	
Orchestra	1	Orchestra	1	Orchestra	1
68 Applied	3	51 Harmony	5	53 Harmony	5
Foreign Lang.	5	69 Applied	3	70 Applied	3
Ec., Pol. Sci. or Soc...	5	Foreign Lang.	5	Foreign Lang.	5
Military or Naval Sci.		Military or Naval Sci.		Military or Naval Sci.	
or Physical Educ....	1⅔	or Physical Educ....	1⅔	or Physical Educ....	1⅔

Third Year

Music 10 Cho. or Elect.	1	*Music 11 Cho. or El..	1	*Music 12 Cho. or El..	1
101 Harmony	5	109 Counterp.	5	117 Composition	5
104 Adv. Hist.	2	105 Adv. Hist.....	2	106 Adv. Hist.....	2
118 Applied	3	119 Applied	3	120 Applied	3
112 Forms	5	Physics 50	5	Physics 51	5

Fourth Year

Music 151 Adv. Apprec.	2	Music 152 Adv. Apprec.	2	Music 153 Adv. Apprec.	2
168 Applied	3	169 Applied	3	170 Applied	3
Phil. 129 Aesth.....	5	157 Composition	5	199 Recital	2
Elective	5	Elective	5	Elective	8

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

FOR THE BACHELOR OF MUSIC DEGREE WITH A MAJOR IN PUBLIC SCHOOL MUSIC†

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Music 18 Applied	1½	Music 19 Applied	1½	Music 20 Applied	1½
15 S.R. & Ear Tr.	3	16 S.R. & Ear Tr.	3	6 Hist. & Apprec.	3
4 Hist. & Apprec.	3	5 Hist. & Apprec.	3	English 3	3
English 1	3	Foreign Lang.	5	Foreign Lang.	5
Foreign Lang.	5	English 2	3	Elective	3
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔

Second Year

Music 10 Chorus	1	*Music 11 Chorus	1	*Music 12 Chorus	1
68 Applied	1½	69 Applied	1½	56 School Music	5
51 Harmony	5	53 Harmony	5	70 Applied	1½
Foreign Lang.	5	Physics 50	5	Physics 51	5
Elective	3	Elective	3	Elective	3
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔

Third Year

Music 113 Mus. Ed.	2	Music 114 Mus. Ed.	2	Music 112 Forms	5
127 Cho. Forms	2	128 Cho. Forms	2	Educ. 75R	2
101 Harmony	5	41 Orch. Inst.	3	70	5
40 Orch. Inst.	3	Educ. 60	4	Educ. Elective	3
Elective	3	Ec., Pol. Sci. or Soc.	5		

Fourth Year

Music 118 Applied	3	Music 109 Counterp.	5	Music 120 Applied	3
151 Adv. Apprec.	2	119 Applied	3	153 Adv. Apprec.	2
154 Mus. Sup.	2	152 Adv. Apprec.	2	156 Mus. Sup.	2
180 Conduct.	2	155 Mus. Sup.	2	117 Comp. & Arrg.	5
Phil. 129	5	Educ. 71	2½	Educ. 71	5
Elective	2	Elective	2		

FOR THE BACHELOR OF MUSIC DEGREE WITH A MAJOR IN COMPOSITION

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Mus. 15 S.R. & Ear.Tr.	3	Mus. 16 S.R. & Ear Tr.	3	Music 6 Hist. & Appr.	3
4 Hist. and Apprec.	3	5 Hist. & Apprec.	3	20 Applied	3
18 Applied	3	19 Applied	3	Foreign Lang.	5
English 1	3	English 2	3	English 3	3
Elective	3	Elective	3	Military or Naval Sci. or Physical Educ.	1⅔
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔		

Second Year

Music 10 Cho. or El.	1	*Music 11 Cho. or El.	1	*Music 12 Cho. or El.	1
51 Harmony	5	53 Harmony	5	Foreign Lang.	5
Foreign Lang.	5	Foreign Lang.	5	Physics 51	5
Econ., Pol. Sci. or Soc.	5	Physics 50	5	Elective	5
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔

Third Year

Music 10 Cho. or El.	1	*Music 11 Cho. or El.	1	*Music 12 Cho. or El.	1
68 Applied	3	69 Applied	3	70 Applied	3
104 Adv. Hist.	2	105 Adv. Hist.	2	106 Adv. Hist.	2
101 Harmony	5	109 Counterpoint	5	117 Comp. & Arrg.	5
112 Forms	5	Elective	4	Elective	4

Fourth Year

Music 151 Adv. Apprec.	2	Music 152 Adv. Apprec.	2	Music 153 Adv. Apprec.	2
163 Adv. Counterp.	5	157 Composition	5	197 Adv. Comp.	5
Phil. 129 Aesth.	5	173 Orchestration	5	Elective	7
Elective	3	Elective	3		

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

†The completion of this course will entitle the graduate to receive the University normal diploma.

FOR THE DEGREE OF BACHELOR OF ARTS IN MUSIC

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
**Music elective	5	**Music elective	5	Lib. Arts 11 or Elec.	5
English 1	3	English 2	3	English 3	3
§Science	5	§Science	5	Foreign Lang.	5
Elective	2	Elective	2	Elective	2
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔

Second Year

**Music elective	5	**Music elective	5	**Music elective	5
Econ. or Pol.Sci. or Soc.	5	Physics 50	5	Physics 51	5
Foreign Lang.	5	Foreign Lang.	5	Foreign Lang.	5
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔

Third Year

**Music elective	5	**Music elective	5	**Music elective	5
‡Lib. Arts elective	10	‡Lib. Arts elective	10	‡Lib. Arts elective	10

Fourth Year

**Music elective	5	**Music elective	5	**Music elective	5
Philosophy 129	5	‡Lib. Arts elective	10	‡Lib. Arts elective	10
Free elective	5				

CURRICULUM IN ARCHITECTURE LEADING TO THE DEGREE OF BACHELOR OF ARCHITECTURE

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
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. Con.	3	48 El. Bldg. Con.	3	French 1	5
PSD 32 Draw. & Sculp.	3	PSD 33 Draw. & Sculp.	3	English 3	3
English 1	3	English 2	3	Military or Naval Sci. or Physical Educ.	1⅔
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔		

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 Trigonometry.	3	Math. 55 Algebra	3	Math. 56 Anal. Geom.	3
French 2	5	French 3	5	E.E. 105 Elec. Wiring.	2
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔	PSD 34 Draw. & Sculp.	3
				Military or Naval Sci. or Physical Educ.	1⅔

**(1) Among the music courses indicated above the following are required: 4, 5, 6, 15, 16, 51, 53, 101, 117.

§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 hours 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.

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Arch.101 Hist. of Arch.	2	Arch.102 Hist. of Arch.	2	Arch.103 Hist. of Arch.	2
104 Design Gr. II...	5	105 Design Gr. II...	5	106 Design Gr. II...	5
120 Work. Drawings.	2	121 Work. Drawings.	2	122 Work. Drawings.	2
40 Water Color ...	2	117 Bldg. Con.	3	118 Bldg. Con.	3
C.E. 130 Theory Const.	3	41 Water Color ...	2	42 Water Color	2
		125 Pencil Sketch...	1	126 Pencil Sketch...	1

FOURTH YEAR

Arch.107 Design Gr. II 5	Arch. 154 Des. Gr. III. 5	Arch. 155 Des. Gr. III 5
112 Freehand Draw.. 3	113 Freehand Draw.. 3	151 Hist. of Arch... 2
140 Hist., Arch. Orn. 2	C.E. 106 Plumb. & San. 2	M.E. 107 Heat. & Vent. 2
Physics 1 General..... 4	Physics 2 General 5	Physics 113 Ac. & Ill.. 4
B.A. 54 Bus. Law.... 3	Arch. 115 Modelling... 2	PSD 160 Life 3

FIFTH YEAR

Arch. 156 Des. Gr. III 5	Arch. 157 Des. Gr. III 5	Arch. 158 Thesis..... 8
152 Theory of Arch.. 2	153 Arch. Materials.. 2	159 Spec. & Off. Pr.. 2
PSD 161 Life 5	170 Sen. Mechan. ... 2	Electives 5
Electives 5	PSD 162 Life 3	
	Electives 5	

Preferred Electives—Philosophy, Economics, World Literature, Aesthetics, Psychology, French, or General History.

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

Before the second year each student should consult with the faculty of the department regarding the choice of a profession.

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
P.S.D. 5 Drawing.....	3	P.S.D. 6 Drawing.....	3	P.S.D. 7 Drawing	3
9 Art Structure	3	10 Art Structure.....	3	11 Art Structure ...	3
English Composition ..	3	English Composition ..	3	English Composition ..	3
Foreign Language	5	Foreign Language	5	Foreign Language	5
Military or Naval Sci. or Physical Educ....	1⅔	Military or Naval Sci. or Physical Educ....	1⅔	Military or Naval Sci. or Physical Educ....	1⅔

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
Foreign Language 5	Electives 9	Lib. Arts 11 or Elec... 5
Electives 4	Military or Naval Sci. or Physical Educ.... 1⅔	P.S.D. 20 2
Military or Naval Sci. or Physical Educ.... 1⅔		Electives 2
		Military or Naval Sci. or Physical Educ.... 1⅔

THIRD YEAR

P.S.D. 126 Hist. of Ptg. 1	P.S.D. 127 Hist. of Ptg. 1	P.S.D. 128 Hist. of Ptg. 1
103 Pottery or	104 Pottery or	Arch. 3 Arch. Apprec.. 2
157 Metalwork 3	158 Metalwork 3	Laboratory Science 5
Pol. Sci., Econ., or Soc. 5	Laboratory Science ... 5	Electives 7
Electives 6	Electives 6	

FOURTH YEAR

P.S.D. 116 Illus. or	P.S.D. 151 Art Struc. or	P.S.D. 152 Art Struc. or
166 Art Structure... 3	167 Art Struc..... 3	162 Life 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.

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

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
P.S.D. 5 Drawing	3	P.S.D. 6 Drawing	3	P.S.D. 7 Drawing	3
9 Art Structure	3	10 Art Structure	3	11 Art Structure	3
English Composition	3	English Composition	3	English Composition	3
Foreign Language	5	Foreign Language	5	Foreign Language	5
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔

Second Year

P.S.D. 53 Art Structure	3	P.S.D. 54 Art Structure	3	P.S.D. 55 Art Structure	3
56 Drawing and Ptg.	3	57 Drawing and Ptg.	3	58 Drawing and Ptg.	3
Foreign Language	5	Pol. Sci., Econ., or Soc.	5	Lib. Arts 11 or Elect.	5
Electives	3	Electives	3	Electives	4
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔

Third Year

P.S.D. 160 Life	3	P.S.D. 127 Hist. of Ptg.	1	P.S.D. 128 Hist. of Ptg.	1
126 Hist. of Ptg.	1	104 Pottery or 158 Jewelry	3	20 Sculp. Apprec.	2
103 Pottery or 157 Metalwork	3	Laboratory Science	5	Educ. electives	3
Educ. 60	4	Educ. 70	5	Laboratory Science	5
Educ. electives	2	Electives	2	Electives	5
Electives	4				

Fourth Year

P.S.D. 116 Illustration.	3	P.S.D. 105 Art Struc.	3	P.S.D. 106 Art Struc.	3
101 Pub. Sch. Art.	2	151 Art Structure	3	Educ. 71	5
Philosophy 129	5	102 Pub. Sch. Art.	2	Electives	8
Educ. 75A	2	Electives	5		
Electives	4	Educ. 71	2½		

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

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
P.S.D. 5 Drawing	3	P.S.D. 6 Drawing	3	P.S.D. 7 Drawing	3
9 Art Structure	3	10 Art Structure	3	11 Art Structure	3
English Composition	3	English Composition	3	English Composition	3
Foreign Language	5	Foreign Language	5	Foreign Language	5
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔

Second Year

Arch. 1 Appreciation	2	Arch. 2 Arch. Apprec.	2	Arch. 3 Arch. Apprec.	2
4 Elem. of Design	4	5 Elem. of Arch.	4	6 Elem. of Arch.	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. 82 Furn. Design	3
Foreign Language	3	Foreign Language	2	Electives	6
Electives	3	Electives	4	Military or Naval Sci. or Physical Educ.	1⅔
Military or Naval Sci. or Physical Educ.	1⅔	Military or Naval Sci. or Physical Educ.	1⅔		

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
P.S.D. 110 Int. Design.	5	P.S.D. 111 Int. Design.	5	P.S.D. 112 Int. Design.	5
Pol. Sci., Soc., or Ec...	5	Laboratory Science ...	5	Laboratory Science ...	5
Lib. Arts 11 or elect...	5	Electives	5	H.E. 25 Textiles.....	5

FOURTH YEAR

P.S.D. 172 Int. Design.	5	P.S.D. 173 Int. Design.	5	P.S.D. 20 Sculp. Appr..	2
126 Hist. of Ptg.....	1	127 Hist. of Ptg.....	1	174 Int. Design.....	5
H.E. 143 House Furn..	3	Arch. 102 Hist.....	2	128 Hist. of Ptg.....	1
Arch. 101 Hist.....	2	Electives	8	Arch. 103 Hist.....	2
Electives	5			Electives	6

MAJOR IN PAINTING OR SCULPTURE

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
P.S.D. 5 Drawing.....	3	P.S.D. 6 Drawing.....	3	P.S.D. 7 Drawing.....	3
9 Art Structure.....	3	10 Art Structure.....	3	11 Art Structure....	3
English Composition ...	3	English Composition ...	3	English Composition ...	3
Foreign Language	5	Foreign Language	5	Foreign Language	5
Military or Naval Sci. or Physical Educ....	1⅔	Military or Naval Sci. or Physical Educ....	1⅔	Military or Naval Sci. or Physical Educ....	1⅔

SECOND YEAR

P.S.D. 56 Painting.....	3	P.S.D. 57 Painting.....	3	P.S.D. 58 Painting.....	3
65 Drawing and Ptg. or *72 Sculpture....	3	66 Drawing and Ptg. or *73 Sculpture....	3	67 Drawing and Ptg. or *74 Sculpture....	3
Foreign Language	5	Electives 10		Lib. Arts 11 or elective	5
Electives	5	Military or Naval Sci.		Electives	5
Military or Naval Sci. or Physical Educ....	1⅔	or Physical Educ....	1⅔	Military or Naval Sci. or Physical Educ....	1⅔

THIRD YEAR

Group I—Painting

P.S.D. 116 Illustration	3	P.S.D. 105 Art Struc..	3	Arch. 3 Arch. Apprec..	2
107 Portrait	3	108 Portrait	3	P.S.D. 106 Art Struc..	3
126 Hist. of Ptg.....	1	127 Hist. of Ptg.....	1	109 Portrait	3
Pol. Sci., Ec., or Soc..	5	Laboratory Science	5	128 Hist. of Ptg.....	1
Electives	3	Electives	3	Laboratory Science	5
				Electives	1

Group II—Sculpture

P.S.D. 122 Sculpture..	3	P.S.D. 123 Sculpture..	3	Arch. 3 Arch. Apprec..	2
103 Pottery	3	104 Pottery	3	P.S.D. 124 Sculpture..	3
126 Hist. of Ptg....	1	127 Hist. of Ptg....	1	20 Sculp. Apprec....	2
Pol. Sci., Econ., or Soc.	5	Laboratory Science ...	5	128 Hist. of Ptg....	1
Electives	3	Electives	3	Laboratory Science ...	5
				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 Sculpt. Comp...	3	137 Sculpt. Comp....	3	138 Sculpt. Comp....	3
160 Life	3	161 Life	3	162 Life	3
Electives	7	Arch. 115 Modeling....	2	Pol. Sci. 101.....	2
		Electives	5	Electives	5

Preferred electives—Architectural design and history of ornament.
*P.S.D. 72, 73, 74 required if major is to be sculpture.

COURSES OF STUDY

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

COLLEGE OF FORESTRY

General Information

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

Buildings

The main building of the College of Forestry, Alfred H. Anderson Hall, was completed in the spring of 1925 at a cost of $250,000. 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 1929-1930 are: President, William G. Morris; vice president, R. B. Harris; secretary-treasurer, James Lewis; editor, Joe Kennedy.

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 42-44.

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 51-68.

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.....½ unit Physics.....1 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 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 bulletin.

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.

ORGANIZATION OF THE CURRICULUM

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

A 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 Forestry 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

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
For. 2 Intro. to For....	3	For. 1b Dendrology....	3	For. 1c Dendrology....	3
1a Dendrology	3	3 Intro. to For.....	3	4 Fire Prot.....	3
Math. 51 Trig.....	4	Math. 52 Coll. Alg.....	4	Math. 56	3
Physics 1 Gen.....	5	Physics 2 Gen.....	5	Physics 3 Gen.....	5
Military or Naval Sci or Physical Ed....	1⅔	Military or Naval Sci. or Physical Ed.....	1⅔	G.E. 7 Drawing..... Military or Naval Sci. or Physical Ed.....	3 1⅔

Second Year

For. 60 Mensuration...	2	For. 61 Mensuration...	2	For. 62 Mensuration...	7
10 Technology	3	11 Technology	3	40 Silviculture	3
B.A. 1 Economics.....	5	15 Genl. Lumb.....	5	C.E. 56 Surveying.....	5
English 4 Comp.....	3	Eng. 5 Comp.....	3	Military or Naval Sci.	
Elective	3	C.E. 55 Surveying.....	2	or Physical Ed....	1⅔
Military or Naval Sci.		Military or Naval Sci.			
or Physical Ed....	1⅔	or Physical Ed.....	1⅔		

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

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
For. 121 Silvicul.....	3	For. 122 Silvicul.....	3	For. 151 For. Fin.....	3
158 Utilization	5	115 Protection	3	123 Nursery Prac....	2
Bot. 1 Botany.....	5	126 For. Economics..	3		
		Bot. 11 For. Botany...	5		
		Suggested Electives			
For. 61 Adv. Mens....	5	B.A. 65 Acct. Surv....	5	For. 104 Timber Tests.	5
B.A. 57 Bus. Rel.....	5	Geog. 11 Weather and		Bot. 111 Pathology....	5
Geol. 1 Geology.....	5	Climate	5	Geol. 113 Physiog. of	
Zool. 1 Elem. Zool.....	5	Zool. 2 Elem. Zool.....	5	Western U.S.	5
Chem. 1 Chem.....	5	Chem. 2 Chem.....	5		

Fourth Year

For. 196 Field Forest Management 16		For. 152 Organization..	3	For. 119 For. Admin...	3
		194 Seminar	3	171 For. Geography..	3
		197 Managem't Plans.	4		
		Suggested Electives			
		For. 140 Construction..	3	For. 160-162 Investi....2-5	
		124 Regional Silv....	3	192 For. Engr.....	8

FOREST ENGINEERING CURRICULUM

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

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
For. 121 Silviculture	3	For. 115 Protection	3	For. 151 For. Finance	3
158 Utilization	5	122 Silviculture	3	104 Timber Physics	5
C.E. 57 Earthwk & Cur.	4	M.E. 82 Steam Engr.	3	M.E. 83 Steam Engines	3
				B.A. 57 Bus. Relations.	5
		Suggested Electives			
For. 105 Preservation	3	For. 124 Regional Silv.	3	B.A. 65 Accounting Survey	5
G.E. 1 Drawing	3	G.E. 2 Drawing	3		
		C.E. 58 Sur. Off. Prac.	2		
		B.A. 115 Bus. Corres.	5		

FOURTH YEAR

For. 187 Field trip in Log. Engineering	.16	For. 191 Log. Engr.	5	For. 192 For. Engr.	8
		140 Construction	3	119 For. Admin.	4
		152 For. Organiz.	3	171 For. Geography	3
		192 Semi. (Resume)	3		
		M.E. 70 El. Gas Eng.	2		
		Suggested Electives			
				For. 199 Proj. Report	1-3
				160 For. Investi	2-5

LUMBER MANUFACTURING

Preparation for operation of sawmills and lumber yards, and general lumber sales.

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
For. 158 Utilization	5	For. 152 For. Organiz.	3	For. 151 For. Finance	3
105 Wood Pres.	3	B.A. 107 Traffic Mgmt.	5	104 Tmbr. Physics	5
121 Silviculture	3	65 Accounting Surv.	5	B.A. 57 Prac. Bus. Rel.	5
M.E. 82 Steam Engines	3				
		Suggested Electives			
		For. 188 Kiln Drying	5	For. 160 For. Invest.	3
		M.E. 83 Steam Eng.	3		

FOURTH YEAR

For. 183 Milling	5	For. 184 Mfg. Prob.	5	For. 170 Adv. Milling	5
		140 Construction	3	119 For. Admin.	4
		124 Regional Silv.	3		
		Suggested Electives			
G.E. 1 Eng. Drawing	3	For. 194 Seminar	3	For. 171 For. Geog.	3
B.A. 67 Paper Work in Shipping	5	G.E. 2 Engr. Draw.	3	199 Project Report	5
B.A. 115 Bus. Corres.	5				

FOREST PRODUCTS

Preparation for work in manufacture and sales of forest products other than logs and lumber.

Third Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
For. 158 Utilization....	5	For. 188 Kiln Drying..	5	For. 104 Tmbr. Physics.	5
105 Wood Preserv...	3	Chem. 2 Genl. Inorganic	5	151 For. Finance....	3
M.E. 82 Steam Engines.	3			Chem. 111 Quantitative.	5
Chem. 1 Genl. Inorganic	5				
		Suggested Electives			
		For. 172 Wood Fibers.	5	For. 160 For. Investi..	3
		B.A. 65 Account. Sur..	5	Bot. 111 Pathology....	5

Fourth Year

For. 121 Silviculture..	3	For. 190 Adv. Wood Preservation	5	For. 103 Adv. Wood Technology	5
		124 Regional Silv....	3	189 Wood Pulp.....	5
		Suggested Electives			
For. 161 For. Investn...	5	For. 162 For. Investi...	5	For. 171 For. Geog....	3
173 Micro. Technique	5	194 Seminar	3	Chem. 55 For. Prod...	5
G.E. 1 Eng. Drawing...	3	G.E. 2 Eng. Drawing...	3		

FOREST SCIENCES

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

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
For. 121 Silvics.....	3	For. 122 Silviculture...	3	For. 151 For. Finance..	3
Geol. 1 Geology.....	5	Bot. 11 For. Botany...	5	123 Nursery Practice.	2
Bot. 1 Botany.....	5				
		Suggested Electives			
Zool. 1 El. Zoology....	5	For. 115 Protection....	3	Geol. 113 Physiography of Western U.S.A..	5
Chem. 1 Inorganic.....	5	163 Mensuration	5	Bot. 101 Ornamental Plants	5
Chem. 21 Inorganic....	5	53 Construction	3	Zool. 112 For. Entomol.	5
German 1 Elementary..	5	Geog. 11 Weather and Climate	5	Bot. 111 For. Pathology	5
French 1 Elementary...	5	Zool. 2 El. Zoology....	5	B.A. 57 Pract. Bus. Rel.	5
		Chem. 2 Inorganic.....	5		
		Chem. 22 Inorganic....	5		
		German 2 Elementary..	5		
		French 2 Elementary...	5		

Fourth Year

		For. 124 Regional Silv..	3	For. 171 For. Geog....	3
		152 For. Organization	3	119 For. Admin.....	4
		194 Seminar	3		
		Suggested Electives			
For. 158 Utilization...	5	For. 184 Manf. Prob..	5	For. 199 Project Rep..2-5	
125 Silviculture	5	199 Project Rep.....2-5		Bot. 142 Gen. Fungi...	5
199 Project Rep.....2-5		Bot. 141 Gen. Fungi...	5	145 Plant Phys.....	5
Bot. 140 Gen. Fungi...	5	144 Plant Phys.....	5		
143 Plant Phys.....	5	Zool. 156 For. Entomo..	3		
English 40 Essentials of Speaking	5				
Zool. 155 For. Entomol.	3				

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 fulfill the requirements for the master's degree. Nine credits only will be allowed for total thesis credit.

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
For. 202 Thesis	3-6	For. 202 Thesis	3-6	For. 202 Thesis	3-6
208 Seminar	3	209 Seminar	3	223 Adv. Mgmt.	8
213 Research	1-5	214 Research	1-5	215 Research	1-5
		221 History	3		
		Elective	10		

Courses of Study

For a description of courses, offered by the College of Forestry, 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, forty by seventy feet. There is a large consultation room, twenty-five 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. The University law library contains 49,637 volumes, including the reports of the courts of last resort, the reported lower courts of 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 contains 205,751 volumes. It is especially strong in reference works.

The Seattle public library, containing about 450,000 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 twelve 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.

For information on other general University fees and expenses, applicable to all students, see General Information section, page 62.

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, pages 92-93). 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, page 113). 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 must have three years of academic training.

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 twenty-three 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 ten 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 restrictions: 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 Administraton 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 195).

Credit Requirements. A minimum total of 135 hours or credits in strictly law subjects is required for completion of the law course. A student earning an average of fifteen hours or credits in each quarter can therefore qualify for graduation in nine quarters or three college years. Except upon special permission from the dean of the law school, students are limited to fifteen hours per quarter.

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 twelve credit hours 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 cannot be registered for the full fifteen-hour course except when entering at the first or autumn quarter, and can enter advantageously only at that time.

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.

Thesis. It is the desire of the faculty to encourage original investigation and research by students. Each candidate for a degree in June is required to prepare and deposit with the dean of the Law School, on or before May first of his senior year, a thesis of not less than thirty folios in length, on some legal topic selected by the student and approved by the faculty. It must be printed or typewritten, and is to be kept permanently in the library of the Law School. Candidates for graduation at the end of the autumn or winter quarter must deposit their theses with the dean of the Law School on or before December 1 and March 1, respectively.

Each senior expecting to be graduated in June must select his thesis subject and file his selection in writing with the dean on or before November 15 of his senior year. A senior expecting to be graduated at the end of some quarter other than the spring quarter must file his thesis subject

with the dean three quarters before the time of graduation. Upon filing the selection of his subject, the student will be assigned to one of the members of the law faculty as thesis adviser and will be required to consult with his thesis adviser at regular intervals and report his progress. No thesis will be accepted by the dean as fulfilling the thesis requirement unless it has been first approved in writing by the thesis adviser, and unless all of the thesis regulations have been complied with.

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 135 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 5 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, pp. 92-93.) 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, p. 113.)

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.

Autumn Quarter Entrance. The Law School curriculum contemplates entrance in the autumn quarter, and the student enters advantageously only at this time. This is of such importance that in cases where there are only a few deficiencies, they should, if possible, be removed during the intervening summer quarter, or through the Extension Service.

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.
Astronomy 1.
Liberal Arts 1, 11.
Latin 1-2, 3, 4, 5, 6.
Business Administration 1, 2.
Business Administration 65.
Sociology 1.
English 40.
English 51, 52, 53.
English 54, 55, 56.
English 64, 65, 66.
English 73, 74, 75.
Political Science 1.
Political Science 118.
Political Science 119, 120.
History 105, 106, 107.
History 108, 109, 110.

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 English 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 History 57, 58, and 59 in the University. If U. S. History has been taken, but civics not taken, the student must take Political Science 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. History 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, in addition thereto, to take History 105 and 108, and their sequences, throughout their sophomore year. These courses combined, fill the 10 o'clock period for the year, and therefore the student is advised during his first year so to register as to leave this period free. These courses are open to pre-law sophomores.

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 hours of additional credit 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 Uni-

versity, 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. Philosophy 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. Psychology 1 is required. Two quarters or ten 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, 1 year or 10 credits; chemistry, 1 year or 10 credits; physics, 1 year or 10 credits; and botany or zoology, 1 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 2 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 science or physical education. To take the 144 credits in three years, the student should carry an average of 16 hours 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 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 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 bulletins of 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 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 section relating to 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 a description of courses, offered by the School of Law, see Departments of Instruction section.

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. Much of the heavy mining machinery used in the neighboring states and Alaska is built in Seattle, while patented machines, such as drills and concentrating tables, are kept in stock and as working exhibits by the firms that supply the North Pacific coast regions. Most of the eastern firms that deal in mining equipment make their Seattle branch the distributing center for 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, 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.

Buildings

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 Department 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.

Laboratories

For a description of mining, metallurgical and ceramic laboratories, see pages 44-46.

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 five 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 the entire 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 1930-1931 the following subjects have been selected for investigation: 1. Coal. (a) Beneficiation: Coal washing. Application of ore dressing principles to cleaning of coal; (b) Utilization: Briquetting of low grade coals and other utilization problems; (c) low temperature 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.

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.

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.

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, 1930, the attendance numbered 240. The next session of the Institute will open at 9 a.m. on Monday morning, January 19, 1931.

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 47.

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 51-68.

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	½ unit
Solid geometry	½ unit
Physics	1 unit

If the student has not included these subjects in his high school elections, it will be necessary for him to include them among his elections 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 bulletin.

CURRICULA OF THE COLLEGE OF MINES

MINING ENGINEERING (OPTION I)

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
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. or Physical Ed.	1⅔	Military or Naval Sci. or Physical Ed.	1⅔	Military or Naval Sci. or Physical Ed.	1⅔

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	English 100	3
Geology 5	5	Chemistry 111	5	Geology 121	5
Military or Naval Sci. or Physical Ed.	1⅔	Military or Naval Sci. or Physical Ed.	1⅔	Military or Naval Sci. or Physical Ed.	1⅔

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
Mech. Engineering 54.. 1		Electives 3

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)

THIRD YEAR

Autumn Quarter *Credits*	*Winter Quarter* *Credits*	*Spring Quarter* *Credits*
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
Mech. Engineering 54.. 1	Electives 2	Electives 4

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)

THIRD YEAR

Autumn Quarter *Credits*	*Winter Quarter* *Credits*	*Spring Quarter* *Credits*
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. Eng'g. 121-122... 6
Geology 123 3	Elec. Engr'g. 101-102.. 6	Electives 6

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)

Third Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
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. Eng'g. 101-102	6	Mech. Engineering 81	3
Mech. Engineering 83	3			Elec. Eng'g. 121-122	6

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
Mech. Engineering 54	1	Electives	4	Electives	7
Electives	3				

CERAMIC ENGINEERING (OPTION V)

First Year

(Same as for Option I)

Second Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
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. or Physical Ed.	1⅔	Military or Naval Sci. or Physical Ed.	1⅔	Military or Naval Sci. or Physical Ed.	1⅔

Third Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
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	English 100	3
				Electives	5

Ceramic 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 is now discontinued and students entering in the autumn of 1930 will take a four year course.

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. A three-year graduate must have one year of practical experience.

3. A graduate of *any two-year* course of a recognized College of Pharmacy must have two years of practical experience and pass the examination under the direction of the state department of licenses as listed in paragraph five.

4. 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 five.
(b) A graduate of a three-year course must have one year of practical experience and pass an examination as listed under paragraph five.
(c) A graduate of a four-year course is not required to have practical experience, but must pass an examination as listed under paragraph five.

5. 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.

6. Persons who register by examination in the State of Washington can become registered in forty-three other states in the Union without further examination. Graduates of the *University of Washington College of Pharmacy* are urged to register by passing the examination as listed in paragraph five so that they may have the privilege of reciprocal registration in other states without examination.

7. A registered pharmacist must be over twenty-one years of age. Persons under twenty-one shall be classified as assistant registered pharmacists until the age of majority is attained.

8. 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.

9. 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.

10. 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 de-

siring 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.

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 credit hours 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 hour 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 of the four-year course are 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 optimus 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 51-68.

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 examinations in designated subjects. A special orientation course is offered for which a special fee of twenty dollars ($20) is charged. This may be required of students who are found to need this special training.

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 (B.S.) 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.

The first two-years of all three curricula are the same and are outlined as follows:

First Year

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Phar. 1 General.....	3	Phar. 2 General.....	3	Phar. 3 General.....	3
4 Profession	2	Chem. 9 General.....	5	Chem. 10 Qualit.....	5
Chem. 8 General.....	5	English 9 Comp.....	3	English 10 Comp.....	2
Bot. 13 Pharmacy.....	5	Bot. 14 Pharmacy.....	4	Physiology 6 Human..	5
Military or Naval Sci. or Physical Educ...	1⅔	Military or Naval Sci. or Physical Educ...	1⅔	Military or Naval Sci. or Physical Educ...	1⅔

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... 1⅔	or Physical Educ... 1⅔	Military or Naval Sci.
		or Physical Educ... 1⅔

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

Autumn Quarter *Credits*	*Winter Quarter* *Credits*	*Spring Quarter* *Credits*
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 3
	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. 62 Accounting.... 5
Approved Elective 3	Approved Elective 3	Approved Elective 3

Total scholastic hours for graduaton—180 plus 10 hours in military or naval science or physical education.

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2. THE SCIENTIFIC COURSE. (Prepares students for prescription and hospital pharmacy, manufacturing pharmacists and pharmaceutical chemists.)

THIRD YEAR

Autumn Quarter *Credits*	*Winter Quarter* *Credits*	*Spring Quarter* *Credits*
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 hours for graduaton—180 plus 10 hours in military or naval science or physical education.

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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

Autumn Quarter *Credits*	*Winter Quarter* *Credits*	*Spring Quarter* *Credits*
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	English 2 or 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. Ht. Lt. 5	Physics 3 or 6 Elect.... 5
Bact. 101 General..... 5	Approved Elective 10	Approved Elective 10
Approved Elective 5		

Total scholastic hours for graduaton—180 plus 10 hours 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 22 credits allowed outside of the department of pharmacy.

Not less than 23 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.

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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.

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 Oceanographical 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 197,147 volumes, and receives virtually all of the publications of learned societies. The law library contains approximately 53,428 volumes. The Seattle public library, containing about 422,599 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 Oceanographical Laboratories. The University of Washington Oceanographical 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. For further details see page 357.

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 five 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.

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 ex-

pects 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, to determine whether he has the native equipment and the scholarship to warrant him in continuing.

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 Examination—An oral, or written, or oral and written examination, covering 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 designated by the committee, shall be subject to review.

If there is division of opinion in the committee in charge of either examination, the case shall be decided by the graduate council, with right of appeal to the graduate faculty.

5. Evidence of a reading knowledge of scientific French and German and of such other languages as individual departments may require. 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 a 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 commiittee 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, of the instructors in charge of the thesis, and of the librarian or his appointed representative.

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.

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.

Courses of Study

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

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 1930-1931.

Courses preceded by ** are given if a sufficient number of students elect them.

DEPARTMENTS OF INSTRUCTION

AERONAUTICAL ENGINEERING

Aeronautical Laboratory

Professors Eastwood, Kirsten; Associate 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, spring. 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; autumn, 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, winter. 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, spring. Kirsten.

141. *Aerial Propulsion.* Study of several methods of screw propeller design; design of a standard screw propeller and performance calculations. Prerequisite, A.E. 101. Three credits; autumn, winter, 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.* Study of helicopters, cyclocopters, ornothopters and auto-gyros. Prerequisite, A.E. 102. Three credits; autumn. Kirsten.

161. *Aerial Transportation.* Layout, location, construction, and equipment of airways and air terminals. Prerequisite, A.E. 111, 141. Three credits; autumn, winter. 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. *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, spring. Miller.

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, courses 7, 100, 102, 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 sagital 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. Six credits a quarter; 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-medic 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

Professor L. Spier; Instructors Jacobs, E. G. Spier; 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. L. Spier, Jacobs.

*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. Jacobs.

*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. E. G. Spier.

112. *Peoples of the Pacific.* Life and customs of the natives of the South Seas, Australia, and the Philippines. Three credits; winter. L. Spier.

113. *Peoples of Northeastern Asia.* Racial groups, life and customs of the non-historic peoples of Manchuria, Mongolia, and northeastern Siberia; the relation of Manchus and Mongols to the Chinese. Three credits; autumn. Lopatin.

114. *Peoples of Central and Northern Asia.* Racial and linguistic groups, life and customs of the natives of Turkestan, Asiatic Steppes, and Siberia; relations to the historic nations of Europe and southern Asia. Three credits; spring. Lopatin.

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. E. G. Spier.

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. L. Spier.

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 sudent's special interests. Instructor's permission necessary. Credits and hours to be arranged. Autumn, winter, spring. Staff.

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.

*Not offered in 1930-1931.

ARCHITECTURE

Architecture Building

Professors Thomas, May; Associate Professors Herrman, Gowen; Lecturer Alden; Instructors Pearce, Pries.

(Member of the 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. Forty hours of foreign language are required for graduation, fifteen hours 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. Class B. 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 periods in European architecture. Illustrated lectures and li-

brary 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 any quarter; 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.

115. *Modelling.* Modelling of architectural subjects from program; work to be done outside of class hours or as arranged. Definite number of points required for the course. Senior standing; two credits; winter. Pries.

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. *History of Architectural Ornament.* A comparative study of the historic development of architectural ornament. Illustrated lectures and library research. Prerequisite, Arch. 3. Two credits; autumn. Gowen.

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 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.

[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.

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. 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. 158, in which case, the amount of that fee will be deducted. Gowen.[1]

170. *Senior Mechanics.* Advanced theory of construction. Structural design of buildings and solution of structural problems in concrete or steel of the thesis required for graduation. Two credits; winter. May.

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.

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.

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 Canners' 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,

[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.

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, $4. Five credits; autumn, winter, spring, summer. Weinzirl and Staff.

102. *Sanitary Bacteriology.* Bacteriology of soil, air, water, sewage, foods, clothing, etc. Prerequisite, Bact. 101. Lab. fee, $4. Five credits; winter. Weinzirl and Hoffstadt.

103. *Public Hygiene.* Five credits; lectures only; autumn, spring. Lab. fee, $1. Weinzirl.

104. *Serology.* Types of immunity; immunization of animals and man; study of immune products. Prerequisite, Bact. 101. Lab. fee, $5. Five credits; spring. Hoffstadt.

105. *Infectious Diseases.* Study of the pathogenic bacteria, and methods of diagnosis of infectious diseases. Prerequisite, Bact. 101. Lab. fee, $5. Five credits; autumn. Hoffstadt.

106. *Clinical Diagnosis.* Examination of blood, urine, gastric and intestinal contents, parasites, etc. Prerequisite, Bact. 101. Lab. fee, $5. Five credits; winter. Hoffstadt.

107. *Sanitation.* Technique and application of bacteriology to sanitary engineering. For engineers. Lab. fee, $2. Three credits; winter. Weinzirl and assistant.

110, 111, 112. *Pathology.* Gross and microscopic study of diseased tissue. Prerequisite, Anat. 105. Lab. fee, $5. 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

Science 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, 4, 105, 106, 107 will be accepted. Students in the College of Fine Arts desiring to satisfy the science requirement by taking botany may select from this list, or they may include 101. It is recommended that they include 101 where possible.

For a major: Courses 105, 106, 107, 140, 141, 142, 143, 144, 145 of which 105, 106, 107 are required.

For teaching botany: 105, 106, 107, Edu. 75B, Bot. 140, 141, 142, 143, 144, 145, are suggested.

For pharmacy students: 13, 14.
For forestry students: 1, 11, 101, 111, 140, 141, 142, 143, 144, 145.
For fisheries students: 53.

1. *Elementary Botany.* Structure and functions of roots, stems, leaves and seeds. Open to students entering 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. Open to students entering without 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.

4. *Ecology.* A field study of plant communities with lectures on the principles of ecology. Prerequisite, Bot. 1, 2, or 3. Fee, $2. Five credits; spring. Rigg and assistants.

11. *Foresters' Botany.* Types of plants illustrating the advance in complexity. For forestry students. Lab. fee, $2. Five credits a quarter; winter. Hotson and assistants.

13, 14. *Pharmacy Botany.* Gross structure of vegetative and reproductive parts of seed plants, brief study of spore plants; microscopy of powdered drugs. Lab. fee, $2. Five credits, autumn; four credits, winter. Rigg and assistants.

53. *Aquatic Botany.* Plants of fresh water habitats, especially those involved in the study of fishes and their culture. Lab. fee, $2. Five credits; spring. Rigg.

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, spring. Hotson.

101. *Ornamental Plants.* The plants used in beautifying lawns and houseyards, their propagation and use. Lab. fee, $3. Five credits; spring. Hotson.

105, 106, 107. *Morphology and Evolution.* Morphological study of types to show advances in complexity. Required for all majors. Prerequisite, one year high school botany, or 10 hours 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 destroying fungi. Prerequisite, Bot. 11 or 105. Lab. fee, $2. Five credits; spring. Hotson and assistant.

119. *Plant Histology.* Preparation of slides for the microscope; a study of tissues. Prerequisite, Bot. 106. Lab. fee, $3. Two to five credits; autumn. Frye.

130. *Taxonomy.* The flowering plants. Prerequisite, fifteen hours of botany. Five credits. Autumn. Frye.

140, 141, 142. *General Fungi.* Morphology and classification of fungi as a basis for plant pathology. Prerequisite, 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.* Diseases of plants and the fungi which produce them. Prerequisite, Bot. 142. Lab. fee, $2. Five credits a quarter; autumn, winter, spring. Hotson.

199. *Proseminar.* Semi-independent work by students. Open only on consultation with the head of the department. Lab. fee, $2. Two to five credits; any quarter. Frye, Rigg, Hotson.

Teachers' Course in Botany. See Educ. 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, $2. 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, $2. Three credits; autumn. Frye.

250. *Algae.* Prerequisite, Bot. 105. Lab. fee, $2. Credits to be arranged; autumn, winter. Frye.

251. *Bryophytes.* Prerequisite, Bot. 106. Lab. fee, $2. Credits to be arranged; any quarter. 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. 107 or 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.

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; Associates Radford, Lang.

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; spring. Beuschlein.

*55. *Forest Products.* (Offered every other year, alternating with 56).

56. *Forest Soils.* (Offered every other year, alternating with 55). A study of the physical and chemical properties of soils; theories of soil fertility; fertilizers. Prerequisite Chem. 111. One lecture and one laboratory period a week. Lab. fee, $2. Two credits; spring. Benson.

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. 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.* The study of fuels, lubricating oils, alloys, paints, and protective coatings. Prerequisite, Chemistry 23 or equivalent. Two lectures and one laboratory period. Lab. fee, $3. Three credits; spring. Benson.

119. *Industrial Chemistry for Engineers.* The study of water, sewage, iron, steel and cement from an evaluative standpoint. Prerequisite, Chem. 23 or equivalent. Two lectures and one laboratory period. Lab. fee, $3. Three credits; winter. Benson.

121, 122, 123. *Industrial Chemistry.* Autumn—fuel, gases, cements, refractories, iron, steel, and alloys; winter—processes for manufacture of acids, alkalies; 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 labora-

*Not offered in 1930-1931.

tory periods a week. Prerequisite, Chem. 23, or its equivalent. Lab. fee, $6.50. Five credits; autumn, winter, spring. Dehn.

134. *Manufacture of Industrial Organic Chemicals.* Manufacture of organic chemicals on a semi-commercial scale. Two laboratory periods a week. Prerequisite, Chem. 129 or 132. Lab. fee, $2. Two credits; autumn. Powell.

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-medic 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.

145. *Glassblowing.* Laboratory course in elementary glassblowing and design of glass apparatus. Prerequisites, Chem. 111 or equivalent. One or two laboratory periods per week. One or two credits. Autumn, spring. Fee, $1 per credit hour.

Advanced Undergraduates and Graduates

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 hour. 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. *Chemistry of the Sea.* Study of the composition of sea water, its physical and chemical properties, methods of analysis and hydro-dynamical treatment of data. Prerequisite Chem. 111 or equivalent. Two lectures and one laboratory period. Lab. fee, $3. Three credits; spring. Thompson.

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 and 131 or equivalent. One lecture and two laboratory periods. Lab fee, $3. Three credits; spring. Norris.

164. *Chemistry of Plant and Animal Tissues.* Application of physiological chemistry to the study of biology. Prerequisites, Chem. 111 or 110 and 129. One lecture and two laboratory periods. Lab. fee, $3. Three credits; winter. Norris.

165. *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.

166. *Biochemical Preparations.* Preparations of special substances involving biochemical methods. Lab. fee, $1 per credit hour. 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 hour. 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 205, 206, 207). Smith.

Teachers' Course in Chemistry. See Educ. 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). An advanced course giving a detailed study of different phases of the subject. Prerequisites, one year (15 credits) of college physics, calculus, and Chem. 182. No fee. Three lectures. Three credits a quarter; autumn, winter, spring. Tartar.

*204. *Chemistry of Colloids.* (Offered every other year, alternating with 201, 202, 203). Three lectures. No fee. Three credits.

205, 206, 207. *Inorganic Preparations.* (Offered every other year alternating with 190, 191). Preparation of special substances involving representative laboratory methods. Any quarter may be taken independently. Credits and laboratory periods to be arranged. Lab. fee, $1 per credit hour; autumn, winter, spring. 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.

210, 211, 212. *Organic Preparations.* Preparation of special substances involving representative laboratory methods. Any quarter may be taken in-

*Not offered in 1930-1931.

dependently. $1 per credit hour. Credits and laboratory periods to be arranged. Autumn, winter, spring. Powell.

*215, 216. *Advanced Theoretical and Physical Chemistry.* (Offered every other year, alternating with 202, 203). 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 compounds, 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.

225. *Advanced Quantitative Analysis.* Special methods of analytical chemistry. Work adapted to the interest and need of the student. One to five credits. Laboratory to be arranged. Fee, $1 per credit hour. Autumn, winter. Thompson, Robinson.

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. *Organic Analysis.* Special methods used in the analysis of organic substances. Prerequisites, Chem. 132 and 110. Laboratory periods to be arranged. Three or six credits; $1 per credit hour; 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. One to five credits and laboratory periods to be arranged. Fee, $1 per credit hour; any quarter. Sivertz.

*241, 242, 243. *Advanced Chemical Engineering.* (Offered every other year, alternating with 244, 245, 246). 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). A detailed study of basic unit operations. Evaporation, drying, distillation, absorption and extraction. Prerequisite, calculus and Chem. 172. No fee. Three credits a quarter; autumn, winter, and spring. Beuschlein.

249. *Graduate Seminar.* Assigned readings and reports dealing with

*Not offered in 1930-1931.

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 credit nine hours. (3) Research for the doctor's degree under direction of any member of the senior staff of the department. $1 per credit hour. Maximum credit forty-five hours. Staff.

CIVIL ENGINEERING

Guggenheim Hall

Professors More, Tyler, Harris, May; Associate Professors Wilcox, A. L. Miller; Assistant Professors Collier, Hamilton, Hawthorn, J. W. Miller, Farquharson, Van Horn; Lecturer Hauan; Instructor Sergev.

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. Hamilton.

54. *Topographic Surveys.* Field and office collection of information and platting of field notes for topographic surveys. For geology students. Lab. fee, $2. Three credits; spring. Hamilton.

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. Hamilton.

56. *Forest Surveying.* Plane surveying with reference to work in forestry. Orientation. Prerequisite, C.E. 55. Lab. fee, $2. Five credits; spring. Hamilton.

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, Hamilton.

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, Hamilton.

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, Hamilton.

100. *Advanced Drafting.* Layout of construction plants and the design of special equipment. Prerequisite, C.E. 132. Two credits; autumn. A. L. Miller.

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.

131. *Mechanics.* Fundamental principles of mechanics. Kinetics, kinematics. Prerequisites, Math. 62, Physics 97. Three credits; autumn, winter, spring. A. L. Miller, Farquharson, Collier, Hawthorn.

132. *Mechanics.* Mechanics of materials. Analysis and design of structural members. Prerequisite, C.E. 131. Three credits; autumn, winter, spring. A. L. Miller, Farquharson, Collier, Hawthorn.

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 hydro statics. Prerequisite, C.E. 131. Lab. fee, $2. Five credits; autumn, winter, spring. Harris, Hamilton, Wilcox, Van Horn.

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 installations. 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, $2. 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. Lab. fee, $2. 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. More, A. L. Miller.

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. More, A. L. Miller.

173. *Structural Analysis.* Timber—Investigation of the stresses in timber structures and structural members. Prerequisite, C.E. 172, or permission. Three credits; spring. More, A. L. Miller.

175. *Structural Design.* Reinforced Concrete—Design of reinforced concrete structures and structural members. Prerequisite, C.E. 171. Four credits; autumn. More.

176. *Structural Design.* Steel—Design of welded and riveted steel structures and structural members. Prerequisite, C.E. 172. Four credits; winter. More.

177. *Structural Design.* Timber—Design of timber structures and structural members. Prerequisite, C.E. 173. 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, courses 7, 100, 102, 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 hours 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. *The Persian War Period.* Wide readings in Herodotus. Prerequisite, Greek 3. Three credits; autumn. Densmore.

5, 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 4. Three credits; winter, 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, winter, spring. Read.

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. Two credits a quarter; autumn, winter, spring. Densmore.

151, 152, 153. *Plato.* Intensive study of the Republic, the Laws (in part) and some of the shorter dialogues. Prerequisite, Greek 101, 102, 103. Three to five credits a quarter; autumn, winter, spring. Densmore.

*Not offered in 1930-1931.

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 1930-1931 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 hours, chosen from courses other than 1-2, 3, 4, 5, 6, 11, 13. At least fifty per cent of the hours in the major must be in upper division courses. A student majoring in Latin must take at least 15 hours 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; autumn, winter, spring. Boxall.

13. *Roman Literature.* The masterpieces in English translation. Knowledge of Latin not required. Five credits; autumn, winter, spring. Sidey.

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.*

23. *Vergil: Georgics and Bucolics; Latin Literature* (Mackail). Prerequisite, three and one-half years' of high school Latin. Five credits; winter. Read.

24. *Sallust: Catiline or Jugurtha; Latin Literature* (Mackail). With some exercises in grammar and composition. Prerequisite, three and one-half years' high school Latin. Five credits; spring. Sidey.

*Not offered in 1930-1931.

*25. *Ovid.* Metamorphoses.

100. *Livy.* One book and selections from the other books. Prerequisite, Latin 21, 24, 25, or special permission. Five credits; autumn. Stone.

101. *Horace.* Selections from the complete works. Prerequisite, Latin 21, 24, 25 or special permission. Five credits; winter. Stone.

*102. *Tacitus*: Germania and Agricola.

103. *Plautus and Terence.* Selected Plays. Prerequisite, Latin 21, 22, 23 or special permission. Five credits; spring. Stone.

106. *Syntax and Prose Composition* (Advanced). Students should, if possible, register for this course in combination with Educ. 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.* Selected portions of Cicero's correspondence with collateral readings. Prerequisite, Latin 100 or 101 or 102. Three credits; winter. Stone.

*108. *Vergil's Aeneid.* Books 7-12.

*109. *Pliny's Letters.*

113. *Roman Home Life and Religion.* Selections from Rogers and Harley's text, with collateral reading and reports. Prerequisite, Latin 100 or 101 or 102 or equivalent. Three credits; spring. Stone.

*150. *Juvenal.*

*151. *Cicero*: Tusculan Disputations.

*153. *Christian Latin.*

154. *Lucretius*: *De Rerum Natura.* General study of the poem with special reference to Books I, III, and V. Two to five credits; autumn. Sidey.

157. *Cicero*: *De Officiis.* Two to five credits; winter. Sidey.

158. *Tacitus*: *Dialogus and Quintilian.* Book X. 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.

185, 186 (285, 286). *Vulgar Latin.* Vocabulary and syntax; relation to archaic Latin, literary Latin, and especially to the Romanic languages. Reading of texts, with additional work adapted to the needs of individual students. Undergraduates will register under numbers 185 and 186, graduates under numbers 285 and 286. Prerequisite at least four quarters of college Latin and three years (or six quarters) of either French, Spanish, or Italian. Three to five credits each quarter; winter and spring. Stone.

187, 188 (287, 288). *Medieval Latin.* Selections from Medieval Latin literature; relations of medieval Latin to classical Latin and to the modern languages. This course is designed to be of use to students majoring in the Romanic languages, English, or history, as well as to classical students. Undergraduates will register under numbers 187 and 188, graduates under num-

*Not offered in 1930-1931.

bers 287 and 288. Prerequisite, senior standing in Latin and a good working knowledge of one of the Romanic languages, or senior standing in one of the Romanic languages and a good working knowledge of classical Latin. Three to five credits. Stone.

Note: One of the four courses 185, 186, 187, 188, (285, 286, 287, 288), will be offered in the winter quarter and one in the spring quarter, according to demand.

COURSES FOR GRADUATES ONLY

*211. *Latin Novel.*

213. *Latin of the Italian Humanists.* Selections by Gragg will be read in class and an introductory study made of the Italian Renaissance. Two to five credits; autumn. Sidey.

214. *Suetonius and Tacitus.* A study of the life and times of Augustus. Two to five credits; winter. Sidey.

215. *Latin Elegists.* A critical and exegetical study of the text. Two credits; spring. Read.

ECONOMICS AND BUSINESS ADMINISTRATION

Commerce Hall

Professors Cox, Gould, Preston, Dakan, Coon, Burd, Skinner, Smith, McMahon; Associate Professors Gregory, Demmery, Ashley, Hall; Assistant Professors Farwell, Brown; Lecturers McConahey, Robertson, Davis, Draper, Truax; Instructors Van de Walker, Miller, Calhoun, Mackenzie, Grant; Associates Hamack, Haas, Wheeler.

Economics. Courses 1, 2, 3, 60, 61, 103, 104, 106, 108, 121, 122, 124, 129, 131, 159, 160, 161, 162, 164, 165, 166, 168, 169, 171, 175, 181, 201, 205.

Accounting. Courses 62, 63, 64, 65, 110, 111, 112, 154, 155, 156, 157, 158, 184, 185, 191.

Business Correspondence. Course 115.

Business Law. Courses 54, 55, 56, 57.

Business Statistics and Forecasting. Courses 59, 175, 177.

Commercial Banking and Credit Administration. Courses 103, 125, 126, 127, 159, 189, 197.

Commercial Teaching. Courses 102, Edu. 75E, Edu. 75F.

Foreign Trade. Courses 7, 67, 117-118, 127, 143, 144, 145, 173, 174, 195.

Insurance. Courses 108, 141, 142, 149, 170.

Investment Banking. Courses 120, 121, 122, 176, 178.

Labor. Courses 60, 128, 139, 161, 162, 165, 166, 167, 207.

Management. Courses 130, 163, 167, 172, 196.

Marketing, Merchandising, and Advertising. Courses 106, 109, 134, 135, 136, 137, 138, 140, 146, 147, 148, 188, 198.

*Not offered in 1930-1931.

Public Utilities. Courses 131, 132, 133.

Real Estate. Courses 164, 169.

Transportation. (Railroad) Courses 104, 107, 150, 151, 195.
(Water) Courses 42, 49, 53, 67, 113, 119, 151, 152, 195.
(Air) Courses 114, 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. Cox, Preston, Smith.

3. *General Economics.* Same as B.A. 1 above, abbreviated for students in chemistry, pharmacy, forestry, fisheries and engineering. Three credits; spring. Skinner.

7. *Geographic Background of Industry.* 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.

42. *Wharf Management and Storage.* Wharf efficiency and shipping profits; wharf layout and construction; wharf office organization; methods of cargo transfers; types of cranes and derricks; stowage and the stowage plan; warehousing and storage. (B.A. 1 and 2 not prerequisite.) Five credits; spring. Gould.

49. *Ship Operation.* Types of vessels, with reference to materials and methods of construction, stress and stability of hulls, methods of propulsion, measurement and stowage of cargo. (B.A. 1 and 2 not prerequisite.) Five credits; autumn, winter. Gould.

53. *Navigation.* A survey course. Correction of courses; the sailings; dead reckoning; piloting; latitude; longitude; azimuth; determination of position at sea by the methods of Marc Saint Hilaire and H. O. Table 208; the theory of compass adjusting; nautical instruments. 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. Ashley, Brown.

55. *Business Law.* Continuation of B.A. 54 as outlined. Prerequisite, B.A. 54. Three credits; autumn, winter, spring. Ashley, Brown.

56. *Business Law.* Continuation of B.A. 55. Prerequisite, B.A. 54 and B.A. 55. Three credits; autumn, winter, spring. Ashley, Brown.

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. Ashley, 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.

60. *Labor in Industry.* An historical survey of labor problems arising out of changing industrial conditions. Methods used by industrial and social agencies in meeting these problems. Five credits; autumn, spring. McMahon.

61. *Social and Economic Standards of Living.* Their origin and development; class standards and their influence on industry. A comparative study of budgets. Three credits; winter. McMahon.

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. Gregory 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. Van de Walker 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.

67. *Paper Work in Shipping.* Forms used in documentation, entering and clearing, and in making coastwise and foreign shipments, with the solution of a number of practice problems. (B.A. 1 and 2 not prerequisite). Five credits; autumn, winter, spring. Gould.

102. *Office Management.* The office manager's problems of office administration. Attacks the problem of office control by the various activities and studies each in relation to all the others. Five credits; winter. Hamack.

103. *Money and Banking.* Introductory course. Functions of money; standards of value; financial conditions, 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.

106. *The 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. *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; winter. Farwell.

108. *Risk and Risk Bearing.* The risk factor in its economic and social consequences; ways of meeting risk; the general broad outline of life, fire and other insurance. Five credits; winter. Smith.

109. *Advertising Principles and Practice.* What advertising is and does; the advertising department; the advertising agency. Prerequisite, B.A. 106. Five credits; spring. Miller.

110. *Advanced Accounting.* Valuation of balance sheet and revenue statement items; surplus and reserves; dividends; sinking funds; liquidation of partnerships and corporations; consolidated balance sheets; reports of trustees and receivers. Prerequisite, B.A. 64. Five credits; autumn, winter, spring. Draper.

111. *Advanced Accounting.* Advanced partnership and corporation accounting; nature of profits; dividends; the legal status of same; statement of affairs; realization and liquidation accounts. Prerequisite, B.A. 110. Five credits; autumn, winter, spring. Draper.

112. *Advanced Accounting.* Bond and stock issue problems; premiums and discounts on securities; funds and reserves; mergers and consolidations; graphs and comparative statements; estate accounting. Prerequisite, B.A. 111. Five credits; autumn, winter, spring. Gregory.

113. *Ports and Terminals.* Factors of a well co-ordinated port; modern terminal facilities; representative river, lake and sea ports. Three credits; autumn. Gould.

114. *Aerial Navigation.* Description of instruments; solution of problems; aerology; identification of stars and planets; compensation of magnetic compass, gyro compass, the inductor compass; use of mooring board diagrams. Prerequisite, B.A. 53. Three credits; spring. Farwell.

115. *Business Correspondence.* Business letters; analysis of principles; development of judgment on points of business policy. Prerequisites, English 1 and junior standing. Five credits; autumn, winter, spring. Miller.

117-118. *Exporting and Importing.* Principles and technique of exporting and importing; analysis of markets; preparation of documents and calculation of values of staples and of manufactured products and the financing of shipments. Prerequisite, B.A. 7. Five credits each; winter, spring. Skinner.

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. (Open to sophomores in Water Transportation.) Five credits; autumn. Farwell.

120. *Business Organization.* Business corporations; associations, combinations; special reference to their functions, operation, advantages and disadvantages, relation to the anti-trust laws. Not open to students who have credit for B.A. 105. 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; 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; spring. Dakan.

124. *Public Finance.* The growth of public expenditures in modern times; the sources of public revenues and the general principles and practices of public credit. Five credits; autumn. Hall.

*125. *Bank Administration.*

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. Dakan.

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; autumn. Preston.

*128. *Human Waste in Industry.*

129. *Taxation.* General principles and problems of taxation in national, state and local governments. Five credits; winter. Hall.

130. *Industrial Analysis and Control.* A study of the factors governing the location, effective operation and growth of industries and the application of scientific methods to their coordination and control. Five credits; autumn and winter. McIntyre.

131. *Economics of Public Utilities.* A development of the fundamental economic theory of public utilities. Their economic basis, nature of competition, the price bargain, taxation, control over service, government enterprise and problems created by joint, differential and overhead costs. Five credits; autumn. Hall.

132. *Management of Public Utilities.* Administrative problems of location, rate setting and 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 slope conditions. Five credits; winter. Hall.

133. *Control of Public Utilities.* Growth and activities of regulatory bodies and commissions. Relation of restriction to public welfare, competition and monopoly under modern business conditions, municipal ownership with its incidental problems. Five credits; spring. Hall.

*134. *Marketing Problems.*

*Not offered in 1930-1931.

135. *Marketing of Northwest Products.* Methods of marketing wheat, apples, lumber, poultry and other products of the Pacific Northwest; comparative studies; physical facilities. Organized field trips. Prerequisite, B.A. 106. Five credits; autumn. Miller.

136. *Market Analysis.* Product analysis; price policies and sales strategy; sales promotion methods. Prerequisite, B.A. 106 and senior standing. Five credits; autumn. Burd.

137. *Advertising Campaigns.* Advertising appeals and their presentation; advertising media and their selection; appropriations; campaign plans. Prerequisite, B.A. 106 and senior standing. Five credits; winter. Burd.

138. *Sales Management.* Sales plans; establishing sales policies; constructing sales machinery; supervising sales forces. Prerequisite, B.A. 106 and senior standing. Five credits; spring. Burd.

*139. *Industrial Relations.*

140. *The Co-operative Movement.* Examination of the more successful co-operative ventures in the United States; recent tendencies; co-operative buying groups; co-operative advertising. Prerequisite, B.A. 106. Five credits; winter. Miller.

*141. *Fire Insurance.*

*142. *Life Insurance.*

143. *Trade of the Far and Near East.* Economic conditions of China, Japan, Siberia, the Philippines, French Indo-China, Siam, India, the Malay Peninsula, the Dutch East Indies, Australia, Persia, Mesopotamia, Syria, Arabia, Turkey and the Balkan States, and trade relations of these regions with the rest of the world, especially the United States. Prerequisite, B.A. 7. Five credits; winter. Skinner.

144. *Trade of Europe.* Economic conditions of Europe (and Africa), and the trade relations of these sections with the rest of the world, especially the United States. Prerequisite, B.A. 7. Five credits; spring. Skinner.

145. *Trade of the Americas.* Economic conditions of Canada, Mexico, and Central and South America, and the trade relations of these regions with the rest of the world, especially the United States. Prerequisite, B.A. 7. Five credits; autumn. Skinner.

146. *Retail Sales Problems.* Fundamental principles underlying retail selling. Problems of constructive merchandising, display advertising, personnel, and the consumer from the point of view of the sales manager and the selling force. Prerequisite, B.A. 106. Five credits; autumn. Grant.

147. *Retail Buying Problems.* The scientific and ethical principles underlying retail buying. Problems of the buyer in relation to customer demand, market, stock control, technique of buying, sales force, sales promotion, net profit. Prerequisite, B.A. 106. Five credits; winter. Grant.

148. *Retail Store Organization.* Fundamental principles underlying departmentalization; financial, personnel, merchandising, publicity and administrative organization. Prerequisite, B.A. 106. Five credits; spring. Grant.

*149. *Marine Insurance.*

150. *Railroad Transportation.* A study of the methods by which railroads are financed, administered, and operated; comparison of American and

*Not offered in 1930-1931.

foreign systems; survey of railroad legislation in the United States, with particular reference to federal regulation since 1920. Five credits; spring. ————.

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 or 150. Five credits; spring. ————.

152. *Shipping and Consular Regulations.* Navigation laws relating to prevention of collisions at sea; inspection of vessels; employment of seamen; carrying of cargo and passengers; towage and pilotage; wharfage and moorage; liability of vessels and owners; duties of consular officials; administration of navigation laws. Three credits; 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. 112. 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; winter. McConahey.

158. *Managerial Accounting.* Organization and duties of the accounting department in business from the standpoint of the management; the vital connection between management and accounts; how accounts should be handled to produce reports and statistics of the utmost value to the management. Prerequisite, B.A. 112. Five credits; autumn. McConahey.

159. *Advanced Money and Banking.* Selected topics in monetary science and business finance; value of money; financial effects of the great war; the Federal Reserve system; agricultural credit; banking trends and problems. 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. *Labor Economics.* The labor factor in the development of economic thought. A critical study of current theories. Five credits; winter. McMahon.

162. *European Labor Problems.* Labor movements of modern Europe; economic and political backgrounds, in relation to types of labor organizations. Five credits; autumn. McMahon.

163. *Industrial Management.* Problems of promotion and location of industrial plants. Selection of site, layout of processes, and control of material. Types of buildings, lighting, safety appliances, economic and psychological effect of scientific management. Five credits; autumn. Mackenzie.

164. *Real Estate and Land Economics.* Economic principles underlying the utilization of land; forces influencing the growth and structure of cities; urban land values; land ownership; city and regional planning. This course gives the foundation to the intelligent understanding of the real estate business. Five credits; autumn, spring. Demmery.

*165. *Labor Legislation.*

*166. *Women in Industry.*

167. *Employment Management.* 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. Five credits; autumn, spring. Coon.

169. *Principles of Real Estate.* Principles and practices of the real estate business; appraisals, financing and the selling of real estate; property management. Five credits; winter. Demmery.

*170. *Casualty Insurance.*

171. *Modern Trends and Criticism.* A study of present day criticisms of "orthodox theory" and a consideration of modern tendencies and controversies in economic thought. Prerequisite, 135 credits. Five credits; winter. Coon.

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.

174. *Foreign Trade of the West Coast.* An intensive and comparative study of the foreign trade of the various districts of the West Coast. Two credits; winter. 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. 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. Five credits; spring. Demmery.

*Not offered in 1930-1931.

178. *The Stock Exchange.* The organization and operation of the important exchanges; relation of the Exchange to the money market and to industrial credit; trading practices. Prerequisite, senior standing. (B.A. 1 and 2 not prerequisite.) Three credits; winter. Dakan.

181. *Economics of Consumption.* Historical development of human wants in relation to the economic laws of consumption; influence on the production and distribution of wealth. Attempts to control consumption through private and governmental agencies. Five credits; spring. McMahon.

184. *Auditing Technique.* Prerequisite, B.A. 112. Five credits; autumn, winter, spring. Robertson.

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; spring. McConahey.

188. ABC. *Apprenticeship in Merchandising.* Students are placed full time in autumn and spring quarters in actual business. Prerequisite, senior standing. Three-six credits; autumn, winter, spring. Grant.

189. *Bank Credit Administration.* A study of the administration of bank credit based on actual problems selected from portfolio of Pacific Northwest banks. Three credits; winter. Truax.

191 ABC. *Research in Accounting.* Two-five credits; autumn, winter, spring. Davis.

195 ABC. *Research in Foreign Trade and Transportation.* Two-five credits; autumn, winter, spring. Skinner, Gould, Farwell.

196 ABC. *Research in Management.* Two-five credits; autumn, winter, spring. Gregory, Hall.

197 BC. *Research in Finance.* 197B, attention given to international financial reconstruction. 197C, attention to monetary and price theory. Two-five credits; winter, spring. Preston.

198 BC. *Research in Marketing and Advertising.* Prerequisite, senior standing. Two-five credits; winter, spring. Burd.

COURSES FOR GRADUATES ONLY

201 ABC. *Graduate Seminar.* Three credits; autumn, winter spring. Cox.

205 ABC. *Seminar in Value and Distribution.* Prerequisite, B.A. 160 or equivalent. Three credits; autumn, winter, spring. Coon.

207 ABC. *Seminar in Labor.* Discussion of case material; individual conferences and supervision in field of research. Opportunities for investigation of labor problems in our basic Northwest industries. Three credits; autumn, 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 Uhl, Bolton, Bishop; Associate Professors Jessup, Williams, Dvorak, Draper; Assistant Professor Foster; Instructors Powers, Corbally; and Assistants.

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. Normal school students are required to take 60, 75 and from group (2) five credits in courses numbered above 101.

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 71 which has a fee of $4 and courses 190 and 191 which have a fee of $3. According to the agreement, students will not be required to purchase more than one text book in any one course.

I. Elementary Courses; Upper Division Credit

60. *Secondary Education: Problems of the High School Teacher*—Problems of the high school. The history of secondary education in the United States is taken up as a background for problems of articulation, guidance, individual differences, etc. Present day characteristics and objectives of the high school are considered and recent tendencies in curriculum construction noted. Lectures and laboratory exercises. Four credits; autumn, winter, spring. 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 observations of high school teaching and the assembly of materials to be applied in observation and practice teaching. Prerequisite, Educ. 60. Five credits; autumn, winter, spring.
Williams, Corbally.

71. *Cadet Teaching.* One lecture a week, conferences with the instructor and supervisors, assigned readings, and one period each day devoted to observation and cadet teaching under supervision in the Seattle city schools. Prerequisites, Educ. 60 and 70 or approved equivalent; fee, $4. Seven and one-half credits; autumn, winter spring.
Foster, Corbally, Powers.

Cadets registering for the autumn quarter will report for assignment the fourth Monday of the first semester of the city schools. (For phys. educ. majors, two and one-half credits a quarter.)

Application for cadet teaching placement must be made before June of the junior year. Plans should be made to take the course the first semester, as only a limited number can be accommodated the second semester. Application blanks are available at the office of the Director of Cadet Teaching, 114-A Education Hall.

71P. *Cadet Teaching for Physical Education Majors.* Two and one-half credits; three quarters required.

Course 70 is prerequisite, except as stated above, to courses numbered 75. One of the "teachers' courses" is required for the normal diploma.

75. *Teachers' Courses in Secondary Subjects*—Courses in the technique of instruction are offered in the following departments:

75A. *Art*—Type problems, courses of study, methods and materials. Prerequisite, P.S.D. 5, 6, 7, 9, 10, 11, 53, 54, 55, 56, 58, 105. Two credits; autumn. Rhodes.

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.

75E. *Commercial Course*—Typical business courses are examined and made the basis for discussions on needs of local business conditions. Study of the content of high school commercial courses and of texts. Prerequisites, 30 hours of the 54 required for a major in commercial teaching including fifteen hours in accounting. Five credits; spring. Two hours only count as education credit; three hours 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 hours of the 54 required for a major in commercial teaching, and proficiency in shorthand and typewriting. Five credits; spring. Two hours only count as education credit, three hours as business administration. Hamack.

75G. *Dramatic Art*—Two credits; spring. Conway and Staff.

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; spring. 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: Nutrition, Textiles*—Curricula, methods of teaching and equipment. Prerequisites, H.E. 5, 112, 113, 116, 143, 144, 145; Arch. 1-2; Physics 89-90; Bact. 101. Three recitations. Three credits each quarter; only two credits counted toward the normal diploma, the other four credits are counted in home economics. Autumn, winter.
Raitt, Denny.

75O. *Human Geography*—A survey of the present day content of the science of geography, together with the methods 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. Two credits; spring. Renner.

75P. *Latin*—Methods and problems in the teaching of high school Latin. Prerequisite, 20 hours 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.

75R. *Music*—Problems of upper grammar grades and junior high school. Prerequisites, Music 113, 114. Two credits; spring.
Munro and Newenham.

75S. *News Writing*—Methods and lesson plans for a news writing class in high school. Prerequisites, Jour. 3, 51, 101, 120. Two credits; spring.
Jones.

75T. *Oriental Studies*—For those who wish to give either separate courses on this subject or general courses—such as history, geography, art, literature, economics, and government—in which the Orient occupies, or should occupy, a place. This work may be continued in O.S. 190, 191, 192. Two credits; winter. Griffin.

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. Prerequisite, P.E. 162, 163, 164, at least five credits of which must be in residence. Two credits; autumn. Gross.

75W. *Piano Playing*—Survey of teaching material, with supervised practice. Prerequisite, Music 165, 166. Two credits; spring. Alderman.

75X. *Public Speaking*—Problems and methods in the organizations 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.

75Y. *Spanish*—Methods of teaching Spanish. Practice in the classroom. Prerequisite, Span. 101, 102, 103, 159. Two credits; spring.
Umphrey.

75Z. *Zoology*—For students preparing to teach zoology in high schools. Prerequisite, 20 hours in zoology. Two credits; winter. Guberlet.

II. Intermediate Courses; Upper Division and Graduate Credit

To be admitted to courses in this group (II) students must have junior standing and at least one course in education. Normal school graduates are qualified to enter.

101. *Educational Psychology*—Psychological basis of educational processes. Native endowment as the basis for learning; individual differences; habit formation; technique of learning, the learning curve, transfer of training; emotional and volitional behavior. Five credits; autumn, winter, spring. Bolton.

102. *Child Study*—Development of humanitarian and scientific interest in children; scope, methods, problems relating to education in the home, school and society. Great leaders in child study including Froebel, Pestalozzi, Hall, Dewey, Montessori, Goddard, O'Shea, and Baldwin. Three credits; autumn. Bolton.

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. *Problems of Adolescence*—Physical, intellectual, moral and social characteristics of adolescents, and the educative activities suited to the period of secondary school education. Five credits; winter and spring. Bolton.

107. *The Modern Psychologies and Education*—A study of the more important recent psychological theories in their relation to educational thought and practice. The psychological background of the various teaching plans, techniques and devices. Consideration will be given to the educational bearing of the several lines of psychological experimentation. Opportunity will be given for individual investigation in the various branches of high school instruction. For advanced undergraduates and graduates. Prerequisite, five hours of psychology or educational psychology. Three credits; winter. Powers.

109. *Psychology of High School Subjects*—A general consideration of the psychological factors involved in learning and teaching high school subjects. This course may very properly be taken as a precursor to Educ. 201. Prerequisites, Educ. 60 and 70 or equivalents. Three credits; autumn. Powers.

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 superintend-

ents and supervisors, and those interested in school administration. Four credits; autumn. 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; winter. Jessup.

133. *Elementary School Organization and Supervision*—How principals usually spend their time; actual and ideal ways of organizing and conducting the principal's work; the new concept of the official qualifications necessary; professional leadership; supervision of instructional community leadership; management of office routine; the selection of teachers; measuring results; child accounting; improvement of teachers; choice of textbooks; course of study, discipline and organization. Four credits; autumn. Jessup.

134. *The High School Principal*—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. *Administration and Supervision of Junior High Schools*—An intensive study of problems relating to organization, administration and supervision such as: buildings, grounds and equipment; selection, preparation and revision of curricula and courses of study; organization and administration of the extra class activities; units of organization; co-ordination with elementary and secondary units; the testing program; evaluation of pupils' achivement; educational and vocational guidance. Two hours of class work each week and one hour of field study. Three credits; winter. Draper.

140. *School Supervision*—Analysis of the problems and technique of the improvement of school work through the in-service education of teachers. Four credits; winter. Jessup.

145. *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, Rowntree, Soule.

146. *Extra-Class and Intramural Activities*—Historical development of these activities, values and objectives, classification, student participation, records and administrative problems. Lectures, personal investigations, surveys and class reports. Prerequisite, Educ. 60. Three credits; autumn. 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, predictions, placement. For advanced students and teachers only. 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.

162. *Junior High School*—A survey of the historical development of this new movement in American education as a basis for the discussion of its important features, functions and problems. Guidance, methods, curricula, supervision and extra-class activities will be emphasized. Lectures, personal investigations, surveys and reports. The course is organized to meet the needs of undergraduates and inexperienced teachers. Prerequisite, Educ. 60. Three credits; autumn. Corbally.

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, Educ. 60 and 70. Three credits; autumn. 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 per week to laboratory and field work in the public schools. Prerequisite, Educ. 60. Three credits each quarter; winter and spring. 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; the development of educational theories and practices since the Renaissance. Three credits a quarter; autumn, winter, spring. Bishop.

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. Postwar reorganization. Influence upon educational theories and practices in America. Four credits; winter. Jessup.

185. *Contemporary Experiments in Europe and America*—It is the purpose of this course to acquaint the student with the most recent developments of the new education in Europe and America. The philosophy of the progressive school movement and its relation to curricular changes and administrative organization will be considered. This course does not conflict with comparative education although much of the material deals with modern schools in Central Europe. Four credits; spring. 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.

190. *Introduction to Educational Measurements*—History and development of the use of tests and scales in education. Group intelligence tests, elementary statistical methods as applied to the handling of educational data, educational achievement or subject tests and scales. Lab. fee, $3. Three credits; autumn, winter, spring. Dvorak.

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, Educ. 190 or its equivalent. Lab. fee, $3. Three credits; winter. Dvorak.

III. Advanced 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 should have as prerequisite good courses in general psychology and in elementary educational psychology. Three credits; spring. Powers.

209-210, 211. *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; autumn, winter, spring. At least two quarters must be taken to receive credit. 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 educational 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; spring. Jessup.

231. *Seminar in Administration.* (Finance)—An intensive study of various methods of raising and distributing school revenues. Special consideration to needs in Washington. Five credits; winter. ————.

233. *Seminar in Administration.* (School Buildings)—This course is primarily for graduate students and school administrators. It deals with modern building plans and programs, and school building rating. The most modern types of elementary, junior high school and high school buildings will be considered. Three credits; autumn. Jessup.

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 class-room 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; winter, spring. Uhl.

245, 246, 247. *The Organization 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; autumn, winter, spring. ————, Jessup.

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.

270-271-272. *Problems in Modern Methods*—For advanced students. A critical evaluation of methods in examinations, grading, supervised study, the project, socialized recitation, problem method, assignment, laboratory procedure, etc. A seminar. Three credits each quarter; autumn, winter, spring. At least two quarters must be taken to receive credit. Williams.

287-288-289. *Seminar in Philosophy of Education*—An analysis, evaluation, and synthesis of the principles, data, and means of education. 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 all graduate students working for the master's and doctor of philosophy degrees in education and normally should be one of the first courses completed for these degrees. Five credits; autumn. Dvorak.

291-292. *Methods of Educational Research*—Practices and methods in carrying out and writing up research problems. 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, Kirsten, Loew; Associate Professor Shuck; Assistant Professors Hoard, G. S. Smith, Eastman, Lindblom.

101. *Direct Currents.* Short course in continuous current machinery, for non-electrical students, to be taken in connection with E.E. 102. Prerequisite, Phys. 98. Four credits; autumn, winter, spring. Smith, Eastman.

102. *Direct Currents Laboratory.* Continuous current machinery, for non-electrical students. To be taken with E.E. 101. Prerequisite, Phys. 98. Lab. fee, $4. Two credits; autumn, winter, spring. Lindblom, Smith.

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, Phys. 98. Four credits; autumn, winter. Lindblom, Hoard.

110. *Direct Currents Laboratory.* Direct current machinery. Prerequisite, Phys. 98. Lab. fee, $4. To be taken in connection with E.E. 109. Two credits; autumn, winter. Smith, Lindblom.

111. *Direct Currents.* Continuation of E.E. 109 in direct current machinery. Storage batteries. Regulation and control of direct current sys-

tems. To be taken in connection with E.E. 112. Prerequisite, E.E. 109. Four credits; winter, spring. Hoard, 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, Lindblom.

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. Shuck, Lindblom.

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.

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. 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 diaelectric 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, Lindblom.

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, Smith.

**Will be offered if a sufficient number of students elect the course.

164. *Alternating Currents Laboratory.* To be taken with E.E. 163. Prerequisite, E.E. 162. Lab. fee, $4. Four credits; autumn, winter. Shuck, 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; autumn, 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.

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, Loew.

ENGINEERING ENGLISH

For courses in Engineering English, see Department of English, courses 7, 100, 102, 103.

**Will be offered if a sufficient number of students elect the course.

ENGINEERING SHOPS

Associate Professor Schaller; Assistant Sullivan.

52. *Pattern Shop.* Designing and building wooden patterns and foundry flask equipment. Lab. fee, $2. One credit; autumn, winter, spring. Sullivan.

53. *Foundry.* Bench and floor moulding, use of moulding machines, core making, cupola practice, and electric melting. Lab. fee, $3. One credit; autumn, winter, spring. Sullivan, Schaller.

54. *Forge.* Forge practice, acetylene and arc welding, and heat treatment of steels. Lab. fee, $2. One credit; autumn, winter, spring. Schaller.

55. *Machine.* Elementary machine shop practice and management. 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, Millwrighting.* Prerequisite, Shop 55. Lab. fee, $2. One credit; autumn. Sullivan.

106. *Advanced Machine.* Advanced machine shop practice. 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, courses 7, 100, 102, 103.

ENGLISH

Denny Hall

Professors Padelford, Benham (on leave), Cox, Griffith, Orr, Taylor, Hughes; Associate Professors Milliman, Harrison, Moore; Assistant Professors Winther, Rahskopf; Instructors Windesheim, Eby, Ethel, Bird, Cornu, A. R. Conway; Lecturer Sperlin; Associates Lawson, Hall, Vickner, Kerrigan, Wagenknecht, Brown, Cederstrom, Nix, Gillette, Walters, Shephard, Childs, Butterworth, Okerlund, J. A. Conway, Blanchard; Assistants and Teaching Fellows.

Suggestions for Major Students

The major requirement in English is from 36-60 hours of which at least 50 per cent must be upper division courses. English 1 and 2 or their equivalent of composition are required but cannot be counted toward a major.

Lower Division Students. For those who intend to major in English, the freshman year should include *Composition* (1), *Introduction to Modern Literature* (73, 74), *Advanced Composition* (76, 77). The sophomore year

should include *Introduction to Poetry* (57), *Introduction to Shakespeare* (60), *Oral Reading of Literature* (79), and *Chaucer* (90). Those who take the combinations 73-76 and 74-77 in consecutive quarters are excused from English 2. For purposes of schedule the order of the sophomore courses may be varied.

Upper Division Students. At the conclusion of the senior year all major students are required to pass an examination in English. This examination will require a general knowledge of English and American literatures, a specialization in some branch of English study, and ability to write effectively. The examination will, however, be sufficiently flexible to allow the student to write in fields of his detailed study.

As preparation for this examination, the Department recommends one year course from each of the groups listed below as work supplementary to the lower division requirements mentioned above. These courses are taught in small classes to facilitate discussion and to increase contacts between teacher and student.

Group I	Old and Middle English Literature	(150, 151, 152)
	Shakespeare	(170, 171, 172)
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)

The above schedule is recommended, but adjustments in it may be made on approval of the department, provided that the student present a definite plan of English study.

The student who intends to major in English for a bachelor of arts in education degree or for a normal diploma should add to the above requirements four credits of the *History of the English Language* (117, 118, 119). The student who intends to minor in English for a B.A. in Education or for a normal diploma should complete *Literary Backgrounds* (64, 65), *Advanced Composition* (76, 77), *Introduction to Poetry* (57), *Introduction to Shakespeare* (60), *Oral Reading of Literature* (79), four credits of *History of the English Language* (117, 118, 119), and at least one year course recommended to majors above. Minors in English who take the combination 64-76 and 65-77 in consecutive quarters are excused from English 2.

1-2-3. *Composition.* Principles and practice of composition, with conferences for personal criticism. A grade of "A" in English 1 excuses a student from 2, if his instructor recommends it and the recommendation is approved by the instructor in charge of this course. Five credits for two quarters; autumn, winter, spring. For Fine Arts students, three credits for three quarters; autumn, winter, spring. Miss Lawson in charge.

4, 5. *Composition.* For students in forestry and fisheries. Students are required to repeat the course if their work is not of high quality. Three credits; autumn, winter, spring. Miss Lawson in charge.

7. *Elementary Composition.* A non-credit composition course required of students who fail in the examination for entrance into English 1, 4, or 100. No credit; autumn, winter, spring. ———.

9, 10. *Composition.* For students in pharmacy. Three credits, winter; two credits, spring. ———.

37. *Argumentation.* Primarily for students in the College of Busi-

ness Administration. Research, analysis, the use of evidence, and the discovery of fallacies. Five credits; autumn, winter, spring.
Rahskopf in charge.

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, English 38. Three credits; spring. Windesheim.

40. *Essentials of Speaking.* This course seeks to remove self-consciousness, to discover a method of research that will arouse positive convictions, 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 English 40. Delivery of speeches of different types before audiences when possible. May be taken for upper division credit by upper division students. Prerequisite, English 40. Fee, $.50. Three credits; autumn, winter, spring. Windesheim, 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.

51, 52, 53. *Advanced Composition.* Composition based upon models from current magazines. May be taken for upper division credit by upper division students. Prerequisite, English 1 and 2, 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. Prerequisite, English 1 and 2, 37, or 40. Two credits; autumn, winter, spring. ———.

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. Five credits; autumn.
Cornu.

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.

61, 62, 63. *Verse Writing.* Principles of versification with practice in verse writing. Prerequisite, English 1-2. Two credits; autumn, winter, spring. Hughes.

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, Eby, Cornu.

67, 68, 69. *American Writers.* For lower division students who intend to major in English. Two credits; autumn, winter, spring. Eby.

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. Credit for the combination 73-76 and 74-77 in consecutive quarters is a recognized substitute for English 2. Three credits; autumn, winter, spring. Milliman, Harrison, Cornu.

76, 77. *Advanced Composition.* For students who intend to major or minor in English. Credit for the combination 73-76 and 74-77 in consecutive quarters is a recognized substitute for English 2. Two credits; autumn, winter, spring. ———.

79. *Oral Reading of Literature.* For majors and minors in English. May be taken for upper division credit by an upper division student. Three credits; winter, spring. ———.

90. *Chaucer.* Selections from the Canterbury Tales. Not open to students who have had English 131. Three credits; autumn, winter, spring. ———.

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.

100. *Composition for Students in Engineering and Mines.* An intensive course in expository writing scheduled for 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.

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.

102. *Advanced Composition 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. Prerequisite, English 100. Three credits; autumn, winter, spring. Hall.

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 English 40. Three credits; winter, spring. Windesheim.

104, 105, 106. *Contemporary Literature.* Special studies in English and continental contemporary literature for advanced students. Three credits; autumn, winter, spring. Cox, Harrison, Winther.

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.

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.

127. *Milton and his Contemporaries.* Three credits; winter. Ethel.

131. *Medieval Literature: Chaucer.* Selections from the Canterbury Tales. Three credits; autumn. Ethel.

134, 154, 155. *English Literature:* 1516-1642. The non-dramatic prose and verse of the Renaissance and Reformation. Two credits: autumn, winter, spring. Benham.

*138. *Rhetoric of Public Speaking.*

139. *Forms of Public Address.* The principles of organization and persuasive appeal in the various forms of public address. Platform practice. Prerequisite, English 40. Three credits; spring. Rahskopf.

*140. *History of Public Speaking.*

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 or 131. Three credits; autumn, winter, spring. Griffith, Butterworth.

156, 157, 158. *Advanced Composition: Narration.* Two credits; autumn, winter, spring. Ethel.

161, 162, 163. *American Literature.* From the beginnings to 1870. Three credits; autumn, winter, spring. 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. Two credits; autumn, winter, spring. Benham, Ethel.

170, 171, 172. *Shakespeare.* Studies of the plays and poems of Shakespeare. Prerequisite, English 60, 70, 71, or 72. Three credits; autumn, winter, spring. Taylor, Moore.

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. Ethel.

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.*

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.

*Not offered in 1930-1931.

187. *Advanced Voice Problems.* A study of minor voice and speech defects with special attention given to diagnosis and remedy. A laboratory course. Prerequisite, English 43. Fee, $.50. Three credits; winter. Orr.

188. *Advanced Problems in Speaking.* Laboratory and research. Prerequisite, English 43. Fee, $.50. Three credits; spring. Orr.

189. *Interpretative Reading.* Training in the mental and vocal technique necessary for the oral interpretation of literature. Required of those who expect to teach English. English 43 offers valuable preparation for this course. Three credits; autumn, winter, spring. Orr, Rahskopf.

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, spring. Cornu.

*194. *Major Thesis.*

Teachers' Course. See Education 75H, 75I, 75J and 75X.

For courses in foreign literature taught in English, see Department of General Literature.

Drama

Denny Hall

After October 1, 1930, students of drama satisfy the requirements of the College of Liberal Arts and those of minors in the Department of English except that English 79 may be omitted. *In registering for courses listed below, use the word "Drama."*

Senior Examinations. After April 1, 1930, at the conclusion of the senior year, all major and minor students will be required to take examinations covering the entire field of study and practice in the department. Examinations will be both written and oral, and will be distributed over a period of one week.

6, 7, 8. *Fundamentals of Dramatic Art.* An introduction to the study of dramatic art, with emphasis on elementary interpretation, relaxation, pantomime. Three credits a quarter; autumn, winter, spring. Blanchard.

51, 52, 53. *Elementary Playacting.* Interpretation of standard and original plays. The plays done in the class will be presented before an audience in the laboratory theatre. Prerequisite, Drama 6, 7, 8. Lab. fee, $1. Three credits a quarter; autumn, winter, spring. Blanchard.

104, 105, 106. *Elementary Theatre Workshop.* Construction of actual stage settings, properties, costumes, models. Design, make-up, stage lighting. General theatre mechanics. Two hours lecture, four hours laboratory. Lab. fee, $3. Four credits a quarter; 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.

114, 115, 116. *Advanced Theatre Workshop.* Continuation of the elementary course. Students will be given charge of productions in the labora-

*Not offered in 1930-1931.

tory theatre. Four hours laboratory. Prerequisite, 104, 105, 106. Fee, $2. Two credits; autumn, winter, spring. Conway.

118, 119, 120. *Advanced Dramatic Interpretation.* Selected material is used as exercises in dramatic delivery and for the study of effectiveness in the reading of lines. Prerequisite, Drama 6, 7, 8. Three credits a quarter; autumn, winter, spring. Blanchard, A. R. Conway.

121, 122, 123. *Advanced Playacting and Directing.* A practical course in the arts of acting and directing. Standard and original plays are used as material. Students will direct plays under supervision in the laboratory theatre. The winter quarter will be devoted to acting and directing Shakespearean plays. All plays will be presented in the laboratory theatre. Prerequisite, Drama 51, 52, 53. Lab. fee, $1. Three credits a quarter; autumn, winter, spring. Blanchard, A. R. Conway.

127, 128, 129. *History of the Theatre.* The origin of theatre art. Physical structure of the playhouses. Evolution of stage machinery and wings. Masks and marionettes. The movements in the theatre. Lectures and required reading. Three credits a quarter; 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 a quarter; autumn, winter, spring. Hughes.

191, 192, 193. *Major Conference.* Individual conferences to correlate studies in the different divisions of the department. Each student meets the instructor once a week in conference. Open only to students who have an average of "B" or better in dramatic art courses at the beginning of the senior year. One to four credits, one credit for each of the four divisions of study: phonetics, interpretation and play production, technical, historical. No student may earn more than a total of four credits in the three courses. Autumn, winter, spring. Hughes in charge.

Educ. 75G. *Teachers Course.* A study of methods in teaching drama. Two-credits; autumn.

COURSES FOR GRADUATES ONLY

Courses having "Graduate" in the title are intended for first year graduate students.

*201, 202, 203. *Introduction to Graduate Study.*

204, 205, 206. *Graduate Chaucer.* The Works of Chaucer and the problems of Chaucerian scholarship. Two to five credits; autumn, winter, spring. Griffith.

*207. *English Literature from Chaucer to Spenser.*

208, 209, 210. *Graduate Pre-Shakespearean Drama.* Two to five credits; autumn, winter, spring. Taylor.

211, 212, 213. *Seminar in Sixteenth Century Literature: Spenser.* Four or five credits; autumn, winter, spring. Padelford.

214, 215, 216. *Graduate Public Speaking.* Fee $1. Two to five credits; autumn, winter, spring. Orr.

217, 218, 219. *Seminar in Shakespeare.* Problems in the study of Shakespeare and his contemporaries. Two to five credits; autumn, winter, spring. Taylor.

*Not offered in 1930-1931.

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. Two to five credits; autumn, winter, spring. Benham.

224, 225, 226. *Graduate American Literature.* Two to five credits; autumn, winter, spring. Moore.

227, 228, 229. *Seminar in American Literature.* For advanced graduate students in American Literature. Two to five credits; autumn, winter, spring. Harrison, Eby.

230, 231, 232. *Graduate Old English.* Anglo-Saxon grammar; readings in Old English prose and poetry; Beowulf. Three credits; autumn, winter, spring. Butterworth.

233. *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.* Two to five credits; autumn, winter, spring. Cox.

*241, 242, 243. *Graduate Victorian Literature.*

244, 245, 246. *Graduate Eighteenth Century Literature.* Two 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

[A Department in the College of Science]

Professor ————; *Instructor Schultz.*

101, 102. *Ichthyology.* Structure, classification and natural history of fishes. Prerequisites, Zool. 1-2. Two laboratory periods and three lectures a week. Lab. fee, $4. Five credits a quarter; autumn, winter. Schultz.

107. *Aquatic Animals other than Fish.* The natural history and eco-

*Not offered in 1930-1931.

nomic value of such aquatic animals as whales, seals, oysters, clams, crabs, etc. Prerequisite, Zool. 1-2. Three credits; spring. Schultz.

111, 112, 113. *Aquarium Management.* The study and care of aquatic animals and plants in balanced and running water aquaria. Prerequisite, Zool. 1-2. One lecture and three laboratory periods a week. Lab. fee, $3. Three credits a quarter; winter and spring. ————.

115. *Economic Fishery Resources.* Fishery resources of the North American and Eurasian continents, and adjacent seas; their development and the governmental policies of conservation. Five credits; autumn. ————.

120. *Exploration of the Sea in its Relation to Fishes.* The influence of various factors and conditions upon the food and life of fishes in the sea. Prerequisites, Zool. 1-2, Fish. 101, 102. Three credits; winter. ————.

131, 132, 133. *Fish Culture.* Developmental history and artificial propagation of economic fishes. Prerequisites, Fish. 101, 102. Two credits a quarter; autumn, winter, spring. ————.

154. *Diseases of Fish.* Nature and causes of disease in fish. Prerequisite, Zool. 1-2. Three lectures and two laboratory periods. Lab. fee, $4. Five credits; autumn. Guberlet.

157. *Methods in Ichthyology.* The application of statistics in a study of the life history of fishes. Prerequisites, Fish. 101, 102 and Math. 13. Three laboratory periods and two lectures. Lab. fee, $3. Five credits; autumn. Schultz.

165, 166, 167. *Elementary Problems in Fisheries.* Students will be assigned problems to be worked out under the direction of an instructor in the department. Prerequisites, Fish. 101, 102, 111, 112. Lab. fee, $5. Five credits; any quarter. Staff.

175. *Advanced Ichthyology.* Structure and classification of fishes. Prerequisites, 101, 102. Lab. fee, $4. Five credits; spring. Schultz.

190. *History of Fisheries.* History of Atlantic, Pacific, and the inland fisheries from early to modern times. Three credits; spring. ————.

195, 196, 197. *Seminar.* Reports and discussions of current fisheries literature. Two credits; any quarter. Staff.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Research Problems.* Students capable of carrying on independent investigations will be assigned problems after consultation with an instructor in the department. Lab. fee, $1 per credit hour. Any quarter. Staff.

FORESTRY AND LUMBERING

Anderson Hall

Professors Winkenwerder, Kirkland Grondal; Assistant Professors Alexander, Brandstrom; Instructor Harrar.

1a, 1b, 1c. *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, and spring. Forestry 1a is repeated in the spring quarter. Harrar.

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; spring or winter. 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. Grondal and Harrar.

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. Brandstrom.

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.* Physical and chemical properties of woods and their relation to commercial uses. Manufacture and testing of plywood and component materials. Prerequisites, For. 10-11, 158, 188, Chem. 1, 2, 111. Three lectures and two laboratory periods. Five credits; spring. Grondal.

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. Harrar.

105. *Wood Preservation.* Nature of decay of timber; methods and economics of preservation. Laboratory work with the college treating plant and reports on local creosoting plants. Required of juniors and graduates. 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. Required of sophomores. Prerequisite For. 4. Three credits; winter. Winkenwerder.

119. *Forest Administration.* Objects, principles and methods of administering private and public forests and forest industries. Four credits; spring. Kirkland.

*121. *Silvics.*

Add Wtr 31. *122. *Silviculture.* - 3 credits.

123. *Forest Nursery Practice.* Preparation of nursery seed beds; vegetative propagation; transplanting. One lecture, one laboratory. Two credits; spring. Kirkland.

*124. *Regional Silviculture.*

125. *Technique of Silviculture.* Silvicultural research by students. Prerequisite, For. 121. Lab. fee, $1. Five credits; autumn. Alexander.

126. *Forest Economics.* Forests of the United States, their uses and relation to other industries and resources. Statistics of production and consumption. Required of juniors or seniors in forestry and open to students in other departments. Prerequisite, B.A. 1. Three credits; winter. Kirkland.

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 3-hour laboratory period. Lab. fee, $2. Three credits; winter. Brandstrom.

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. Lab. fee, $2. 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 in construction. Required of juniors and graduates. Prerequisites, For. 10-11, and 10 hours of chemistry. Five credits; autumn. Harrar.

160, 161, 162. *Forest Investigation.* The object of this course is to enable students to prepare themselves for work in certain special fields for which the College of Forestry offers no regular courses, such as grazing, city forestry, tree surgery, forest recreation, etc. Credits to be arranged any quarter. Instructor assigned according to nature of work. Registration in this course subject to the approval of the dean of the college. Lab. fee, $3. Staff.

163. *Forest Mensuration.* Research methods in forest mensuration. Prerequisite, For. 62. Lab. fee, $2. Five credits; winter. Alexander.

*Not offered in 1930-1931.

170. *Advanced Milling and Marketing.* Sawmill design and a detailed study of special problems in sawmill operation and management. Five credits; spring. Grondal.

171. *Forest Geography.* Advanced dendrology. Silvicultural regions, their relation to regional industrial development and general problems of lumbering and management. Three credits; spring. Winkenwerder.

172. *Wood Fibres.* Classification and identification of wood fibres used in industry. Prerequisite, For. 10-11. One lecture. Chiefly a laboratory course. Five credits; winter. Harrar.

173. *Microtechnique in the Study of Wood.* Sectioning of woody tissues, staining and mounting for microscopic study; photomicrography. Prerequisite, For. 10-11. A laboratory course. Lab. fee, $3. Five credits; autumn. Harrar, Grondal.

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; winter. 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. Brandstrom.

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.

190. *Advanced Wood Preservation.* Continuation of For. 105. Design, construction and technical operation of wood preserving plants. Methods of analysis and evaluation of wood preservatives. Required of all students specializing in forest products. Lab. fee, $2. Five credits; winter. 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. Brandstrom.

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 3-hour laboratory periods per week. Eight credits; spring. Brandstrom.

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 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. Four credits; winter. Lab. fee, $3. Kirkland.

199. *Project Report.* Investigation of a specific problem in forestry in any selected field. Hours and credits to be arranged upon consultation with instructor in whose field problem lies, with approval of dean. Open only to seniors. Any quarter. Staff.

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, 209. *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; autumn, winter. Kirkland, Harrar.

213, 214, 215. *Research.* Ample opportunity is offered for advanced research in any of the special phases of forestry. Credits to be arranged; any quarter. Instructors assigned according to nature of work. Lab. fee, $3. 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 Collier, Hawthorn, Van Horn, Farquharson; Instructors Chittenden, Smith, Jacobsen, Rowlands, Eastman, Tymstra, Wassberg, Moritz.

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 and fisheries. Lettering, use of instruments, orthographic projection, working drawings and tracings. Lab. fee, $2. Three credits; winter, 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 the dynamic problems. Student is assisted in orienting himself in his engineering work. Prerequisite, high school physics. Three credits; autumn, winter, spring. Wilcox, Farquharson.

12. *Engineering Problems.* Continuation of the work in G.E. 11, most of the time being devoted to statics and mechanics of materials. Prerequisites, G.E. 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, courses 7, 100, 102, 103.

GENERAL LITERATURE

Denny Hall

Committee in charge—*Dean Thomson; Professor Benham; Associate Professors Stone, DeVries; Assistant Professor Griffin.*
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 hours 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 Professor Seeman; 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.

LOWER DIVISION COURSES

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 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. Not open to students who have had Geol. 1b. 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 hours of geology or Zool. 1 and 2. Lab. fee, $2. Not open to students who have had Geol. 2. Five credits; spring. Weaver.

UPPER DIVISION COURSES

*100. *Structural and Dynamical Geology.*

*101. *History of Geology.*

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. 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.* The physical regions of the eastern 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.

*113. *Physiography of the Western United States.*

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. Not open to students who have had Geol. 21. Lab. fee, $2. Five credits; spring. Goodspeed.

122. *Field Methods.* Registration only after consultation with the instructor. Maximum 15 credits. Each quarter. Weaver.

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 nonmetallic minerals, including petroleum, coal, structural materials, etc., their

*Not offered in 1930-1931.

areal distribution, production and uses. Lectures and discussions of papers. Prerequisite, five hours 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 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.

GRADUATE COURSES

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 combinations:

Geography 1 and 11.

Geography 1 and 103 or 104.

Geography 1 and Geology 1 or 6.

For students in business administration, Bus. Admin. 7, Geography 102

and 104 or 105 are suggested; for students in Oriental Studies, Geography 1 and 103; and for students in Education, Geography 1 and Education 75O.

LOWER DIVISION COURSES

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 and spring. Seeman.

Geographic Background of Industry. (See Bus. Adm. 7.) Renner, Martin, Seeman.

11. *Weather and Climate.* Weather elements and controls, causes and effects of atmospheric conditions; principles and methods of weather forecasting and use of instruments. Lab. fee, $1. Five credits; winter. Renner.

UPPER DIVISION COURSES

101. *Principles of Geography.* Same as Geog. 1 but with additional work and readings. 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. Martin.

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. Prerequisite, Geog. 1 or 11 or Bus. Ad. 7, or one course in Oriental Studies. Lab. fee, $1. Five credits; winter. Martin.

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. Seeman.

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. Martin.

*106. *Geography of Africa and Australasia.*

111. *Principles of Meteorology.* Same as Geog. 11 but with additional work and readings. Prerequisite junior standing. Lab. fee, $1. Five credits; winter. Renner.

*Not offered in 1930-1931.

*114. *Oceanography.*

115. *Climatology.* A careful study of the world's climates; broader aspects of climatic controls and distribution; the hygienic and economic consequences of climates; a consideration of the chief systems of climatic classification which have been proposed. Three credits; autumn. Renner.

*116. *Economic Geography of Washington.*

*150. *Cartography.*

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 graduation. Hours to be arranged. Five credits; autumn, winter, spring. Renner, Martin, Seeman.

COURSES FOR GRADUATES ONLY

200. *Advanced Research Work in Geography.* Credit and hours to be arranged. Autumn and winter. Staff.

203. *Research in the Geographic Problems of Asia.* Credit and hours to be arranged. Spring. Martin.

211. *Research in Meteorology and 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 Educ. 750. Renner and Seeman.

GERMANIC LANGUAGES AND LITERATURE

Denny Hall

Associate Professor Eckelman; Assistant Professor Groth; Lecturer Meisnest; Associates Wesner, Terzieff, Ankele.

Requirements for a departmental major: at least 35 hours in the department 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 departmental 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 specialized 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.

*Not offered in 1930-1931.

3. *First Year Reading.* Reading of modern prose, conversation, composition, 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. Prerequisite, Ger. 5 or 10; Ger. 3 Grade A, or on consent of instructor. Three credits; winter. Terzieff.

7. *Second Year Rapid Reading.* Modern prose, vocabularly 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 review with emphasis on syntax, simple conversation. Prerequisite as for German 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.*

103, 104, 105. *Recent Writers.* The best prose and dramatic literature adapted to rapid reading. Representative of German middle class and industrial life. Discussion, oral and written reports. Prerequisite, three years high school or eight credits second year work in college. Three credits; autumn, winter, spring. Groth, Wesner, Ankele.

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. Wassermann, 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 work. Three credits; winter. Meisnest.

114, 115, 116. *Upper Division Scientific German.* Scientific essays, monographs, technical periodicals. Each student does private reading in his own field

*Not offered in 1930-1931.

under guidance of the instructor and major professor. Conferences. Prerequisite, 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.*

*136, 137, 138. *Modern Drama.*

139, 140. *Studies in German Literature.* From the best prose and dramatic works after Schiller's time. An introduction to literary movements. Class reading and assigned topics. Prerequisite, Ger. 100 or equivalent. Three credits a quarter; autumn, spring. Ankele, Eckelman.

*141. *History of German Literature.*

142. *Lyrics and Ballads.* Goethe. The Romanticists. Uhland, Heine, Mörike, Storm. Schiller's Ballads. Class reading and assigned topics. Prerequisite, Ger. 100 or equivalent. Three credits; winter. Eckelman.

*150, 151. *Lessing.*

*153. *Goethe's Dramatic Works.*

180, 181, 182. *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 per 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. Three credits; spring. Eckelman.

*256, 257, 258. *Gothic.*

*259, 260, 261. *Old Saxon.*

Teachers' Course in German. See Educ. 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 1930-1931.

HISTORY

Denny Hall and Philosophy Hall

Professors Meany, Richardson, McMahon; Associate Professor Lucas; Assistant Professors Creer, Dahlin, Quainton; Instructor Dobie; Associate Buchanan.

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, 184-185; Sociology, 1 or 150; Zoology, 16.

II. *Language and Literatures.* English 64, 65, 66, or 134, 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 127, 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 153 or 185, 186 (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 11).

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 hours 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

1-2, Medieval and Modern, ten credits, required.

Choice between 143, 144, 145, Advanced United States, nine credits, or 71-72-73, Ancient History, nine credits, or 131, Europe since 1870, five 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, Buchanan.

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. Richardson.

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.

*102. *Greek Federal Leagues: Their History and Institution.*

*103. *The Roman Republic.*

104. *The Roman Empire from Augustus to Justinian.* Three credits; spring. Creer.

105-106-107. *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. Pre-law sophomores who elect this course and have not taken 5-6 are required to take Hist. 108-109-110. Three credits a quarter; autumn, winter, spring. Richardson.

108-109-110. *English Political History, Pre-law.* Open only to pre-law sophomores and majors in political science, economics and history who are taking Hist. 105-106-107. All pre-law sophomores who are taking 105-106-107 and who have not taken 5-6 or are not taking it, are *required* to take this course. Two credits a quarter; autumn, winter, spring. Richardson, Buchanan.

111. *Greek Political Institutions.* Three credits; winter. Creer.

*112. *Medieval Civilization: The Dark Ages.*

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.

*118. *Economic History of Europe from the Roman Empire to the Industrial Revolution.*

*119. *Economic History of Europe Since the Industrial Revolution.*

*Not offered in 1930-1931.

*121-122-123. *Prussia and Northern Europe in the 17th and 18th Centuries.*

125. *Great European Treaties,* 1453-1878. Prerequisite, Hist. 1-2. Five credits; spring. Quainton.

129. *The French Revolution and Napoleonic Era.* Prerequisite, Hist. 1-2. Five credits; winter. Quainton.

130. *Europe* 1814-1870. Prerequisite, Hist. 1-2. Five credits; spring. Quainton.

131. *Europe Since* 1870: *The War and its Background.* Historical background, fundamental causes and progressive development of events and issues in the world war. Five credits; spring. Richardson.

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.

*Not offered in 1930-1931.

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. *British Empire since* 1750. (Not open to students who have had Hist. 81.) Five credits; autumn. Dobie.

182. *England in the 19th Century.* Important social, religious, intellectual, economic developments. Growth of democracy, changes in political life. Five credits; spring. Dobie.

Teachers' Course in History. See Educ. 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.

*215-216-217. *Seminar in English History.*

218-219-220. *Seminar in European History: Pre-war.* Two credits a quarter; autumn, winter, spring. Richardson.

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 Professor Denny; Assistant Professors Payne, Bliss, Rowntree, Dresslar, Rivers; Instructors Terrell, Stephenson.

(For curricula in Home Economics see College of Science Bulletin.)

Food Selection and Preparation. Courses 1, 4, 5, 9, 116, 120, 121, 183, 200.

Nutrition. Courses 2, 103, 104, 105-106, 107-108, 190, 191, 204, 205, 206.

Household Sanitation, Furnishings, Administration. Courses 3, 43, 109, 143, 144, 145, 148, 203, 245.

Textiles and Clothing. Courses 8, 25, 101, 102, 112-113, 127, 130, 131, 133, 135, 188, 207, 208, 209, 210, 211, 212.

Institutional Management. Courses 122, 123, 124, 125.

Home Economics Education. Courses 7, 111, 202, Educ. 75NA, 75NB.

*Not offered in 1930-1931.

1. *Cookery.* General elective for non-home economics majors. Study of marketing, cookery, meal planning and service. Laboratory work to supplement Phys. Educ. 8 and 9. Three 2-hour periods, recitation and laboratory work. Lab. fee, $6. Three credits; spring.

*2. *Elements of Nutrition.*

*3. *Elements of Home Management.*

4. *Food: Selection and Preparation.* Credit for cookery in high school exempts students from this course. Three 2-hour periods, recitation and laboratory work. Lab. fee, $6. Three credits; autumn, spring. Stephenson.

5. *Food: Selection and Preparation.* A study of food materials; composition, cost and market conditions as a basis for selection. Principles of food preparation and practice in cookery of such food materials as cereal products, vegetables, fruit, dairy products, meat and fish. Prerequisites, H.E. 4, Chem. 1-2, Physiology 7. Two lectures and three 2-hour periods, recitation and laboratory work. Lab. fee, $6. Five credits; autumn, winter, spring. Dresslar.

7. *Home Economics Survey.* Introduction to college work, opportunities offered by the University. The place of home economics, its history, objectives, professional opportunities. Related subjects. Personal accounts and budgets. Two credits; autumn, spring. Raitt.

8. *Clothing.* Construction of garments requiring hand and machine sewing. Study of materials and design. Comparison with ready-made clothing. Credit for high school clothing exempts students from this course. Three 2-hour periods, recitation and laboratory work. Lab. fee, $2. Three credits; autumn. Payne.

9. *Nutrition for Hospital Students.* Composition and nutritive value of foods; food preparation; physiological needs in relation to food. Open to student nurses only. Two lectures, one hour quiz and three 2-hour periods, recitation and laboratory practice. Lab. fee, $6. Six credits; autumn, winter, spring. Bliss, Stephenson.

25. *Textiles and Clothing.* Comparative values in all types of clothing and household textiles. Hygiene, care and cost of clothing. Two lectures and three 2-hour periods, recitation and laboratory work. Lab. fee, $3. Five credits; autumn, winter, spring. Denny.

43. *Home Sanitation.* Selection, care and use of equipment. Cleaning and renovation of the materials of the household. Laundering, relation to textiles, equipment, practice. Efficiency studies. Three 2-hour periods, recitation and laboratory work. Lab. fee, $2. Three credits; autumn, winter. Stephenson.

Health Education. (See P.E. 8, 9.) Principles of food and nutrition for various age groups. Sources of material and a study of the application of scientific principles. One lecture a week for two quarters or two lectures for one quarter. Autumn, winter, spring.

P.E. 8. One lecture per week. One credit, $.50. Rivers, Stephenson.

P.E. 8, 9. Two lectures per week. Two credits. $.50. Rivers, Stephenson.

101, 102. *Needlecraft.* History of lace and needlecraft. Application of principles of design to problems in needlework related to dress and house furnishings. Prerequisites, H.E. 8 and P.S.D. 9. Two 2-hour periods, recitation and laboratory work. Lab. fee, $2. Two credits a quarter; autumn, winter. Denny.

*Not offered in 1930-1931.

103. *Nutrition*: *Elementary Human Nutrition and Diet for the Sick.* For graduate nurses. Three lectures, two 2-hour laboratory periods. Recitation and laboratory work. Lab. fee, $6. Five credits; autumn.

104. *Nutrition.* A study of the value of each food material, essentials in the diet. Diet as a factor in the maintenance of health. Open to men only. Of special interest to house managers, pre-medical students, athletes, and men in the colleges of mines, forestry, fisheries, and the department of military training. Lecture and discussion. Two credits; spring. Rowntree.

105-106. *Nutrition*: *Elementary. Dietetics—Normal Human Nutrition and Diet for the Sick.* For nurses, social service students and those wishing to obtain practical knowledge of nutrition as a part of a liberal education. Prerequisites, H.E. 4, Chem. 1-2, Physiology 7. Three lectures, two 2-hour periods, recitation and laboratory work. Lab. fee, $6. Five credits a quarter; winter, spring. Rowntree.

107-108. *Nutrition*: *Dietetics—Principles of Human Nutrition.* Nutritive value of foods, normal and specific physical requirements at different ages, metabolism, food habits, group feeding problems. For teachers of home economics and those who will enter professions related to food and nutrition. Prerequisites, H.E. 5, Chem. 135-136. Pre-medical students, chemistry and physiology majors may enroll with instructor's consent. Three lectures. Two 2-hour periods, recitation and laboratory work. Lab. fee, $6. Five credits a quarter; autumn, winter. Rowntree.

109. *Elements of Home Economics.* Service course for students training for social service. Consideration of household budgets, elements of nutrition and home sanitation. Five credits; winter. Raitt.

111. *Child Care and Development.* Heredity and eugenics. The psychology of children of pre-school age; physical care; hygiene of clothing. Prerequisites, Psych. 1, Nursing 5, H.E. 25. Prerequisite or parallel, H.E. 105 or 107. A preferred elective for majors in home economics. Field work and excursions on Saturdays. Lab. fee, $3. Three credits; spring. Kincaid, S. Smith, Denny.

112-113. *Clothing*: *Costume Design and Construction.* Principles of design applied to dress and accessories. Practice in selection and construction. Prerequisite, H.E. 8 and P.S.D. 9. Five 2-hour periods, recitation and laboratory work. Lab. fee, $3. Five credits a quarter; autumn and winter; winter and spring, respectively. Payne.

116. *Food*: *Selection and Preparation.* Continuation of H.E. 5. A study of batters and doughs, meal planning and table service. Two lectures and three 2-hour periods, laboratory practice and recitation. Lab. fee, $6. Five credits; autumn, winter, spring. Dresslar.

120. *Food*: *Advanced Food Preparation.* Finer processes in technique with emphasis upon esthetic values. Contribution of various countries to the art of cookery. Food customs and their significance. A survey of the literature of the subject. Laboratory practice, meal service and catering. Prerequisite, 116. Two 3-hour periods. Lab. fee, $6. Three credits; autumn. Dresslar.

121. *Food*: *Large Quantity Cookery.* Preparation of food in large quantities for cafeterias, tea rooms, dormitories, hospitals, and camps; institutional dietaries and menu planning. Prerequisite, H.E. 116. Laboratory practice. Two lectures, three 3-hour laboratory periods, recitation and laboratory work. Lab. fee, $3. Five credits; winter, spring. Terrell.

122. *Institutional Buying.* A study of marketing, purchase of food materials for institutions, floor plans, equipment and supplies for food service

rooms. Prerequisites, H.E. 5, 116, 106 or 108, 124. Three recitations. Three credits; winter. Terrell.

123. *Institutional Management.* Problems of various types of institutions, relating to their organization and operation, relation to the state and community, employment of help. Three lectures. Prerequisites, H.E. 5, 116, 107-108, and 122. Three credits; spring. Raitt.

124. *Practice Work, I.* Eight hours a week in University dining halls, under supervision of instructor. One hour conference a week. Two 4-hour periods or one full day should be arranged in the schedule. Prerequisites, H.E. 116, 106 or 108, Econ. 1. Three credits; autumn, spring. Terrell.

125. *Practice Work II.* Eight hours a week observation and practice in various institutions under supervision of the instructor. One hour conference a week. Two 4-hour periods or one full day should be arranged in the schedule. Prerequisites, H.E. 116, 106 or 108, Econ. 1, H.E. 124. Three credits; winter, spring. Terrell.

127. *Non-Textiles.* Merchandise from non-textile sources; paper, leather, rubber, fur, and metals. Raw materials, sources of supply, manufacture, methods of judging. Classification of stores' departmental stock. Three recitations. Lab. fee, $3. Three credits; winter. Denny.

133. *Clothing: Costume Design.* Development of fashion from ancient times to the present with emphasis upon the best art periods. Adaptation to the present mode. Prerequisites, H.E. 113, P.S.D. 169. Three 2-hour periods, two lectures. Lab. fee, $3. Five credits; spring. Payne.

*135. *Millinery.*

143. *Home Furnishing.* Application of structural art principles to choice and arrangement of household furnishings. Comparative costs. Prerequisite, P.S.D. 9. Three lectures and Saturday excursions. Lab. fee, $3. Three credits; winter, spring. Denny.

144-145. *Household Economics.* Economics of the household, personal and household accounts and budgets. Organization of the household. Scientific management. 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, hospitality and meals. Two credits; autumn, winter, spring. Rivers.

160, 161. *Clothing: Advanced Clothing Construction.* Laboratory practice on a commercial basis. Experience in costume shops. Prerequisites, H.E. 113, P.S.D. 9 and 169. Five 2-hour periods, recitation and laboratory work. Lab. fee, $3. Three credits a quarter; winter and spring. Payne.

183. *Food: Experimental Cookery.* Attention is given to acquiring correct technique in scientific investigation of problems in connection with food. Prerequisite, H.E. 116. Three 2-hour periods, recitation and laboratory work. Lab. fee, $3. Three credits; spring. Dresslar.

188. *Advanced Textiles.* Survey of textile materials in local market with intensive study of a type fabric. Prerequisite, H.E. 25, Econ. 1. Two 2-hour periods, recitation and laboratory work. Lab. fee, $3. Two credits; autumn. Denny.

190. *Nutrition: Nutrition of Children.* Work centers around the University Co-operative Child Nutrition Service. Consultation with physicians

and instructor, follow-up case work in homes of the children and visits to institutions for child care. Prerequisites, H.E. 105 or 107. Two hours recitation, three hours laboratory period, three hours field work. Open to graduate and advanced undergraduate students. Lab. fee, $2. Four credits; winter, spring. Rowntree.

191. *Nutrition: Dietotherapy.* Considerations of particular dietary needs of the sick and convalescent. Relation of certain disorders to nutrition. The function of nutrition as a curative and preventive factor in disease. Prerequisite, H.E. 107. Open to graduates and advanced undergraduates. Three lectures and recitations, one laboratory period. Visits to hospitals. Lab. fee, $4. Four to five 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 Educ. 75NA, 75NB.

COURSES FOR GRADUATES ONLY

200. *Advanced Experimental Cookery.* Investigation of local food products. Prerequisites, H.E. 5, 116, 107. Lab. fee, $2 per credit hour. Three credits. Dresslar.

202. *Seminar.* The present status of home economics education. Prerequisites, 30 credits in home economics. Credits to be arranged; autumn. Raitt.

*203. *Research.*

204, 205, 206. *Research in Nutrition.* Animal experimentation on some special problem, or library research. Open to graduate students. Prerequisites, H.E. 107-108. Chemistry and Physiology majors may take this course with consent of instructor. Hours and credits to be arranged. Lab. fee, $2 per credit hour; autumn, winter, spring. Rowntree.

207, 208, 209. *Research in Textiles.* Prerequisites, H.E. 25, Econ. 1. Credit to be arranged. Lab. fee, $1 per credit hour; autumn, winter, spring. Denny.

210, 211, 212. *Research in Costume Design.* Prerequisites, H.E. 112-113, 133. Credit to be arranged; autumn, winter, spring. Payne.

214-215. *Graduate Seminar.* Assigned readings and reports dealing with recent contributions to nutrition. Prerequisites, H.E. 107-108. Pre-medical students, chemistry and physiology majors may enroll with instructor's consent. Three to six credits. Hours to be arranged. Rowntree.

220, 221, 222. *Research in Institutional Management.* Problems dealing with food service and housing units in various types of institutions. Prerequisites, H.E. 121, 122, 123, 124, 125 or equivalent. Credit 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.

*Not offered in 1930-1931.

JOURNALISM

Commerce Hall

Professor McKenzie; Associate Professor R. W. Jones; Laboratory Director Kennedy; Assistant Professor Christian; Instructor Wintermute; Teaching Fellow Stewart.

1, 2. *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 a quarter; autumn, 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.

61. *The Smaller Newspaper.* Editorial, advertising, and circulation problems peculiar to the community weekly. Not open to freshmen. Required in the sophomore year of pre-journalism majors. Lab fee, $1. Three credits; spring. Jones.

90, 91, 92. *Current Events.* Current state, national and world movements. One quarter required of majors in journalism. Lab. fee, $1 a quarter. One credit a quarter; autumn, winter, spring. Jones, Christian, 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.

104. *Newspaper Administration.* Newspaper organization and management. Prerequisite, Jour. 51. Lab. fee, $1. Two credits; spring. Wintermute.

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. 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. Jones.

133. *Advertising Typography.* Type families; application of type; advertising type units; type problems. Prerequisite, Jour. 3. Lab. fee, $2. Five credits; spring. 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.* Required of majors in journalism. Prerequisite, Jour. 51. Lab. fee, $2. Five credits; autumn. Jones.

140. *The Business Office.* 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.* Literary and dramatic criticism; the sports page; financial, marine and business reporting; political reporting; foreign correspondence. Required of seniors in journalism. Prerequisite, Jour. 101. Lab. fee, $2. Three credits; spring. Staff.

145. *Law of the Press.* Required of majors in journalism. Prerequisite, Jour. 51. Lab. fee, $1. Three credits; spring. Jones.

150. *Editorial Writing.* Required of majors in journalism. Prerequisite, Jour. 101 and 120. Lab. fee, $2. Three credits; spring. Jones.

160. *Trade Journalism.* Prerequisite, Jour. 51. Lab. fee, $2. Five credits; winter. Jones.

171-172. *Magazine and Feature Writing.* Practice in writing special newspaper and magazine articles; study of current magazines and newspaper supplements. Articles are graded according to their probable marketability. Lab. fee, $3 a quarter. Two credits a quarter; winter, spring. Wintermute.

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.

COURSES FOR GRADUATES ONLY

201. *Propaganda.* Crystallization of public opinion. Advanced students only. Prerequisites, Psych. 117, Soc. 201 (except by special arrangement). Two credits; spring. McKenzie.

225, 226, 227. *Advanced Short Story.* Prerequisite, Journalism 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.

228. *Problems in Journalism.* A graduate course to which mature senior students may be admitted by special permission. 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. Two to four credits; 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 Bissett, Lantz, Goodner, Ayer, O'Bryan, Nottelmann, Martin, Carkeek, Mechem; Lecturers Beardsley, Harris.

FIRST YEAR

All first year courses required.

100. *Agency.* Wambaugh's Cases, 2nd Ed. Five credits; spring. Ayer, Mechem.

103-104. *Contracts.* Corbin's Cases. Five credits a quarter; autumn and winter. Lantz, Mechem.

106-107. *Criminal Law and Procedure.* Derby's Cases, 2nd Ed., supplemented by Washington Criminal Code and Cases. Three credits a quarter; autumn and winter. O'Bryan.

108-109. *Pleading.* Cook and Hinton's Cases on Common Law Pleading, and Sunderland's Cases on Code Pleading, and Washington Code and Cases. Three and five credits respectively; winter and spring. Goodner.

115. *Property I.—Personal.* Bigelow's Cases. Three credits; autumn. Carkeek, O'Bryan.

116. *Property II.—Real.* Bigelow's Cases. Five credits; spring. Carkeek, Mechem.

117-118. *Torts.* Ames' and Smith's Cases, Pound's Ed., Rev. by Beale. Four credits a quarter; autumn and winter. Ayer, Mechem.

SECOND YEAR

110. *Persons.* Woodruff's Cases. Three credits; winter. Goodner.

121. *Legal Ethics.* Costigan's Cases. Two credits; autumn. Goodner.

125-126. *Equity.* Cook's Cases (one volume edition). Five credits a quarter; autumn and winter. Nottelmann.

128. *Damages.* Crane's Cases on Damages, supplemented by Washington cases. Three credits; spring. O'Bryan.

129, 130, 131. *Evidence.* Hinton's Cases. Three credits a quarter; autumn, winter and spring.

134, 135, 136. *Legal Bibliography; Use of Law Books;and Brief-Making.* Two credits a quarter; 136, three credits; autumn, winter, spring. *Winter quarter required of all second-year students.* Beardsley.

137. *Negotiable Instruments.* Smith and Moore's Cases. Three credits; winter. Carkeek

138. *Quasi-Contracts.* Woodruff's Cases. Three credits; spring. Lantz.

139. *Property III.* Aigler's Cases. Five credits; autumn. Carkeek.

142-143. *Public Utilities.* Smith and Dowling's Cases. Three credits a quarter; winter and spring. Nottelmann.

146-147. *Sales.* Woodward's Cases, 2nd Ed. Three credits a quarter; winter and spring. Ayer.

159. *Wills.* Costigan's Cases, 2nd Ed. Three credits; autumn. Goodner.

179. *Partnership.* Gilmore's Cases, supplemented by Washington Cases. Three credits; spring. O'Bryan.

181. *Landlord and Tenant.* Washington Cases. Three credits; spring. Carkeek.

THIRD YEAR

133. *Insurance.* Vance's Cases. Three credits; winter. Lantz.

*145. *Irrigation Law.*

*153. *Property IV.* Kales' Cases on Future Interests.

*156. *Bankruptcy.* Holbrook and Aigler's Cases (2nd Ed.).

158. *Mining Law.* Costigan's Cases. Three credits; winter. O'Bryan.

†161. *Procedure IV.* Procedure in civil actions in the Superior Court of Washington. Three credits; autumn. Goodner.

†162. *Procedure V.* Continuation of Procedure IV; and including trials by jury and appeals. Three credits; winter. Goodner.

†163. *Procedure VI.* Probate proceedings, covering administration of estates, probate of wills, appointment of guardians, etc. Four credits; spring. Goodner.

165. *Admiralty.* Lord and Sprague's Cases. Three credits; autumn. Lantz.

168. *Conflict of Laws.* Lorenzen's Cases, 2nd Ed. Five credits; spring. Lantz.

170, 171. *Constitutional Law.* Hall's Cases. Three credits a quarter; autumn, winter.

176. *Mortgages.* Parks' Cases. Three credits; spring. Nottelmann.

177. *Municipal Corporations.* Tooke's Cases. Three credits; spring. O'Bryan.

183. *Suretyship.* Langmaid's Cases. Three credits; spring. Nottlemann.

184-185. *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. Hudson's Cases. (May receive political science credit.) Three credits a quarter; autumn, winter. Martin.

187-188. *Private Corporations.* Richards' Cases, 2nd Ed. Three credits a quarter; autumn and winter. Ayer.

191. *Property V: Community.* Bissett's Cases. Five credits; winter. Carkeek.

193. *Trade Regulations.* Oliphant's Cases. Three credits; spring. Lantz.

196. *Trusts.* Costigan's Cases. Five credits; autumn. Nottelmann.

*197. *Administrative Law.* Freund's Cases.

*Not offered in 1930-31.

†During the second and third years, five hours of class work in the Procedure courses and court room work and attendance outside of class hours may, in the discretion of the instructor, be required for the prescribed credits.

Note: An average of fifteen hours or credits in each quarter is required, making a minimum total of 135 hours or credits for completion of the law course.

Students are limited to fifteen hours 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. Five credits. Upper division students may obtain upper division credits on the basis of extra reading and conferences. Autumn and 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 and 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; Associate Putnam; Assistants Andrews, Batcheller.

The following courses are open only to students registered in the Library School.

175, 184, 191. *Cataloging, Classification, Subject Headings.* Lectures, recitations and laboratory. Four credits each; autumn and spring. Three credits; winter. Alfonso.

177, 185, 193. *Reference.* These courses aim to give a working knowledge of important types of reference books. Lectures cover books and methods. Practical problems and work with government documents. Three credits, autumn and winter; two credits, spring. Smith, Batcheller.

171. *Library Economy.* Study of library routine and mechanical devices. Two credits; autumn. Worden, Putnam.

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.

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.

178. *History of Books and Libraries.* Lectures, readings and reports. Two credits; autumn. Henry.

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.

179, 188, 196. *Book Selection.* To cultivate taste and good judgment in evaluation of books through a study of the principles of book selection, anno-

tation and book reviewing. Two credits; autumn, winter; two or four credits; spring. Worden.

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.

170. *Introduction to Children's Work.* A basic course; children's reading interests, principles of book selection, and methods of work with children. Three credits; autumn. 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.) Andrews.

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.

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. *Literature for Children.* Reading, analysis and history of books for children. Two credits each; winter, spring. (Consult dean on electives.) Andrews.

The following courses are open to students not in the Library school:

161-162-163. *Elementary Library Science.* Adapted to the small school library. Open to seniors interested in teacher-librarian positions. Admission limited to 25 teaching majors recommended by the School of Education. Entrance permitted at beginning of autumn quarter only. Two lectures and one 3-hour laboratory period per week. Three credits a quarter; autumn, winter, spring. Worden, Alfonso, Andrews.

The following courses are open to Library School graduates only, on permission of the dean of the Library School. The work will be a co-ordination of theory and practice, the theory to be taken at the University and the practice to be taken in half-time positions at the Seattle Public Library. All courses are required and must be taken in the prescribed order. The following courses, outside of the Library School, are required: Child Psychology, Child Welfare and Education. It is recommended that they be taken as preparatory courses, but they may be carried along with the advanced work. Courses in the following are also strongly recommended as preparatory courses: Greek literature, Latin literature, early literature of various countries, Playground and Recreation.

201, 202, 203. *Children's Literature.* A comparative and critical study of books for children, involving both standards of selection and values of different types of books, and a history of the development of literature for children. Two credits; autumn, winter, spring. Andrews.

204, 205, 206. *Administration of Children's Libraries.* A study of reference material of all kinds for children, problems and surveys involving methods of work with children and a survey of professional reading. One credit; autumn, winter, spring. Andrews.

207, 208, 209. *Story Telling.* A thorough study of story telling sources, such as folk tales, fables, epics, sagas, hero tales, myths, as well as actual practice in telling stories to children. Two credits; autumn, winter, spring. Andrews.

210, 211, 212. *School Work.* Special problems of school libraries, and methods of giving instruction to children in the use of the library. One credit; autumn, winter, spring. Andrews.

213, 214, 215. *Field Work.* Practical work in children's libraries under supervision will be required, each student spending 21 hours each week in an assigned branch of the Seattle Public Library. Seven credits; autumn, winter, spring. Andrews.

MATHEMATICS

Philosophy Hall

Professors Moritz, Winger, Carpenter; Associate Professor Gavett; Assistant Professors Neikirk, Ballantine, McFarlan, Mullemeister, Cramlet, Jerbert, Jacobsen; Instructor Ingram.

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 and take solid geometry (Math. 2) in their freshman year.

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 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.

ADVANCED UNDERGRADUATES AND GRADUATES

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. *Advanced Statistical Methods.* 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.* Classical theory through Pascal's theorem. Selected topics in involution, binary forms, algebraic invariants, the conic as a rational curve and a ternary form. For teachers and professional mathematicians. Prerequisite, calculus, unless it is taken concurrently. Two credits a quarter; autumn, winter, spring. Winger.

*121-122-123. *Finite Collineative Groups.*

131. *Selected Topics in Mathematics.* A course in directed reading for prospective high school teachers. Particular emphasis will be placed upon historical and recreational aspects of mathematics. Prerequisite, Math. 109. Three credits; spring. Jerbert.

*161, 162, 163. *Analytical Mechanics.*

164, 165, 166. *Mathematics of Physics.* For students of science, 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. Differential equations should be taken before or concurrently. Three credits a quarter; autumn, winter, spring. Neikirk.

Teachers' Course in Mathematics. See Educ. 75Q.

COURSES FOR GRADUATES ONLY

Prerequisites. All 200 courses require a full year's work in differential and integral Calculus as a prerequisite and in addition the consent of the instructor in charge.

*201, 202, 203. *Projective Differential Geometry.*

204, 205, 206. *Modern Algebra.* Three credits; autumn, winter, spring. Cramlet.

*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.* Two credits; autumn, winter, spring. Carpenter.

241, 242, 243. *Functions of Complex Variables.* Two credits; autumn, winter, spring. McFarlan.

251, 252, 253. *Mathematical Journal and Research Club.* (No credit.)

MECHANICAL ENGINEERING

Engineering Hall

Professors Eastwood, Wilson, Winslow; Assistant Professors McIntyre, McMinn, Edmonds.

70. *Elements of Gas Engines.* Arranged for the students in fisheries and forestry. Two credits; winter. Wilson.

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.

*Not offered in 1930-1931.

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.

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; autumn and 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.

179. *Steam Turbines.* Theory, construction and design of steam turbines. Prerequisite, M.E. 83. Three credits; spring. Eastwood.

182. *Heating and Ventilation.* Various systems of heating and ventilating methods with designs. Prerequisite, M.E. 82. Three credits; autumn, 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. Eastwood.

184. *Power Plants.* Design of steam power plants, involving their location, buildings, prime movers, and power transmission. Prerequisite, M.E. 83, 123. Three credits; spring. Winslow.

185. *Naval Architecture.* Theory of naval architecture, as pertains to displacement, stability and strength, and the usual calculations involved in construction. Not open to freshmen. Three credits; spring. Eastwood.

191-192-193. *Research.* Two to five credits. Eastwood.

195. *Thesis.* Investigation, design or experiment under direction of the professor in charge. Two to five credits; senior year. Eastwood.

198. *Gas Engineering.* Development of gas engineering; stationary, marine, automobile and airplane motors, and gas producer plants. Prerequisite, M.E. 82. Three credits; autumn, winter, spring. Wilson.

199. *Gas Engine Design.* Calculations and plans for the design of a given type of motor. Prerequisite, M.E. 198. Three credits; spring. Wilson.

COURSES FOR GRADUATES ONLY

211-212-213. *Research.* Autumn, winter, spring. Three credits a quarter. Eastwood.

ENGINEERING ENGLISH

For courses in Engineering English, see Department of English, courses 7, 100, 102, 103.

METALLURGY

See Mining, Metallurgy and Ceramics.

MILITARY SCIENCE AND TACTICS

The Armory

Colonel H. T. Matthews, Major Frazer, Major de Rohan, Captain Crim, Captain Priest, Captain Milner, Captain Cooper, Lieut. Luce, Lieut. Hildebrand, 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 $7.15 per year, or a total of $14.30 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 twenty-five 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. Five hours a week. Fee, $.25. One and two-thirds credits a quarter; autumn, winter, spring.

4-5-6. *Basic Coast Artillery.* National Defense Act, military courtesy and discipline, military hygiene and first aid, artillery drill, physical training,

rifle marksmanship, gunnery instruction, ceremonies, drill and command. Five hours a week. Fee, $.25. One and two-thirds credits a quarter; autumn, winter, spring.

11-12-13. *Band.* Five hours a week. Fee, $.25. One and two-thirds 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. Five hours a week. Fee, $.25. One and two-thirds credits a quarter; autumn, winter, spring.

61-62-63. *Basic Coast Artillery.* Gunnery instruction to include fire control and position finding, artillery materiel, drill and command. Five hours a week. Fee, $.25. One and two-thirds credits a quarter; autumn, winter, spring.

65. *Basic Coast Artillery.* Forestry students only. Military mapping, selection of artillery positions, road and railway problems, estimation of resources for military purposes. Camp messing and sanitation. Fee, $.25. One and two-thirds credits; spring quarter, Pack Forest.

81-82-83. *Band.* Five hours a week. Fee, $.25. One and two-thirds credits a quarter; autumn, winter, spring.

THIRD YEAR

104. *Advanced Infantry.* Map reading and military sketching, drill and command. Primarily for students majoring in military science. 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. Primarily for students majoring in military science. Three credits; any quarter.

106. *Advanced Infantry.* Machine guns: Continuation of Military Sci. 105. Drill and command. Primarily for students majoring in military science. Three credits; any quarter.

114. *Advanced Coast Artillery.* Orientation, map reading and sketching reconnaissance of battery positions. Determination of co-ordinates and orienting lines, transit and calculations, drill and command. Primarily for students majoring in military science. Three credits; any quarter.

115. *Advanced Coast Artillery.* Gunnery. Study of trajectory and effects of velocity, air density, temperature, altitude, problems in computation of firing data for 155 G.P.F. and seacoast artillery. Analysis of drill and target practice, drill and command. Primarily for students majoring in military science. Three credits; any quarter.

116. *Advanced Coast Artillery.* Gunnery. Observation of fire. Methods of fire adjustment for fixed and mobile heavy artillery. Problems in fire adjustment, position finding, conduct of actual heavy artillery fire, 155 G.P.F. and 3-inch anti-aircraft guns at Fort Worden. Primarily for students majoring in military science. Three credits; any quarter.

124. *Advanced Ordnance.* Ordnance materiel. Drill and command. Two credits; any quarter.

125. *Advanced Ordnance.* Ordnance materiel. Two credits; any quarter.

126. *Advanced Ordnance.* Ammunition—manufacture and use of all types. Two credits, any 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.

127. *Ordnance Laboratory.* An experimental study of the various Ordnance mechanisms to determine their characteristics, functioning, assembly and adjustment. One credit; any quarter.

128. *Ordnance Laboratory.* Continuation of Mil. Sci. 127. One credit; any quarter.

129. *Ordnance Laboratory.* A laboratory study of the various explosive compounds used in ammunition to include their preparation, purification, surveilance, etc. 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. Primarily for students majoring in military science. 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. Primarily for students majoring in military science. Three credits; any quarter.

156. *Advanced Infantry.* Combat principles, continuation of Mil. Sci. 155. Drill and command. Primarily for students majoring in military science. Three credits; any quarter.

157. *Military Thesis on Infantry.* Five credits; autumn, winter, spring.

164. *Advanced Coast Artillery.* Military history and policy, administration, interior economy and management of batteries, messing, reports, records and military correspondence. Military law and procedure of courts-martial. Railway, heavy tractor, anti-aircraft and trench artillery—their development and mission. Drill and command. Primarily for students majoring in military science. Three credits; any quarter.

165. *Advanced Coast Artillery.* Tactical employment of heavy artillery, selection of positions, role of artillery in action. Field engineering for artillery, uses, necessity and construction methods, motor transportation, drill and command. Primarily for students majoring in military science. Three credits; any quarter.

166. *Advanced Coast Artillery.* Orientation, artillery materiel, drill and

command. Primarily for students majoring in military science. Three credits; any quarter.

167. *Military Thesis on Coast Artillery.* Five credits; autumn, winter, spring.

174. *Advanced Ordnance.* Military law. Company administration. Two credits; any quarter.

175. *Advanced Ordnance.* Organization of ordnance units. Property accountability. Industrial mobilization. Two credits; any quarter.

176. *Advanced Ordnance.* Ordnance engineering. Principles of design, manufacture and supply. Two credits; any 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. 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. 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. One credit; any quarter.

MINING, METALLURGY AND CERAMICS

Mines Laboratory

Professors Roberts, Daniels, Wilson; Associate Professor Corey; Assistants Schoning, Pifer.

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.

52. *Elements of Mining.* Continuation of Min. 51, giving consideration to machinery and methods of working metal, coal, and placer mines, quarries, and clay deposits. Prerequisite, Min. 51. Two recitations, and one laboratory period. Three credits; winter. Daniels.

101. *Milling.* Preliminary course, 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 and development. Detailed study is made of a nearby mine. 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 Machinery.* Coal cutting machines, mine locomotives, fans, hoists, and pumps with especial reference to application to coal mining. Prerequisite, senior standing. Three recitations. Three credits; autumn. Daniels.

171. *Mine Gases and Ventilation.* Composition and properties of mine gases, methods of testing; lighting of mines; principles of ventilation; ventilating machinery. Prerequisite, Min. 122. Three recitations. Three credits; winter. Daniels.

176. *Coal Preparation.* Methods of preparing coal for market, together with laboratory tests and runs on various coals, to determine best methods of preparation. Prerequisites, Min. 101, Met. 103. Two recitations and two 4-hour laboratory periods. Lab. fee, $10. Five credits; winter. Daniels.

178. *Coal Preparation Machinery.* Machines and equipment used in tipples and washeries for the screening and washing of coal. 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

*Not offered in 1930-1931.

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. Hours and credits to be arranged. Total nine credits allowed for thesis. Autumn, winter, spring, summer. Roberts, Daniels, Corey, Wilson.

221, 222, 223. *Graduate Metal Mining.* Studies in metal mining or in ore dressing. Prerequisite, graduate standing. Hours and credits to be arranged. Roberts.

251, 252, 253. *Graduate Coal Mining.* Studies in coal mining or in the preparation or uses of coal. 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. Two laboratory periods. 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, gold and silver, especially the methods of roasting, smelting, lixiviation and refining. Prerequisite, Met. 102. 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, Met. 102, 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.* Constitution and miscrostructure of metals and alloys, especially iron and steel. Prerequisite, senior standing. 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. Prerequisite, Met. 162. 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. *Graduate 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, feldspar, limestone, magnesite, silica and other materials used in the ceramic industry. Prerequisite, sophomore standing in engineering or mining. Three lectures or recitations. Three credits; spring. Wilson.

100. *Ceramic Products.* Principles governing the shaping of structural, refractory and fine ceramic wares. Prerequisite, Cer. 90. Three lectures and recitations. Three credits; autumn. Wilson.

101. *Drying and Burning.* Principles of drying and burning; the operation and control of commercial dryers and kilns. Prerequisite, Cer. 100. Three lectures and recitations. Three credits; winter. Wilson.

102. *Ceramic Decorations.* Preparation and characteristics of vapor, natural clay slip, raw lead, bristol, terra cotta, porcelain and fritted glazes, bright and mat, with methods of coloring. Prerequisite, Cer. 101. Three lectures and recitations. Three credits; spring. Wilson.

104, 105. *Ceramic Calculations.* Chemistry and physics of preparing, drying, and firing ceramic materials. Problems involved in standard methods of testing clay. The blending of raw materials for ceramic bodies and glazes. Prerequisite, Cer. 90. Three recitations. Three credits; autumn and 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 and fusion, chemical purification and action of colloids. Prerequisite, Cer. 105. Lab. fee, $5 a quarter. Two laboratory periods. Two credits; spring. Wilson.

121, 122, 123. *Ceramic Products Laboratory.* Laboratory production of structural wares, stoneware, yellow ware, porcelain and refractories. Blending, molding, drying, firing and glazing. Prerequisite, Cer. 101. Lab. fee, $10 a quarter. Three laboratory periods and two recitations. Five credits a quarter; autumn, winter, spring. Wilson.

**125, 126, 127. *Ceramic Plant Design.*

**131, 132, 133. *General Ceramics.* Occurrence, winning and preparation of materials used in ceramics. Process used in preparation of raw materials, shaping, drying and firing of ceramic products. Three lectures or recitations. Three credits; autumn, winter and spring.

**140. *Pottery.* Occurrence, winning and preparation of materials used in pottery manufacture. Processes used in moulding, drying, firing, glazing, and decorating of pottery. Two lectures and recitations. Two credits; autumn. Wilson.

**150. *Lime, Plasters and Cements.* Raw materials, manufacture and testing of lime, calcined gypsum, sand-lime brick, and Portland cement. Prerequisite, Chem. 23. Three lectures and recitations. Three credits; winter. Wilson.

**160. *Glass Technology.* Theory and factory practice of glass manufacture. Prerequisite, Cer. 105. Two lectures and recitations. Two credits; autumn. Wilson.

**170. *Metal Enamels.* Theory and practice of metal enameling. Prerequisite, Cer. 105. Two lectures and recitations. Two credits; autumn. Wilson.

180. *Refractories.* Origin, occurrence and physical properties of fireclays and other refractory materials. The manufacturing problems of fireclay, silica, magnesia, chromite brick, electric furnace products and special refractories. Prerequisite, junior standing. Three lectures or recitations. Three credits; winter.

221, 222, 223. *Graduate Ceramics.* Studies of the ceramic resources of the Pacific Northwest, or in the manufacture of clay products. Prerequisite, 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. Clay and ocher washing and utilization.

**Will be offered if a sufficient number of students elect the course.

MUSIC

Music Building

Professors Glen, Wood, Rosen, Venino; Associate Professor Newenham; Assistant Professors Lawrence, McKay, Van Ogle, Munro; Instructors Alderman, Allen-McCreery, Kirchner, Burns, Wilson, Welke; Associates Bogardus, Lynch, Mabon, Venino-Jones; Assistants Canfield-Anderson, Oliver.

(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.

All graduates in public school music should have at least two years of voice training, preferably in the first two years.

Students majoring in public school music should consult early with their adviser concerning the selection of an appropriate minor.

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.

Major students in music may earn not more than one-third of the required number of applied music credits in class work.

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. Other students may elect this course. Three credits a quarter; autumn, winter, spring. Alderman, Wilson.

‡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-singing and ear-training with sufficiently high rating may be excused from this course. Prerequisite for Music 15. Daily. No credit. Autumn, winter, spring.

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.* (Freshman.)

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

68, 69, 70. *Applied Music.* (Sophomore.)

118, 119, 120. *Applied Music.* (Junior.)

168, 169, 170. *Applied Music.* (Senior.)

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—as indicated in the set courses. Students enrolled in these courses will be given opportunity, on demonstration of the required ability, to participate in public recitals of the department.

Unless excused by reason of advanced standing on entrance, students who major in courses in applied music will require two lessons a week, ordinarily, to cover the work necessary for a degree. One to three credits a quarter.

(a) *Piano.* Venino, Van Ogle, L. Venino-Jones, Allen-McCreery.

(b) *Violin.* Rosen, Oliver.

(c) *Voice.* Glen, Mabon, Bogardus, Lawrence.

(d) *Violoncello.* Kirchner, Canfield-Anderson.

(e) *Organ.* Lynch, Wood.

(f) *Band and Orchestra Instruments.* Welke.

*22, 23, 24. *Music Appreciation.*

25, 26, 27. *Choral Study.* For freshmen. Part songs for men's voices. Candidates admitted only upon examination. 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. Glen.

31, 32, 33. *University Orchestra.* The orchestra affords qualified students opportunity for study of the better grades of orchestral composition. No one is eligible to enter the course unless the director is satisfied of the ability of the applicant. 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. *Instrumental Methods.* Especially designed for music supervisors and required of all Public School majors. Student masters fundamental playing principles of each instrument and is instructed in method by which all instruments may be taught successfully in one class. Wind instruments, fall and winter. Strings, spring quarter. 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. Wood, Alderman, Burns.

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*Not offered in 1930-1931.

53. *Intermediate Harmony.* Secondary harmonies. Prerequisite, Mus. 51. Five credits; autumn, winter, spring. Wood, Alderman, Burns.

56. *School Music.* Study of song literature for primary grades. Second half devoted to choral conducting. Prerequisite, Music 15, 16. Five credits; autumn, winter, spring. Munro, Newenham.

*57, 58, 59. *Advanced Sight Singing.*

61, 62, 63. *Advanced Ear Training.* Dictation and keyboard practice supplementary to harmony courses. Prerequisite, Mus. 16. Two credits a quarter; autumn, winter, spring. Alderman.

65, 66, 67. *Choral Study.* Not open to freshmen. Part songs for men's voices. Candidates admitted only upon examination. Three credits a quarter; autumn, winter, spring. Lawrence.

84, 85, 86. *Advanced Voice Training.* One credit a quarter; autumn, winter, spring. Bogardus.

101. *Advanced Harmony.* Chromatic harmonies and modulation. Prerequisite, Mus. 53. Five credits; autumn, winter, spring. McKay, Wood, Burns.

104, 105, 106. *Advanced Music History.* Important periods and composers of modern music. Two credits a quarter; autumn, winter, 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, Burns.

113. *Music Education.* Study of problems in school music teaching in the primary grades; discussion and application of modern educational principles with opportunities for students to demonstrate their use in projects assigned. Prerequisite, Mus. 56. Two credits; autumn. Munro, Newenham.

114. *Music Education.* Continuation of 113, considering grades 4, 5, 6. Prerequisite, Mus. 113. Two credits. 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.

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.* 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 Advanced.* 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.

140, 141, 142. *Orchestral Instruments.* 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

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music curriculum. Prerequisites 40, 41, 42. Daily. Three credits; autumn, winter, spring. ————, Welke.

151, 152, 153. *Advanced Music Appreciation.* Appreciative study of some modern composers and schools. Two credits a quarter; autumn, winter, spring. Van Ogle.

154. *Music Supervision.* High school music; courses of study; problems of small high school; assembly music; special programs; credit courses; study of musical literature; harmony courses; glee clubs and orchestras. Prerequisites, 113, 114 and Educ. 75R. Two credits; autumn. Munro, Newenham.

155. *Music Supervision.* Appreciation through grades and high school. Comparative study of music courses and texts in general use. Prerequisite, 154. Two credits; winter. Munro, Newenham.

156. *Music Supervision.* Community music. Contests, festivals; rural music; normal school problems; theory in the grades; tests and measurements. Prerequisite, 155. Two 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, Music 109. Five credits; autumn. Wood.

165, 166. *Piano Teaching Methods.* Teaching methods and a survey of teaching material, with supervised practice in teaching of piano. Prerequisite, five hours in education. Two credits a quarter; autumn, winter. Alderman.

173. *Orchestration.* Characteristics of individual instruments and exercises in scoring for various combinations. Prerequisite, Music 117. Five credits; winter. McKay.

180, 181, 182. *Conducting.* Ensemble and orchestral groups; study of the literature practicable for these groups. Two credits a quarter; autumn, winter, spring. Welke.

197. *Advanced Composition.* Original work in the larger forms. Prerequisite, Mus. 157. Five credits; spring. McKay.

199. *Senior Recital.* Two credits; winter or spring.

Teachers' Courses in School Music and Piano Playing.

Education 75R. *Teachers' Course in Music Education.* A study of principles and methods in teaching music in the public schools. Prerequisite, Music 113, 114. Two credits; spring. Munro, Newenham.

Education 75W. *Teachers' Course in Piano Playing.* Survey of teaching material, with supervised practice. Prerequisite, Music 165, 166. Two credits; spring. Alderman.

COURSES FOR GRADUATES ONLY

The department of music gives the degree of master of arts in music with the following requirements: 24 of the minimum number of 45 credits required for the degree must be, and all of the 45 credits may be, earned in advanced composition; 12 credits may be earned in other music not offered by the candidate for the bachelor's degree; 9 credits may be allowed for a thesis on some research problem in music education, history of music, or aesthetics.

201, 202, 203. *Graduate Composition.* Credits to be arranged, 24 to 36. McKay.

204, 205, 206. *Research.* Problems in Music Education, History, or Aesthetics. Credits to be arranged. Maximum 12 hours. 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.

College Courses in Applied Music

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.

PIANO

Freshman and Sophomore Years. Major and minor scales and arpeggios; studies selected from Czerny, Cramer, Loeschorn, Kullak, Heller and Krause; sonatas by Scarlatti, Haydn, Clementi, Mozart and Beethoven; shorter compositions and inventions by Bach; and works from the classic and romantic schools.

Junior and Senior Years. Scales in thirds, sixths and tenths; studies by Czerny, Clementi, Chopin, Brahms, MacDowell and Moszkowski; Well-tempered Clavichord and suites of Bach; sonatas, pieces including at least one concerto, taken from the classic, romantic or modern composers. At least one recital program must be played from memory from the repertoire studied.

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, Book 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 I and II, Rosen; Exercises, Op. 45, Book I, Wohlfahrt; Book I, De Beriot, Exercises Op. 68.

Sophomore. Scales, Hrimaly; Studies, Blumenstengal Op. 33, Mazas, Books I and II; Concerto, Accoly, Scene de Ballet, De Beriot.

Junior. Scales; Exercises, Books I and II, 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.

FEES

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.

Choral Classes. Music 10, 11, $1.

Piano. Mr. Venino, $25 a quarter; Mrs. Van Ogle, $25 a quarter; Mrs. Venino-Jones, $25 a quarter; Mrs. McCreery, $18 a quarter.

Vocal Music. Miss Mabon, $25 a quarter; Mrs. Bogardus, $25 a quarter; Mr. Lawrence, $25 a quarter.

Dean Glen will give individual instruction in singing and repertoire to a maximum number of 5 students. The fee will be at the rate of $27 a quarter for one lesson weekly.

Violin. Mr. Rosen, $25 a quarter; Mrs. Oliver, $18 a quarter.

Organ. Mrs. Lynch, $25 a quarter; Mr. Wood, $25 a quarter.

Violoncello. Mr. Kirchner, $25 a quarter; Mrs. Anderson, $18 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 Paul H. Rice, U.S.N., Lieut. Comdr. F. H. Kelley, Jr., U.S.N., Lieut. E. A. Foote, U.S.N., Lieut. C. F. S. Quinby, U.S.N., Lieut. A. L. Hamlin, U.S.N., Assistant Professors; Malcolm Hamilton (C.G.M., U.S.N.R.), C. J. Wilson (C.B.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 H, College of Science.)

First Year

1-2-3. *Basic Course—Ordnance 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. One and two-thirds credits a quarter; autumn, winter, and 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. Seamanship—Handling of ships in heavy weather, rules of the road; naval leadership, naval administration and discipline, naval communications. Lectures on general naval subjects. Four hours a week plus one additional hour of drill. One and two-thirds credits a quarter; autumn, winter and 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. Navigation and nautical astronomy-compass compensation, aerial navigation. 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 and spring. Engineering students only. One and two-thirds credits, autumn, winter and 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 and spring. Engineering students only. One and two-thirds credits; autumn, winter and spring.

NURSING EDUCATION

Home Economics Hall

Associates Soule, Leahy, Adams.

1. There are three distinct types of work for majors in nursing included in this department.

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. Three-year curriculum for graduate nurses leading to a degree of bachelor of science in nursing.

c. One-year curriculum for graduate nurses leading to a certificate in public health nursing.

d. 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. Five credits; autumn. Leahy.

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 is intended to prepare the student to have a greater understanding of the responsibilities which she must take upon entering the Hospital School of Nursing. Open only to nursing majors. Fee, $2. Five credits; two lectures and three 2-hour laboratory periods; spring. Leahy.

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. 102. Five credits; winter, spring. Soule.

110E. *For Field Work, see Nursing* 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 schools of nursing. Also the principles of teaching applied to nursing procedure. Five credits; autumn quarter.

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 quarter. Adams.

152. *Supervision of Hospital Departments.* Organization, equipment, and administration. Five credits; spring quarter. Adams.

Health Education. See Educ. 145; P.E. 6, 7.

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. 102, 103; Bact. 101, 102, 103, or Nurs. 150, 151, 152. Autumn, winter, spring; credits arranged. Staff.

BY EXTENSION

110E. *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, etc. Prerequisite, Nurs. 102. Eight to sixteen credits; time to be arranged.

ORIENTAL STUDIES

Professor Gowen; Assistant Professor Griffin. Co-operating: Professor Skinner. Teaching Fellows: Henry S. Tatsumi; Hugh P. Chang.

The department presents the thought treasures, the history, and the institutions of the Asiatic world, and serves those persons looking forward to teaching, research, and other work concerned with Oriental peoples and affairs. Its courses are of use to students whose occupations will in some measure call for knowledge of the Orient—in business and trade; in journalism; in educational, religious or social activity among Oriental races, either in Asia or in this country; and in political or diplomatic life. Persons interested in these special fields may profitably consult with the department regarding the choice of Oriental studies and the relation to these of various courses offered by the different faculties. Undergraduate and graduate students whose chief work is to be in this department are expected on registering in it to ask for a *List of Special Provisions* relating to the following: concentration of courses, required courses, knowledge of history and criticism, language requirements and possibilities, preparation in education, the scope of courses devoted to particular nations or periods, departmental reading and tests, suggestions for systematic private reading, possible lines of study

in the reading course, topics in the oriental seminars, general meetings (for discussions) of those registered in the department, publications, prizes, research and types of direct experiences in the Orient, special lectures, and Oriental matters of local interest. These provisions also include the numbers and names of relevant courses in other subjects.

The college requirement of ten credits in ancient languages and literature may be met by any two of the courses 50, 51, and 52. Courses 114, 115, 116 count for credit in the department of philosophy.

Oriental Studies 25, 26, 27, and 120 provide introductions to the subject. Oriental Studies 40-41 provides a preliminary knowledge of customs and ideas of present importance.

Fuller descriptions of courses appear in the department's *General Statement,* copies of which are available in the college and departmental offices.

Courses

1-2, 3. *Japanese Language.* First-year course. Elements of spoken and written language; grammar, *kana,* and characters. Five credits; autumn, winter, spring. Tatsumi.

4, 5, 6. *Japanese Language.* Second-year course. Three credits; 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. *Civilizations of Eastern Asia and the Pacific.* Travel descriptions and customs, with moving pictures, exhibits and trips. Attitudes, cultures and institutions considered in relation both to existing situations and policies and to the earlier development of different elements in the intellectual and social life of China, Japan, etc. Methods of approach. (For continuation see O.S. 191). (Not to be offered in 1931-32). Five credits; autumn, winter. Griffin.

44-45, 46. *Chinese Language.* Introduction to the elements of the spoken language and the ideographs. Five credits; autumn, winter, spring. Chang.

47, 48, 49. *Chinese Language.* Second year course. Three credits; autumn, winter, spring. Chang.

†50. *Literature of India.* Indian literature from the Vedas to Rabindranath 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.* Literary, historical, and philosophical works studied chiefly from a social standpoint. Intended to alternate with 70. Five credits; spring. Griffin.

†Upper division students may receive upper division credit by doing additional work.
*Not offered in 1930-1931.

*75, 76. *History of China.*

*78, 79. *History of Japan.* (Offered in 1931-1932.)

*80. *Semitic Literature.*

*101-102-103. *Hebrew, Aramaic, or Arabic.*

*104-105-106. *Sanscrit.*

Political and Economic Geography of Asia. (Geog. 103.)

**Geography of Africa and Australasia.* (Geography 106.)

114. *History of Religion.* The primitive conception of religion, naturism and spiritism. Three credits; autumn. Gowen.

115. *History of Religion.* The religions of the Far East and India. Three credits; winter. Gowen.

116. *History of Religion.* A survey of Judaism, Christianity and Muhammadanism. Three credits; spring. Gowen.

120. *Problems of Eastern Asia and the Pacific.* An introductory case and problem approach to important questions, situations, and forces of different types, considered as they actually are and in relation to the relevant historical background. Methods of approach as well as data. Open to qualified sophomores. Five credits; spring. Griffin.

Peoples of Oceania. (Anthropology 112). Three credits; winter. L. Spier.

Peoples of Northeastern Asia. (Anthropology 113.) Three credits; autumn.

Peoples of Central and Northern Asia. (Anthropology 114.) Three credits; spring.

*125-126, 127. *Diplomatic History of Eastern Asia.* To alternate with 225-226, 227.

International Relations of the Far East. (Pol. Sci. 129.) Five credits; spring.

Race Invasion (Sociology 142). (This bears largely on the Orient.) Three credits; spring. McKenzie.

Trade of the Far and Near East. (Econ. 143). Prerequisite, B.A. 7. Five credits; winter. Skinner.

Governments and Politics of the Far East. (Pol. Sci. 158). Five credits; autumn.

*152, 153, 154. *Hebrew, Arabic, or Sanscrit.* Second year.

**Materials and Methods in Teaching Oriental Studies.* (Educ. 75T.) For those who wish to give either separate courses on this subject or general courses—such as geography, art, literature, history, economics, and government—in which the Orient occupies, or should occupy, a place. This work may be continued in O.S. 190, 191, 192. (To be offered in summer quarter, 1930).

**Education in the Orient.* (Educ. 184). A social study of educational factors and development in Eastern Asia and in Pacific regions. Rapid sur-

*Not offered in 1930-1931.

vey of present situations and problems; sketch of relevant cultural features and of intellectual leaders; and historical development of ideas and systems of education. This study may be continued (including also India and Western Asia) in O.S. 190, 191, 192, and 220, 221, 222. (To be offered in summer quarter, 1930.)

Cultural Contact, Cultural Conflict, Cultural Accommodation. (Sociol. 94, 95, 96.) (These bear mainly on Asia and Oceania.) Three credits; autumn, winter, spring. Price.

190. *Reading Course.* (Oriental Biographies.) Life and times of outstanding personalities such as the Empress Dowager (Tzu Hsi), Jenghiz Khan, Hideyoshi, Townsend Harris, etc. Open to sophomores. Two to five credits; autumn. Griffin.

191, 192. *Reading Course.* Reading on single, selected Oriental topics, regular conference (individual or in small groups), reports, essays and continuation of other courses. Permits new studies or continuation of other courses completed or under way. Open to qualified sophomores. Two to five credits; winter, spring. Griffin.

Reading Course. (Anthropology 193, 194, 195). 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

Research in Geographic Problems of Asia. (Geography 203). Credit and hours to be arranged. Spring. Renner.

220. *Seminar on Eastern Asia.* Provides for source studies in contemporary history of Eastern Asia or the recent educational and intellectual history of Japan. Two to five credits; autumn. Griffin.

*221, 222. *Seminar on Eastern Asia.*

225,* 226, 227. *Seminar in Oriental Diplomacy.* Selected topics in the history of the dealings of Oriental peoples or states with one another or with Western states. (226 should precede 227). Intended to alternate with O.S. 125-126. Three credits; winter, spring. Griffin.

290, 291, 292. *Thesis.* Directed investigation and writing in connection with work for advanced degrees. Credits to be arranged; autumn, winter, spring. Staff.

PAINTING, SCULPTURE AND DESIGN

Education Hall

Professor Isaacs; Assistant Professors Rhodes, Patterson, Pratt, Benson, Hill, Foote; Instructors Penington, Buck, Byers; Associates Worman, Wood, Curtis, Taylor.

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, Penington, Worman.

*Not offered in 1930-1931.

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, Byers, Buck, Wood, Penington.

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.

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.

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, Penington, Byers.

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. 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, $1. Prerequisites, P.S.D. 5, 6, 7; 9, 10, 11. Three credits a quarter; autumn, winter, spring.
Foote.

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, $2.50. 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. Buck.

106. *Art Structure.* Poster designing. Prerequisites, P.S.D. 5, 6, 7, 9, 10, 11. Lab. fee, $.50. Three credits; spring. Buck.

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, $1. Prerequisites, P.S.D. 5, 6, 7, 9, 10, 11. Five credits a quarter; autumn, winter, spring. Foote.

116. *Illustration.* Prerequisite, junior standing. Lab. fee, $.50. Three credits a quarter; autumn. Rhodes.

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. Two credits; autumn. Benson.

130. *Pottery.* Advanced work with emphasis on glazing. Lab. fee, $2.50. 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.

151, 152. *Art Structure.* Study and history of processes used in the art of the book. Compositions in block print. Permission of department required for non-majors. Lab. fee, $1. Prerequisite, junior standing. Three credits a quarter; 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. Wood.

158. *Metal Work.* Design applied to problems in silver, stone setting. Lab. fee, $2. Prerequisite, P.S.D. 157. Three credits; autumn, winter. Wood.

159. *Jewelry.* Advanced jewelry. Lab. fee, $2. Prerequisites, P.S.D. 158. Three credits; autumn, winter. Wood.

160, 161, 162. *Life.* Lab. fee, $3. Prerequisite, 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, 5, 6, 7, 9, 10, 11. Three credits a quarter; autumn, winter, spring. Benson.

169, 170, 171. *Costume Design and Illustration.* Prerequisites, P.S.D. 5, 6, 7, 9, 10, 11. Lab. fee, $1. Two credits a quarter; autumn, winter, spring. Buck.

172, 173, 174. *Interior Design.* Advanced problems in interior design in elevation and perspective. Prerequisites, P.S.D. 110, 111, 112. Lab. fee, $1. 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. Buck.

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.

Teachers' Course in Methods in Teaching Art. See Educ. 75A.

Suggested Courses in Commercial Art. P.S.D. 5, 6, 7; 9, 10, 11; 105, 106; 116, 151, 152; 160, 161, 162.

PHARMACY, PHARMACEUTICAL CHEMISTRY, PHARMACOLOGY, TOXICOLOGY, MATERIA MEDICA AND FOOD CHEMISTRY

Bagley Hall

Professors Johnson, Lynn, Langenhan; Associate Professor Goodrich; Instructors Lehman, Cain 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 repeated winter, spring 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. Langenhan.

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. Lynn.

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. Lynn.

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. Lehman 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. Goodrich.

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. Johnson.

COURSES FOR GRADUATES ONLY

201. *Investigation in Practical Pharmacy.* Maximum credit forty-five hours. Lab. fee, $1 per credit hour. Any quarter. Langenhan

202. *Investigation in Pharmacognosy.* Maximum credit forty-five hours. Lab. fee, $1 per credit hour. Any quarter. Goodrich

203. *Investigation in Toxicology.* Maximum credit forty-five hours. Lab. fee, $1 per credit hour. Any quarter. Lynn, Johnson.

204. *Investigation in Pharmaceutical Chemistry.* Maximum credit forty-five hours. Lab. fee, $1 per credit hour. Any quarter. Lynn, Johnson.

205. *Investigation in Pharmacology.* Maximum credit forty-five hours. Lab. fee, $1 per credit hour. 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

Professors Savery, Blake; Assistant Professor ———; Instructor ———.

The 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. Blake, ———.

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. Blake.

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. ———.

101-102-103. *History of Philosophy.* Ancient, medieval and modern. Open to juniors and seniors only. Three credits a quarter; autumn, winter, spring. Blake.

104-105-106. *Metaphysics.* The nature of reality, with special reference to the concepts and principles of science. For advanced students in philosophy or in the sciences. Instructor's permission necessary. Three credits a quarter; autumn, winter, spring. Savery.

*113. *Philosophy of Religion.*

Oriental Studies. 114, 115, 116. *History of Religion.* Autumn Quarter: primitive conceptions of religion; naturism and spiritism. Winter quarter: the religions of the Far East; Spring quarter: Judaism, Christianity, and Muhammadanism. Offered in alternate years. Three credits; autumn, winter, spring. Gowen.

123. *Philosophy in English Literature of the Nineteenth Century.* From Wordsworth to Shaw, Wells and Chesterton, and including Emerson, Whitman and Masters. Prerequisite, Phil. 1, or instructor's permission. Five credits; spring. Savery.

129. *Esthetics.* Theories of the nature of Art, the nature of Beauty, and the various sources of esthetic effect. Open only to juniors and seniors. Five credits; autumn. Savery.

133. *Ethical Theory.* An advanced course in the fundamental concepts and principles of ethics. Prerequisite, Phil. 2 or 3. Two credits; spring. ———.

141-142-143. *Contemporary Philosophy.* Modern movements and con-

*Not offered in 1930-1931.

troversies. 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. Blake.

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.

214-215-216. *Seminar in Logic.* This course falls into three related parts: Logical Theory, The Theory of General Propositions, and Studies in *Principia Mathematica.* These are, respectively, the topics to be developed during the three quarters. Prerequisite, Phil. 5. Two or three credits the quarter; autumn, winter, spring. ————.

241-242-243. *Seminar in Plato and Aristotle.* Reading of the texts in translation, with discussion and interpretation. Two or three credits a quarter; open to students upon approval of instructor. Autumn, winter, spring. Blake.

*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

Assistant Professor Foster, Director; Associate Professor Arbuthnot; Instructors Auernheimer, ————; Associates Edmundson, Graves, Phelan; Assistant Kunde.

The purpose of the department is twofold:

1. To provide opportunity for all men of the University to receive the biological and social benefits that come through participation in a rational program of physical education.

2. To train directors, supervisors, and teachers of physical education for the playgrounds, elementary schools, secondary schools and colleges.

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.

Special Examinations. All men who wish to engage in vigorous organized athletic contests are required to receive a medical examination the year of and previous to the sport in which they desire to participate.

*Not offered in 1930-1931.

Motor Achievement Test. At the beginning and end of each quarter a Motor Achievement Test is given which tends to classify students according to certain fundamental motor skills. Students who pass the test are allowed the following privileges: They may substitute any seasonal activity (one for each quarter) for the regular class work; they may elect exercise periods not in the regular schedule; they may check their own attendance; they may receive instruction in any regular class. Note: The Motor Achievement Test is optional.

Required 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 and two-thirds credits a quarter; autumn, winter, spring. 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 and two-thirds credits a quarter; autumn, winter, spring. Auernheimer.

FOR SOPHOMORES

51, 52, 53. *Advanced Physical Education.* During the sophomore year the student is permitted to select three activities in which to specialize (one each quarter) from among the following: Basketball, boxing, fencing, golf, handball, playground ball, soccer, swimming, tennis, tumbling, volleyball, wrestling. Fee, $.50. One and two-thirds credits a quarter; autumn, winter, spring. Staff.

55, 56, 57. *Restricted Exercise for Sophomores.* A continuation of Phys. Educ. 5, 6, 7. Fee, $.50. One and two-thirds credits a quarter; autumn, winter, spring. Auernheimer.

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 and two-thirds credits a quarter; autumn, winter, spring. Foster.

Professional Physical Education Courses

80. *Introduction to Physical Education.* A general survey of the field; range and scope of activities including professional opportunities; relation of the required curricular courses to the special field. Two credits; autumn. Foster.

90. *Personal and General Hygiene.* 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.

110. *Athletic Training and First Aid.* 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.

112. *Elementary Games.* Games of low organization. Demonstration in the presentation of play materials. Fee, $.50. Two credits; autumn. Kunde.

113. *Playground and Community Recreation.* Organization of recreational programs for children and adults. Use of facilities and equipment for boys 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.

131. *Kinesiology.* A study of body mechanics including muscles, bones, and joints. An analysis of the fundamental movements involved in gymnastics, athletic sports and vocational activities with reference to mechanical structure and function. Prerequisites, Physiology 53, 54, 55. Fee, $.50. Three credits; autumn. ———.

132, 133. *Individual Gymnastics.* 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, Phys. Educ. 131. Fee, $.50. Two credits a quarter; winter, spring. Auernheimer.

141, 142, 143. *Physical Education Methods.* 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.* 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. Fee, $.50. Three credits; autumn. Foster.

150. *Physical Education Administration.* 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, Educ. 75U; Phys. Educ. 145. Fee, $.50. Three credits; spring. Foster and Staff.

*155. *Scouting Principles and Practice.*

The following methods courses are designed for men who wish to teach advanced groups:

170. *Methods in Teaching Football.* Theory and practice of the fundamental principles underlying both individual and team play. Prerequisite, one season practice in college football. Two credits; spring. Phelan.

*Not offered in 1930-1931.

171. *Methods in Teaching Basketball.* Individual and team development; offensive and defensive play. Two credits; autumn. Edmundson.

172. *Methods in Teaching Track and Field.* Methods of training for the various events. Correct form in running. Conducting and officiating meets. Two credits, autumn. Edmundson.

173. *Methods in Teaching Baseball.* Fundamentals of batting, baserunning and position play; theory and practice. Prerequisite, one season practice in college baseball or the equivalent. Two credits; spring. Graves.

*174. *Methods in Teaching Boxing and Wrestling.*

175. *Methods in Teaching Swimming and Diving.* Two credits; winter. ———.

*176. *Methods in Teaching Life Saving.*

Methods in Health Education. (See Department of Physical Education for Women, P.E. 153).

Teachers' Course in Physical Education. See Educ. 75U.

PHYSICAL EDUCATION AND HYGIENE FOR WOMEN

Gymnasium

Associate Professor Gross, Director; Assistant Professors DeVries, McGownd; Instructor Gunn; Associates Rulifson, Martin, Spencer, Glover, Maydahl; Assistant Jefferson.

The health education requirement for all university women is represented by regular participation in healthful activities and in the lecture course on the fundamentals of healthful and efficient living.

(a) *Healthful Activities.* All women are required to elect some form of healthful activity during the first four quarters of university residence, in order that each student may have the vigorous wholesale activity necessary for promoting health, that she may develop social as well as individual motor skills and have opportunity for aesthetic expression, and that she may learn the elements of, and love for, a recreational hobby which she may continue in after years.

Four quarters of activities are required for graduation. These courses give academic credit. Three additional quarters *may* be taken and will count as other academic credits for graduation.

(b) *Lecture Course in Health Education.* This course is given jointly by the Home Economics Department, Nursing Education Department, and the Physical Education Department. Its aim is to present the fundamental facts which serve as the basis of a development of intelligent attitudes toward individual, community, racial health.

Courses leading to a major in physical education are listed under professional courses in physical education. For curriculum in Physical Education, see College of Science bulletin, or School of Education bulletin.

Required Lecture Courses for All University Women

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 re-

*Not offered in 1930-1931.

garding personal and future problems in the matter of self-direction. One lecture a week for two quarters or two lectures a week for one quarter. Fee, $.50. One or two credits; autumn, winter, spring. 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. One lecture a week for two quarters or two lectures a week for one quarter. Fee, $.50. One or two credits; autumn, winter, spring. Leahy, Adams.

8, 9. *Health Education.* Principles of food and nutrition for various age groups. Sources of material and a study of the application of scientific principles. One lecture a week for two quarters, or two lectures a week for one quarter. Fee, $.50. One or two credits; autumn, winter, spring. Stephenson, Rivers.

Activity Courses

57. *Fencing.* Two hours of practice. One credit; autumn, winter, spring. Auernheimer.

61. *Folk Dancing.* Two hours of practice. One credit a quarter; autumn, winter. Martin.

62. *Character Dancing.* Twice a week. One credit; autumn, winter, spring. Martin.

63. *Advanced Character Dancing.* Twice a week. One credit; winter, spring. Martin.

64. *Hockey.* Two hours of practice. One credit; autumn. Rulifson.

65. *Basketball.* Two hours of practice. One credit; winter. Rulifson.

67. *Elementary Tennis.* Two hours of practice. One credit; autumn, spring. Spencer, Rulifson, Maydahl.

68. *Soccer.* Twice a week. One credit; winter.

69. *Advanced Tennis.* Prerequisite, Phys. Educ. 67. Two hours practice. One credit; spring. Rulifson.

72. *Rifle Shooting.* Two hours of practice. One credit; autumn, winter, spring.

75. *Archery.* Two hours practice. One credit; spring. deVries.

76. *Advanced Archery.* Two hours practice. One credit; spring. deVries.

80. *Indoor Baseball.* Two hours practice. One credit; winter. Maydahl.

82. *Volley Ball.* Two hours practice. One credit; autumn, winter.

85. *Canoeing.* Two hours practice. One credit; spring. Martin.

87. *Golf.* Two hours practice. Fee, $3.50. One credit; autumn, winter, spring. Jefferson.

88. *Advanced Golf.* Prerequisite, Phys. Educ. 87. Fee, $3.50. One credit; winter, spring. Jefferson.

91, 92, 93. *Natural Dancing.* Two hours practice. One credit; autumn, winter, spring. deVries, Martin.

94. *Equitation.* Twice a week. Fee, $12. One credit; autumn, winter, spring.

98. *Advanced Equitation.* Prerequisite, Phys. Educ. 94. Twice a week. Fee, $12. One credit; autumn, winter, spring.

95. *Swimming.* Two hours of practice. Fee, $1. One credit; autumn, winter and spring. Glover, Spencer.

96. *Intermediate Swimming.* Two hours of practice. Fee, $1. One credit; autumn, winter, spring. Glover, Spencer, Maydahl.

97. *Advanced Swimming.* Two hours of practice. Fee, $1. One credit; autumn, winter, spring. Glover.

Registration in the following courses is only upon the recommendation of an instructor following medical and physical examination.

1, 2, 3, A to F inclusive. *Corrective Gymnastics.* One credit; autumn, winter, spring. McGownd.

PROFESSIONAL COURSES IN PHYSICAL EDUCATION

100. *Survey of Physical Education as a Profession.* Opportunities in the field. Relation of courses. Required of all physical education majors. Two credits; winter. Gross.

101-102. *Survey of Gymnastics.* Gymnastic terminology. Classification of gymnastic material. Principles and technique of teaching. Prerequisites, or accompanying courses, Anat. 101, 110, 111, 112 and Physiology 53-54-55. One hour lecture and two hours practice. Three credits a quarter; winter, spring.

111. *Rhythms and Dramatic Games.* 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. Three credits; autumn. McGownd.

112. *Elementary Athletic Games.* 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. Three credits; winter. Gross.

113. *Organization and Administration of Playgrounds.* Classification of play material, conduct and equipment of play centers. Commercial and municipal recreation; agencies promoting recreational activities. Prerequisite, Phys. Educ. 111, 112. Three lectures a week. Three credits; spring. Gross.

122. *Kinesiology.* A study of the principles of body mechanics and body movements; the analysis of muscular movement and problems of muscular readjustments in relation to posture. Prerequisites, Anat. 101, 110, 111, 112 and Physiology 53-54-55. Three credits; winter. McGownd.

*127. *Tests and Measurements.*

131-132-133. *Theory and Practice in Adapted Activities.* Study of deviations from the normal, remedial gymnastics and application of exercises for correction; kinesiology. Two hours lecture and four hours practice. Prerequisite, P.E. 122 and Physiol. 53-54-55, Anat. 101, 102, 103. Three credits a quarter; autumn, winter, spring. McGownd.

134. *Problems in Adapted Activities.* Special problems, including survey of hospital, grammar school and high school adapted activity work. Re-

*Not offered in 1930-1931.

search in remedial and orthopedic fields. Problems selected will depend upon personnel of class. Prerequisite, P.E. 131, 132 or equivalent. Credits 1-5 to be arranged; winter. McGownd.

152. *Administration of Physical Education.* 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 Educ. 75Y. Two hours a week. Two credits; spring. Gross.

153. *Methods in Health Education.* Study of the psychological basis for teaching health and evaluation of methods and content of the program of teaching health. Problems in the leadership of children in establishing an intelligent self-direction in personal health practices. The study of the relation of all the departments in the school organization contributing to the health program. Two credits; spring. Gross.

159. *Advanced Natural Dancing.* Methods in teaching natural dancing and adaptation for various types of classes. Character dancing and study of the characteristics of national groups. Prerequisite, Phys. Educ. 162, 163, 164. Two credits: autumn. deVries.

162, 163, 164. *Methods in Physical Education.* 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, volley ball, 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. Prerequisite, P.E. 61, 62, 63, 64, 65, 67, 75, 80, 82, 87, 91, 92, 93, 95, and 96 or 97. Five credits; autumn, winter, spring.
deVries, Glover, Rulifson, Martin.

170. *Advanced Athletics.* Advanced practice in technique; application of methods to material; practice in coaching and refereeing in hockey, lacrosse, badminton, speedball, fieldball, volley ball, basketball, baseball and tennis. Prerequisite, P.E. 162, 163, 164. Two credits; winter. Rulifson.

175. *Advanced Swimming.* Advanced coaching in individual swimming technique; further practice in teaching, coaching, and swimming pool organization and administration; consideration of problems in teaching and coaching. Prerequisite, P.E. 162, 163, 164. Two credits; spring quarter. Glover.

177. *Problems in Athletic Programs.* Problems which evolve from the organization and instruction of sports and studies concerning the personnel of sport classes. Credits one to five, to be arranged; winter. Rulifson.

178. *Advanced Character Dancing.* Practice in advanced character technique; supervised practice teaching; the development of original projects. Prerequisite, P.E. 162, 163, 164. Two credits; autumn quarter. Martin.

179. *Advanced Folk and National Dancing.* Practice in the technique used in advanced folk and national dancing; application of methods to the material in supervised practice teaching. Prerequisite, P.E. 162, 163, 164. Two credits; winter quarter. Martin.

180-181. *Campcraft.* The course represents actual participation in camp organization and in camp activities, practice in soccer, water sports, swimming, canoeing, life saving, camp cooking, and overnight hikes. Required of all majors preferably at end of freshman year. Two credits each.
Gross and Staff.

Teachers' Course in Physical Education. See Educ. 75V.

COURSES FOR GRADUATES ONLY

195. *Supervision of Physical Education.* Analysis of the problems and technique of the improvement of teaching as relating 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.

200. *Seminar.* 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.* Special problems, including administration of school programs, organization of athletic activities, relation of physical education to extra-curricular activities, organization of remedial programs. Programs selected will depend upon personnel of class. Prerequisite, 30 credits in physical education. Credits to be arranged; autumn, winter, spring. Staff.

PHYSICS

Physics Hall

Professor Osborn; Associate Professors Brakel, Anderson; Assistant Professors Utterback, Henderson; Instructors Newbury, Kenworthy; Associates Higgs, Sandermon.

NOTE: Students, not in engineering, who do not have a full year of high school physics, must elect Phys. 4, 5, 6. Engineering students without a full year of high school physics must have taken Phys. 7 before electing Phys. 97. In the winter and spring these students may elect 98 and 99 by registering for Section H in addition. Physics 97 offered in the winter and spring is only for students with a full year of high school physics.

1-2. *General Physics.* Courses 1-2 will satisfy the physical science requirement in the Colleges of Liberal Arts and Science. Prerequisite, a full year of high school physics. Lab. fee, $2. Five credits a quarter; autumn, winter. Osborn.

NOTE: Architecture students in Physics 1 or 4 do not take the laboratory. Credit, four hours.

3. *General Physics.* Electricity. Required of physics majors, of mathematics majors taking physics as a minor; and of all pre-medic students. Prerequisite, Phys. 1-2. Lab. fee, $2. Five credits; spring. Osborn.

4-5. *General Physics.* For students without a year of high school physics. These courses will satisfy the physical science requirement in the Colleges of Liberal Arts and Science. Lab. fee, $2. Five credits; autumn, winter. Utterback.

6. *General Physics.* Electricity. Prerequisite, Physics 5. Lab. fee, $2. Five credits; spring. Utterback.

7. *Elementary Mechanics.* For engineering students lacking the mechanics of high school physics. Lab. fee, $2. No credit; autumn.

50-51. *Sound and Music.* For fine arts students only. Lab. fee, $2. Five credits a quarter; winter, spring. Sanderman.

54. *Photography for Amateurs.* Open to students who have had 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; autumn and winter. Osborn.

97. *Physics for Engineers.* Mechanics. Prerequisites, high school physics or Physics 7, and twelve hours of mathematics. Lab. fee, $2. Five credits; autumn, winter, spring. Brakel.

98. *Physics for Engineers.* Electricity. Prerequisite, Phys. 97. (See note.) Lab. fee, $2. Five credits; autumn, winter, spring. Brakel.

99. *Physics for Engineers.* Light and heat. Prerequisite, Phys. 97. (See note.) Lab. fee, $2. Five credits; autumn, winter, spring. Brakel.

101. *Introduction to Modern Theories.* Prerequisite, Phys. 3 or 6. Lab. fee, $2. Five credits. Two credits for graduate physics students; autumn. Utterback.

105. *Electricity.* Prerequisite, Phys. 3 or 6. Lab. fee, $2. Five credits; winter. Brakel.

*111. *Heat and Pyrometry.*

113. *Acoustics and Illumination.* For students in architecture only. Prerequisite, Phys. 2 or 5. Lab. fee, $2. Four credits; spring. Osborn.

115. *Applications of Photography to Science Work.* Prerequisite, special permission. Lab. fee, $4. Three credits; winter. Higgs.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

154. *Electrical Measurements.* For engineering students. Prerequisite, Phys. 97, 98, 99. Lab. fee, $4. Three credits; autumn, winter, spring. Brakel.

156. *Applications of Thermonic Vacuum Tubes.* Prerequisite, Physics 105 or 154. Lab. fee, $4. Three credits; autumn. Higgs.

*160. *Physical Optics.*

167, 168, 169. *Special Problems.* Prerequisite, special permission. Credit arranged; autumn, winter, spring. Staff.

170. *Spectrometry.* Prerequisite, 20 hours of physics. Lab. fee, $4. Five credits; spring. Osborn.

*185. *X-Rays and Radio-activity.*

191-192. *Analytical Mechanics.* Prerequisites, 20 hours of Physics and calculus. Three credits, fall; two credits, winter. Newbury.

COURSES FOR GRADUATES ONLY

200-201-202. *Dynamics.* Prerequisite, 30 hours of Physics. Three credits. Newbury, Utterback, Brakel.

*203-204-205. *Theoretical Electricity.*

*206-207. *Vibratory Motion and Sound.*

*210-211. *Quantum Theory and Atomic Structure.*

*212. *Theory of Spectroscopy.*

*213. *Fine Structure of Spectral Lines.*

*Not offered in 1930-1931.

215-216-217. *Seminar.* Prerequisite, graduate standing. 1 credit. Henderson.

220-221-222. *Electron Theory.* Prerequisite, 30 hours of physics. Two credits; autumn, winter, spring. Henderson.

*223. *Gaseous Discharge.*

*225. *Thermo Dynamics.*

*226. *Kinetic Theory of Gases.*

*230. *X-Rays and Crystal Structure.*

*240-241-242. *Theoretical Physics.*

250-251-252. *Research.* Credit arranged; autumn, winter, spring. Staff.

POLITICAL SCIENCE

Philosophy Hall

Professors Martin, George; Associate Professor Cole; Assistant Professors 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 Political Science 1. For upper division courses, Pol. Sci. 51, 52 and 53, 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. National Government; IV. Local Government. 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.

Programs must include a sequence of courses amounting to 11 credits in one group and at least five 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.

*Not offered in 1930-1931.

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. George.

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. George.

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. George.

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: Political Science 1. Recommended: Political Science 51, 52 or 53, and one of the following courses: Economics 1, Sociology 1, History 1-2. No prerequisites for Political Science 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 constitutonal principles; current constitutional controversies; fundamental legal rights and principles and ideals of American governments. Two credits; autumn, winter and 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. George.

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. George.

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. George.

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 legislaton, in the works of authoritative writers, and in the conduct of nations. Three credits a quarter; autumn, winter. Martin.

Group III—National Government

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. *American Political Parties.* Party history; federal and state party organization; nominations and elections; party control of the legislature; the President as party leader; theory of American party divisions; American public opinion; campaign methods; party responsibility; the rise of blocs. Five credits; spring. Cole.

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. Wilson.

154. *The Law of Public Administration.* The rights, duties and liabilities of public officers; relief against administrative action; extraordinary legal remedies; jurisdiction, conclusiveness, and judicial control; legal principles and tendencies in the development of public administration. Five credits; winter quarter. Wilson.

155. *The Prnciples of Public Administration.* The problem of administration; the organization of administration; the reorganization, proposed and completed, of national administration; personnel problems; material; problems of finance with emphasis on budgeting and accounting. Five credits; spring. Wilson.

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.* A study of the government and politics of Japan, China, Siam, and of semi-sovereign, federated, and dependent political entities of the Far East. Five credits; autumn.

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.* A study of the history of Federation in Australia and the relation between commonwealth and states, and the 1929 report on the constitution; the Dominion of Canada and its constitutional problems; the nature of the Union of South Africa; Ireland, the Home Rule and the Sinn Fein movements; the free State; New Zealand. Three credits; autumn. Mander.

Group IV—Local Government

161. *Municipal Government.* History and growth of cities; forms of city government; the municipal council; the city courts; the city and the

state; the charter; reforms in city governments; present-day issues in municipal government. Five credits; autumn. Wilson.

*162. *Municipal Administration.*

163. *State Government and Administration.* Colonial origins; state constitutions; the governor; the state legislatures; relation of the state to the nation; the states and law; popular methods of legislation; organization and methods of state administration; administrative reorganization of state governments, with special reference to Washington. Five credits; winter. Wilson.

*164. *Administration of Local Government.*

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. George.

221. *Seminar in International Organization.* Two to five credits; spring. Mander.

251. *Seminar in American Government and Politics.* Special subject for investigation: The drafting of the federal constitution. Three to five credits; autumn. Wilson.

256. *Seminar. Special Subject for Investigation.* Public opinion in relation to political processes. Three credits; winter. Cole.

Seminar in Oriental Diplomacy. See Oriental Studies 225-226-227.

PSYCHOLOGY

Philosophy Hall

Professors Smith, Guthrie, Wilson; Associate Professor Esper; Instructors 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 thinking. 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

*Not offered in 1930-1931.

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. Prerequisite, Psych. 1 and 108. Five credits; spring. Smith.

110. *History of Early Psychology.* The contributions to modern psychology from British associationism, faculty psychology, psychopathology, hypnotism, phrenology, and the early studies in sense physiology. Prerequisite, ten hours in psychology. Two credits; autumn. Gundlach.

111. *History of Recent Psychology.* The development of experimental psychology. Prerequisite, 10 hours psychology. Two credits; winter. Gundlach.

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 hours 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.* The nature of appreciation and an analysis of the factors which bring it about. Prerequisite, Psych. 1. Two credits; autumn. Guthrie.

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.

126. *Abnormal Psychology.* Description and explanation of abnormal behavior. Psychoneuroses, automatisms, "The Unconscious," dreams, and sleep. Prerequisite, ten credits in psychology. Five credits; spring. Guthrie.

131. *Child Psychology.* Individual and social development and their causes, from infancy to adult age, 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; Instructors W. Wilson, Simpson; Associates Hamilton, C. Wilson; Assistants Giuntoni, 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.

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.

Exceptional cases will be determined by the executive officer of this department.

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 Span. 1 (nor Ital.), 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. General Romanic

34, 35, 36, or 134, 135, 136. *General Romanic Literature.* (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 twofold:

1. 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.

2. To present to the students a brief survey of these three great Romanic literatures.

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 one of the three 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. Course may be entered any quarter. Three credits a quarter; autumn, winter, spring. Goggio.

Vulgar Latin. (See Latin 285, 286). Graduate students in this department who are working for the doctor's degree may be required to follow this course given in the department of Latin. Three credits a quarter; winter, spring.

II. 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, Educ. 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.

General Romanic Literature. 34, 35, 36, or 134, 135, 136. Three credits a quarter. ("I. General Romanic.") 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 an 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, Helmlingé, Chessex, Whittlesey, Simpson.

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, Chessex, Simpson.

107, 108*. *Themes.* Writing of original compositions upon assigned topics. Prerequisites, French 103, or 102 with grade of A. 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 1930-1931 the number is 107. Three credits; spring. Helmlingé.

118, 119, 120. *Survey of French Literature.* Lectures in English and collateral reading of English translations. Those who have studied French sufficiently will be assigned French texts to read. No prerequisites. Three credits a quarter; autumn, winter, spring. DeVries.

*121, 122, 123. *French Novel.*

124, 125, 126. *The Short Story.* Course conducted in French. Development of the short story from the fabliaux to modern times. Special attention will be given to the stories of Daudet, Maupassant, Bazin, and a few others, and many of their stories will be read and discussed. Prerequisite, French 6 and 9. Three credits a quarter; autumn, winter, spring. Helmlingé.

127, 128, 129. *Advanced Conversation for Majors.* Open only to majors and to those who, by their preparation, could qualify as 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.

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.

*Not offered in 1930-1931.

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. Chessex.

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. These courses are prerequisites to the teacher's course. Prerequisite, French 103 or 107. Two credits a quarter; autumn, winter. Frein, Chessex.

161, 162, 163. *Eighteenth Century Literature.* Lectures in French. Assigned reading and reports; the written reports may be in English or French, but discussions in class will be largely in French. Prerequisite, French 6 and 9, or equivalent. Two credits a quarter; autumn, winter, spring. Chessex.

*171, 172, 173. *Seventeenth Century Literature.*

Teachers' Course in French. See Education 75K.

COURSES FOR GRADUATES ONLY

*201, 202, 203. *Middle French and Sixteenth Century.*

*211, 212, 213. *French Criticism.*

221, 222, 223. *Old French Readings.* 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 in autumn and winter; two credits in spring quarter. Goggio.

231, 232, 233. *History of Old French Literature.* Lectures in French on the entire field of Old French literature. Assigned reading. For those who do not read Old French, many translations into modern French are available. Prerequisite, four years of French and graduate standing. Three credits a quarter; autumn, winter, spring. Frein.

*241, 242, 243. *French Historical Grammar.*

251, 252, 253. *Seminar in Modern French Literature.* The work will be concentrated each quarter upon one author of the nineteenth or twentieth centuries. Prerequisite; four years of French and graduate standing. Three 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. Prerequisite, four years of French and graduate standing. Two credits a quarter; autumn, winter, spring. Frein.

III. Italian

The department, through its scheme of alternate courses, offers enough work to satisfy the major or minor requirements. Students who desire to

*Not offered in 1930-1931.

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 Ital. 1 until 2 has been completed. Ital. 1 is repeated in winter and 2 in the spring. Five credits a quarter; autumn, winter, spring. Giuntoni.

111, 112, 113. *Modern Italian Literature.* Prose and poetry of the eighteenth and nineteenth centuries. Lectures and collateral reading. Composition. Prerequisite, Ital. 3, or 2 with grade of B. Three credits a quarter; autumn, winter, spring. Goggio.

*118, 119, 120. *Survey of Italian Literature.*

*121, 122, 123. *The Italian Novel.*

181, 182. *Dante.* In English. Open to all. 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. Two credits a quarter; autumn, winter. Goggio.

184. *Renaissance Literature of Italy.* In English. Open to all. Emphasis will be laid upon the literary works of Petrarch and Boccaccio especially, but the works of Machiavelli, Castiglione, Cellini and Tasso will be read and discussed. Lectures in English. Reading in English, or Italian, if the student can read Italian. Two credits; spring. Goggio.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Italian Literature of the XV and XVIc.* Open to all students who can read Italian. Research according to ability and special interests of the students. Two credits a quarter; autumn, winter, spring. Goggio.

*221, 222, 223. *Italian Literature of the XIII and XIVc.*

*231, 232, 233. *The Works of Dante, particularly the Divine Comedy.*

*243. *Italian Historical Grammar.*

IV. Provencal

223. *Old Provençal.* Readings, mostly epic and lyric. Three credits; spring. Goggio.

V. Spanish

Requirements of the department: Spanish 159, 101, 102, 103, Educ. 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 Spanish 4, 5, 6, making a five-hour course. Prerequisite to Span. 7 is 3. Spanish 7 is prerequisite to 8. Two credits a quarter; autumn, winter, spring.

*Not offered in 1930-1931.

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 readings, lectures. Prerequisite, Span. 6. Two credits a quarter; autumn, winter, spring. Garcia-Prada, Wilson, Vargas.

General Romanic Literature. 34, 35, 36, or 134, 135, 136. Three credits a quarter. ("I. *General Romanic*"). Goggio.

*121, 122, 123. *The Novel.*

*131. *Lyric Poetry.*

141, 142, 143. *Spanish Drama.* Origins and early development; the Golden Age; Modern Period. Selected texts, collateral reading, lectures, reports. Prerequisite, Span. 102 or equivalent. Three credits a quarter; autumn, winter, spring. Umphrey.

159. *Advanced Syntax.* Problems in syntax studied from the teacher's standpoint. Prerequisites, Span. 101, 102. Three credits; spring. Umphrey.

171, 172, 173. *Seventeenth Century Literature.* One of the great writers of the 16th and 17th centuries, Cervantes, Lope de Vega, Calderón, etc., will be selected each quarter for special study. Prerequisite, Span. 119, or equivalent. Two credits a quarter; autumn, winter, spring. 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, Umphrey; spring, Garcia-Prada.

Teachers' Course in Spanish. See Educ. 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.

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 1930-1931.

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, McKenzie (Chairman);[1] *Associate Professor Price; Assistant Professors Hayner, Stern; Associates Hathway, Guthrie, Coventry; Assistant Martin.*

Sociology treats of the development, organization and function of human groups. Its general purpose is to explain the relations of institutions; to stimulate a critical and constructive attitude toward programs of reform and furnish a sound basis of information for intelligent citizenship. It prepares for advanced study, field investigation, teaching and journalism, public health and institutional management; and supplements specialized training along these lines.

Sociology is related to many problems treated in anthropology, biology, psychology, history, economics, politics, education, home economics, and literature. Majors are urged to consult members of the department staff regarding their electives. Work in other departments may be essential for success in this field, and may, when approved, be credited toward advanced requirements. Students should consult the department of sociology leaflet for a list of basic and supplementary courses.

Students are advised to postpone work in sociology until lower division requirements in biology, psychology, economics and political science are completed. *Sociology I or its equivalent, is prerequisite for those majoring or taking systematic work in the department, and satisfies minimum requirements in this subject. In the case of upper division students, Sociology* 150 *may be substituted for the introductory course. The following are fundamental for advanced work and should be taken by major students before electing special lines: Courses* 55, 66, 131.

Further work is arranged along these lines:

A. Social Problems and Methods of Reconstruction offer prevocational instruction leading to two general lines of social work:

*Not offered in 1930-1931.
[1] Absent on leave, 1930- 1931.

(1) *Case and Group Work.*

(2) *Community Organization.*

B. Social Theory and Methods of Investigation offer preliminary training and background for vocational use as follows:

(1) *Teachers of Social Science.*

(2) *Social Investigation.*

A plan for sequence of courses preparing for each of these lines of work may be found in the department of sociology leaflet.

For a major in sociology a minimum of 36 credits is required. At least 50 per cent of the hours in the major must be in upper division courses. Upper division courses should not be elected before such elementary work as instructors in special fields may suggest is completed. Courses numbered over 200 are for graduates. Advanced students are required to secure the approval of their program by the executive officer of this department before completing their registration. Graduate students must complete undergraduate requirements before being accepted as candidates for the master's or doctor's degree in sociology.

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. Price, Stern, Hayner, Guthrie, Coventry, 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, spring. McKenzie.

56. *The Family.* Family and marriage customs among preliterate peoples; processes and mechanisms of family interaction; the family as an institution; the home; the family and the community; family disorganization and reorganization. Materials fee, $2. Three credits; autumn. Hayner.

57. *Child Welfare.* Rights of childhood to health, education, recreation, protection; measures now in use to secure them. Three credits; winter. Hathway.

58. *House and Home.* A study of housing problems in America with attention to the transition from pioneer homestead and individual house to apartment, hotel and auto camp and the significance of this transition for the family and its members. Three credits; winter. Hayner.

*61. *The Small Town.*

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

*Not offered in 1930-1931.

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. McKenzie.

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. Prerequisite, 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.

80. *Social Pathology.* The social factors involved and methods of dealing with physical defectiveness, feeblemindedness, insanity, narcotics, alcoholism, prostitution, poverty, vagrancy, juvenile and adult delinquency. Five credits; autumn. Hayner.

*90. *Social Change.*

94. *Culture Contact in the Pacific Area.* The foreign influences—economic, missionary, diplomatic, etc.,—affecting Oriental and Pacific civilizations, and the native peoples' reactions to them, as affected by various conditioning factors. Three credits; autumn. Price.

95. *Culture Conflict in the Pacific Area.* The analysis of typical conflict situations between aliens and natives and among native groups themselves, including the psychology of the semi-Westernized nationals, as influenced by divergency in cultures, groups, and interests. Three credits; winter. Price.

96. *Culture Accommodation in the Pacific Area.* A study of the more permanent adjustments taking place in Oriental and Pacific civilizations as a result of modern contacts with the West and of the conditions making for such permanence. Three credits; spring. Price.

*97. *America in Civilization.*

103. *Problems of Maladjustment.* (Offered in Extension Service.)

*105. *Industrial Groups.*

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.

*Not offered in 1930-1931.

*132. *Social Exhibits.*

140. *Population.* A study of growth, composition and distribution of world populations. Prerequisite, five hours sociology or five hours economics. Three credits; autumn. McKenzie.

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. McKenzie.

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. McKenzie.

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. Prerequisite, junior standing and Soc. 1, or 10 hours in social science and psychology. Five credits; autumn, spring. Price.

152. *Social Control.* Pressure and manipulation within various groupings ranging from stable institutionalized ones to temporary crowds and publics. Prerequisite, five hours psychology or social science. Five credits; winter. Price.

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. Five credits; winter. Hayner.

154. *Administration of Social Agencies.* Open to seniors and graduates. Two credits; winter. 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.

158. *Personality Problems.* Survey of the literature on personality; case studies of personality problems. Five credits; spring. Guthrie.

*159. *Penology.*

164. *Social Education.* Purpose, content and method of courses intended to promote good citizenship. Critical discussion of programs and texts used

*Not offered in 1930-1931.

in Washington schools. Recommended for teachers of social science subjects. Prerequisite, fifteen hours social science. Two credits; spring. Woolston.

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, 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.

*191. *Advanced Case Work.*

194. *History of Social Thought I: From Primitive Times to the Industrial Revolution.* Movements in social thought are presented through the teachings of outstanding representatives who are interpreted in their cultural, economic, ideological, political, and religious setting. Prerequisite, 10 hours sociology or equivalent. Three credits; autumn. Stern.

195. *History of Social Thought II: From the Industrial Revolution to Contemporary Times.* Prerequisite, 10 hours sociology or equivalent. Three credits; winter. Stern.

196. *History of Social Thought III: Contemporary.* Prerequisite, 10 hours sociology or equivalent. Three credits; spring. Stern.

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 communty problems. Prerequisite, graduate standing. Two credits a quarter; autumn, winter, spring. McKenzie.

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.

*Not offered in 1930-1931.

ZOOLOGY

Science Hall

Professor Kincaid; Associate Professors Guberlet, E. V. Smith; Assistant Professors Miller, Hatch; Instructor Bolton; Associate Goodsell.

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.

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. Bolton.

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. Bolton.

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. 1-2 or equivalent. Lab. fee, $2. Five credits.

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. Hatch.

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. Bolton.

**Will be offered if a sufficient number of students elect the course.

131. *History of Zoology.* The history of zoology during ancient, medieval and modern times. Prerequisite, thirty hours 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, twenty hours in zoology or physiology. Lab. fee, $2. Three credits; autumn, winter, spring. Staff.

Teachers' Course in Zoology. See. Educ. 75Z.

COURSES FOR GRADUATES ONLY

201, 202, 203. *Research.* Students capable of carrying on independent work will be assigned problems under direction of an instructor. Prerequisite, twenty-five hours of zoology. Credit to be arranged. Lab. fee, 50c per credit hour. 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.

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.

53-54-55. *Physiology.* Adapted to meet the requirements of students expecting to teach the subject in high school. Required of students majoring in physical education and nursing; recommended for students in dietetics and in sanitary science. Lab. fee, $4. Five credits; autumn, winter, spring. Smith.

**115. *Principles of General Physiology.* Application of the laws of physics and chemistry to physiological processes. Prerequisite, one year each, zoology, chemistry and physics. Lab. fee, $4. Five credits; autumn. Smith.

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. Five credits; winter. Prerequisite, Physiology 7 and Chemistry 23. Smith.

**Will be offered if a sufficient number of students elect the course.

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 1929 there was a student body of 3,039 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 1931 may be completed on or before Tuesday, June 16. Students expecting to be in attendance during the second term only may register on or before Friday, July 24. 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 18 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 were offered experimentally in 1930 and will be continued and expanded as the demand grows.

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 OCEANOGRAPHICAL LABORATORIES

FRIDAY HARBOR, WASHINGTON

The Staff*

Thomas G. Thompson, Ph.D.; *Professor of Chemistry, and Director of Oceanographical Laboratories*
John E. Guberlet, Ph.D.....*Professor of Zoology*
Robert C. Miller, Ph.D.....*Assistant Professor of Zoology*
Lyman D. Phifer, M.S.....*Associate in Botany*
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*

Scope of the Work. The University of Washington Oceanographical Laboratories were created by the action of the Board of Regents on March 29, 1930. The purpose of the organization is to correlate and coordinate the research dealing with various problems of the sea which previously were conducted independently by the several departments of the College of Science. The oceanographical laboratories also include the buildings and equipment located on a 485 acre tract with two miles of shore line near Friday Harbor and formerly known as the Puget Sound Biological Station. 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 moderately 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. During the summer quarter much of the work is centered in the branch laboratories at Friday Harbor.

Research. Properly prepared students are assigned research problems under different members of the staff according to the major interest of the student. The laboratories are open throughout the year to visiting research workers. At present there are accommodations for only a limited number; communications concerning these should be addressed to the director.

*The staff members for geology, bacteriology, and physiology have not yet been selected.

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 twenty-eight 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 1930-31 the following activities:

1. Evening Campus Classes
2. Off Campus Classes (Seattle, Everett)
3. Home Study
4. Graduate Medical Lectures
5. Graduate Nurses' Institute
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 thirteenth Graduate Medical Lectures were held July 14 to 18, 1929, 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 Seventh Graduate Nurses' Institute, June 5 to 7, inclusive.

OFFICE OF PUBLICATIONS

Commerce Hall

Westmoreland, Harriett.....*Publications Editor*

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 Puget Sound Biological Station Series,* 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, 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 Oceanographical 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.

The Murrelet, bulletin of the Pacific Northwest Bird and Mammal Society, is published by the Washington State Museum every four months. The bulletin deals directly with the bird and mammal life of the Pacific Northwest. Address, Washington State Museum, 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.

*Now *The Publications in Oceanography.*

DEGREES

BACHELOR'S DEGREES

COLLEGE OF LIBERAL ARTS

BACHELOR OF ARTS

August, 1928

Allen, Edith Helen
Anderson, Anton L.
Anderson, Martha
Anderson, Theresa E.
Arend, Harry O.
Bailey, Katharine Amaryllis
Belcher, Thelma Brooks
Bereiter, Catherine Alice
Boldan, Veronica
Butler, Gertrude M.
Connell, Helen Kennedy
Cramer, Leila Buckman
Cummings, Kathryn Miriam
Dick, Gordon Wayne
Dingle, Leila Venice
Dressler, Mildred
Duffy, Edwin H.
Evanson, Ella Clarissa
Fries, Edward Stewart
Gardner, Carl Lessey
Geisness, Evelyn Alice
Hutcheson, Betty
Iorns, Eleanor Lewis (*cum laude*)
Johnson, Carl Vinston
Johnsone, Charles Ronald
Kienast, Vera Louise
Kyle, James Henderson, Jr.
Laubscher, Ruth
Maguire, Josephine (Sister Mary Joan)
Major, Sidney (*cum laude*)
Mathewson, Edward Walter
Mayrand, Anita
Nylen, Donald
Pearce, Marion E.
Pecar, Alma May
Pellegrini, Frank A.
Pratt, Marcus Wesley
Ralls, Roberta (*cum laude*)
Rickel, Ruth Eloise
Robinson, Stella Salome
Ruddy, Gladys Z.
Russel, France Forbis
Simon, Henrietta
Sommer, Eugenie
Troy, Thomas B.
Wales, Helen Maude (*cum laude*)
Walker, Mary Agnes (Sister Mary Clementia)
Watts, Catharine Charlotte (*cum laude*)
Wilson, Elda Ruth
Yen, Jung-Hsu

December, 1928

Baker, Gilbert Mayes
Cauby, Dorothy Dell
Connick, Janet Gertrude (*magna cum laude*)
Dodson, Mary Eleanor
Evans, Frances Elizabeth
Fesenmaier, Athyleen Myrtle
Garfield, Viola E.
Greely, Cyril Ray
Jordan, Gerald Moray
Joubert, Edward Richard
Leebhoff, Herbert
*Lynn, Austin
Mitchell, Mary Sidney
Mollestad, Howard Mace
Navea, Vicente O.
Parker, Dorothy Jean
Phelan, Grace Elizabeth
Smith, Ferguson Grant
Thompson, Gladine
Valentine, John Joseph III
Wheeler, Wallace Bert
White, Mabel Nell
Woodworth, Adelaide
Youell, John

Graduates are listed according to the dates on which they received their degrees.
*Died, October 22, 1928.

March, 1929

Adams, Joseph Peter
Amundsen, Elliott Marshall
Bagby, Luretta Della
Beamish, Earnest Lovell
Frayn, Robert Mortimere
Fujii, Yoshito
Gamble, Robert Wagoner
Gershon, Perry R.
Gibson, Clara Agnes
Glickman, Abe Edward
Hagen, Irene Charlotte
McGrath, Gertrude Mary
Malinao, Gerardo Delfin
Morgan, Cecil Alven
Neeley, Helen Elizabeth
Okazaki, Iwao R.
Page, Frederick John
Pilkington, Phyllis Lonnon
Singer, Harold Isadore
Staser, Votaw
Stokes, Margaret Ruth
Tucker, William Clarence
Wichman, Katherine Kief
Woelffel, Lucy Marjory

June, 1929

Adair, Helen Janet
Almquist, Edward Emanuel
Anderson, Hulda Edna
Andrew, Helen Katherine
Andrus, Eleanor (*cum laude*)
Anfin, Caroline Martha
Angus, Dulcie Alberta
Applegate, Esther Matthews (*cum laude*)
Armistead, Helen Louise
Aronin, Anne (*summa cum laude*)
Baird, Harriet Warner (*cum laude*)
Baker, Irene H.
Barbour, Dana Mills (*magna cum laude*)
Barnett, Kelso Clarke
Bartholet, Juliana Maria
Bashaw, Kathryn Lois
Bass, John Milton
Belden, Bernice Eileen (*magna cum laude*)
Berenson, Milton Harold
Brady, Thalia E.
Brown, Edward G. (*magna cum laude*)
Brown, Pauline (*cum laude*)
Brownell, Eugene Bronson
Brownfield, Floyd K.
Butler, Mildred Grace
Calhoun, Gerald Adams
Canfield, Evelyn
Carter, Glenn Everett
Case, Georgia Anita
Churchill, Amy Kinnaird
Clark, Vivian Vernice
Cook, George Samuel
Cornue, Frank Gordon
Culwell, Louise
Curry, Eula Marie
Cutts, Elmer H.
Davidson, William Moore
Dearing, Ruth Isabelle
Delbar, Helen Elizabeth
Ditlevson, Loren Willis
Ditter, Florence
Dohm, Dorothy G.
Dorris, Anne Theresa
Dowler, Dorothy Virginia
Durham, Howard Ellis
Eng, Oscar Clarence
Ewing, Elsie Margaret
Fahey, Florence Marion
Fellows, Hollis Ainsworth
Fitch, Susan Hovey
Fitz, Olive Dyer
Flanders, Winona
Flood, William Harry
Fogarty, Mary
Galima, Leonardo C.
Gilmer, Mary Gertrude (*cum laude*)
Gosa, Earl H.
Gourlay, Robert Cross
Greenough, Joseph Warren Jr.
Grunbaum, Helen
Grunbaum, Jane Vera
Gulick, Margaret
Hallstrom, Charles William
Hamlin, Margaret
Harby, Sam Farkas (*cum laude*)
Hardy, Martha Elizabeth (*summa cum laude*)
Hartle, Frances Elizabeth
Hastert, Louise Mary
Hays, Loyal Berkeley
Hegdahl, Doris Claire
Hicker, Catherine Manley
Hinderer, Winfred Edgar
Hitchman, Robert Bruce (*cum laude*)
Hjermstad, Martha S.
Hochfeld, Alvin

Hooker, Harry LeRoy
Hopkins, Agnes Macdougal (*summa cum laude*)
Ives, Luella Alaska
Jackson, Homer Burton
Jackson, Julia (*cum laude*)
Jackson, Kathleen M. (*cum laude*)
Jackson, Paul Joseph
Jensen, Gertrude Caroline
Johannsson, Lincoln Stigur
Johnson, Hazel Josephine
Johnson, Robert Wallace
Judd, Margaret
Jusseit, Alfred Berne
Karr, Payne
Keith, Elva
Keith, Vernadel Eugenia
Kelly, Georgia Frances
Kizer, Edith May
Lawrence, Anne
Layton, Clarence Elmer
Le Blond, Nedra Lucille
Lewis, Adelaide Fulton
Lewkowitz, Dorothy
Lippincott, Crispin
Long, Kathyrine Scott Hamilton
MacDonald, Richard Crosley
McHugh, Eileen Anne
MacKintosh, Jean
McLeod, Sarah H.
McMeans, Robert Wilser
McReavy, Clare A.
Maas, Johannette Anne
Macklem, Beth Clair
Madden, Amy Lee
Main, Carroll
Martin, Thelma Elizabeth
Meagher, Jane
Meany, Edmond S. Jr.
Meservey, Marian E.
Middleton, Cowper John
Miller, Thomas Kennedy
Mills, Eileen (*magna cum laude*)
Moe, Myrtle Josephine
Muir, Robert A.
Mullen, Frances Helen
Munro, James Eddy
Murray, Margaret Carolyn
Nakabayashi, Annie Kiku
Nichols, Julia Hull
Ninomiya, Shigeaki
Nixon, Clayton Fred
Olin, Frances Jane
Olsen, Howard M.
Olsen, Thelma Louise
Olson, Alvin Cornelius
Olson, Katherine Eleanor
Oswald, Mary Elizabeth
Otani, Kikuye
Padley, Willine Julianna (*magna cum laude*)
Payzant, Marion Alice
Pederson, Russell Theodore
Plimpton, William Sherman
Porter, William Laurie
Potts, Margaret Evelyn
Pratt, Dorothea Helen
Prochowska, Jadwiga
Quigley, Dorothy Margaret
Raudenbush, George C.
Reed, William Garrard
Rhodes, Helen Harvey (*magna cum laude*)
Riley, Frances Marcene
Rose, Robert
Rosen, William
Ross, Harriett Airey
Ruff, Frank Joseph
Rupp, Alice Gertrude
Ryan, William Clayton
Sarki, Lillian Olivia
Saxton, Ralph Cole Jr.
Schreuder, Ludwig I.
Schultheis, Frederick Dwight
Schuman, Harry Leon
Searls, Helen Elizabeth (*summa cum laude*)
Sewall, Elizabeth Russell
Shank, Virginia
Shelton, Helen Elsie
Shih, Bacon
Sisemore, Linsy Orth
Smith, Otis Eugene
Smith, A. Zanonia
Snyder, Helen V. (*magna cum laude*)
Somers, Eleanor
Sorenson, Englebertha Elizabeth
Stangeland, Helen Jane (*cum laude*)
Stanley, Ethelbert Carter (*cum laude*)
Steiner, Griffith Dean
Stewart, Emily Randolph
Stipek, Gladys Ruth
Stoy, Nell Stuart
Stritch, Irene Isabel (*magna cum laude*)
Strother, Charles Riddell (*cum laude*)
Sturges, Beatrice Evelyn
Sutherland, Blanche

Swan, Helen Edington
Thomson, Hermia Worthy
Throssell, Wilbur I.
Torbitt, Harry Edward
Toyota, Norio
Tseng, Chi-Tung
Tuttle, Valgene
Van Valin, C. Frederick
Velikanje, Stanley P.
Wakeman, Willard L.
Warren, George Fisher
Weisberger, Helen Estelle
Wentland, Elmer George
Wester, Virginia Lee
Westmore, Halward Garfield
Whalley, Theodosia
Wicker, Jessie
Wiedman, Harriett Elsa
Wiley, Alice M.
Williams, De Witt (*magna cum laude*)
Williams, Randall S. Jr.
Wilson, Olene
Wing, Ivan Wilford
Wolff, Lois Josephine
Wood, Janet Margaret Tudhope
Woolpert, Dorothea Dorcas
Wright, Frances Eleanor (*magna cum laude*)
Wright, Mary Frances
Wunderlich, Alvina June

COLLEGE OF SCIENCE

August, 1928

BACHELOR OF SCIENCE

Boyle, James Watson
Brownton, Sheldon Seymour
DeGraw, Cullen Jerrold
Fickel, Ruth Elizabeth
McVay, John P.
Mumford, Clarence Bird
Renshaw, Minard R.
Wells, Marjorie Ethel
Young, Kate Elizabeth

BACHELOR OF SCIENCE IN BOTANY

Thomas, Mary Leoniece

BACHELOR OF SCIENCE IN HOME ECONOMICS

Andersgaard, Amber Georgia
Armstrong, Harriet Elizabeth
Bleakney, Catharine Lida
Browning, Kathleen G.
Dormann, Helen Mary
Grady, Mary Alice (*cum laude*)
Kuhefuss, Helen Mary
Skreen, Evelyn Alveena
Smaby, Marie Henriette
West, Florence Lucile

BACHELOR OF SCIENCE IN NURSING

Fry, Nellie Amanda
Hartley, Florence

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Smaby, Sylvia Hortense

BACHELOR OF SCIENCE IN ZOOLOGY

Chaney, Bessie Frances
Warner, Wilma Lea

December, 1928

BACHELOR OF SCIENCE

Adams, Clyde B.
Karlsten, Eric
Snevely, Florence

BACHELOR OF SCIENCE IN BOTANY

Southard, Lloyd C.

BACHELOR OF SCIENCE IN HOME ECONOMICS

Jensen, Ellen Marie

BACHELOR OF SCIENCE IN NURSING

Boyer, Elizabeth Virginia (*summa cum laude*)

BACHELOR OF SCIENCE IN PHYSICS

Skinner, Selby Millmore (*summa cum laude*)

March, 1929

BACHELOR OF SCIENCE

Brobeck, Lester Ferdinand
Kingston, George Ross
Shager, Grant Haddon
Walter, Gertrude Isabelle

BACHELOR OF SCIENCE IN ANATOMY

Louge, Richard Webster
Lucas, Oscar Charles

BACHELOR OF SCIENCE IN HOME ECONOMICS

Dykeman, Lola Towns
Marshall, Vera Frances
Moulton, Edith Alicia
Nudd, Barbara Elizabeth
Watkins, Lois Adeline

BACHELOR OF SCIENCE IN ZOOLOGY

Troxell, Beryl

June, 1929

BACHELOR OF SCIENCE

Baker, Alfred
Bash, Francis Cozad
Beach, Donald Watson
Chew, Eric MacMillan
Church, Margaret
Chute, Lionel H.
Commerée, Viateur M.
Dogan, James Louis
Fisk, Roy Thomas
Gideon, Edith M. L. (*magna cum laude*)
Green, Norman E.
Greenwell, Joseph Luther Jr.
Grier, Mary Catharine

Gunderson, Clayton Bruget
Haddon, Joseph Elbert
Hoard, Ruth Vianna
Hurlbut, Clarence W.
Kenyon, Marcus Monroe
Lauri, W. Armas
Leedy, Virginia (*cum laude*)
Lynch, Herbert Cornelius
Martin, Carl LeRoy
Morris, Robert Aitken
Olson, Kenneth Barrie
Osborn, Melba
Reed, Robert Marion (*magna cum laude*)
Ricen, Helen
Rigg, Raymond R.
Sanders, Vera Bernadine
Soderberg, Miriam
Thayer, James Durward
White, Hildegarde Louise

BACHELOR OF SCIENCE IN ANATOMY

Colcock, Bentley Prescott
Isenhart, George Boyd (*cum laude*)
Schaill, Clayton M.

BACHELOR OF SCIENCE IN BOTANY

Anunciacion, Lucas M.
Bowen, Margaret Isabel
O'Leary, Daniel Keith (*cum laude*)

BACHELOR OF SCIENCE IN CHEMISTRY

Bonnar, Robert Underwood (*cum laude*)
Gow, Paul Louden (*magna cum laude*)
Hayward, Allen John (*cum laude*)
Hegg, Arnold
Lawless, Ruth Ella
Leonard, William Clyde
Manfred, Nicholas Alexander
Scott, Norman de Blois
Taylor, Howard Jean
Thomas, Bertram David
Wirth, Henry Edgar (*magna cum laude*)

BACHELOR OF SCIENCE IN HOME ECONOMICS

Anderson, Carletta Karina
Anderson, Helen Marie
Banton, Mary-Elizabeth
Beisse, Gertrude Carolyn
Black, Douris Anne
Brown, Katharine
Clark, Rhoda Woodall
Conway, Miriam Alva
Cooper, Claire Irene
Coughlin, Margaret Mary
de Beaulieu, Octavie Anna Hudon
Duff, Marian Louise (*cum laude*)
Gibb, Minnie Margaret
Horn, Margaret Lillian
Kolstad, Beatrice Mae
Lewis, Myra Winifred
McFaddin, Frances May
Marriott, Frances Ann
Mills, Catherine S.
Moore, Eloise
Mrachek, Elmina
Ross, Margaret Mary
Schwartz, Belda Claire
Scofield, Irene Mathea
Smith, Helen Faye
Smith, Joyce Floy
Stafford, Marie K.
Starr, Mary Elizabeth
Stimpson, Mabel R.
Valentine, Leila Hope
Van Camp, Eunice
Willigar, Florence Mertie

BACHELOR OF SCIENCE IN MILITARY SCIENCE

Griep, Elmer Fredrick

BACHELOR OF SCIENCE IN NURSING

Bailey, Florence Miriam
Boyer, Ruth Marietta (*magna cum laude*)
Pattee, Zelle
Ramstad, Lydia Josephine

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Bergstrom, Charlotte Mary
Genther, Benicia
Gillespie, Hazel E.
Johnson, Emily Helen
Johnston, Bernice
Kirshner, Augusta
MacDonald, Verna A.
Miller, Alice Frances
Pellegrini, Marion Martha
Rabel, Marjorie
Rathbun, Elizabeth
Rattray, Marjorie Elizabeth
Sandner, Lucile
Shearer, Florence Martha
Smith, Lenore Christine
Stevens, Gladys M.
Tefft, Dorothea June

BACHELOR OF SCIENCE IN ZOOLOGY

Dahlstrom, Dorothea Marie
Hunter, Maxwell Robert
Jones, Mildred Elinor
Rhind, Earl S.

SCHOOL OF EDUCATION

August, 1928

BACHELOR OF ARTS IN EDUCATION

Bennett, Mabel Alma
Blanchard, Ida
Bloom, Elizabeth Babcock
Boettcher, Antone Robert (*cum laude*)
Bowen, Alice
Burns, Eugene Emanuel
Burson, Dorothy
Busler, Edna Ruth
Cabatit, Ireneo Ramos
Carter, Elizabeth Hope
Cody, Mary Ellen
Coulter, Dorothy Bernice
Crim, Dorothy Marie
Darby, Edith Belle (*cum laude*)
Dodge, Bradley M.
Duncan, Charles Anderson
Durrwachter, Hilda Marie (*cum laude*)
Eckelson, Genevieve Ella
Everett, Pauline O. (*cum laude*)
Fanselow, Fern Louise
Feley, Anne Caroline
Fitzsimmons, Mary
Gellermann, Mildred Wright (*cum laude*)
Henderson, Grace C.
Hicks, Helen Barbara
Hurley, Mary Dorothy (Sister Rosena)
Jackson, Elizabeth Jane
Johnson, Vivian Henrietta
Jones, Annie Laura
Klemptner, Ellen
Lee, Samuel Benton
Lefebvre, Aimee
McDonald, Vernon Charleton
McMahan, Rene Gertrude
Moffatt, Catherine A. (Sister Mary Eulalia Teresa)
Montgomery, Samuel
Moore, Mabel M.
Odell, Ruth Marian
Olson, Irene
Payette, Gertrude F. (Sister Mary Aquin)
Quigley, Margaret Helen
Rasmussen, Emma M.
Richmond, Claude
Robarge, Edmere Amanda
Robison, Cloyd Leslie
Rogozina, Raisa Andreevna
Rose, Frances Dola
Russell, John Beaucamp
Sandall, Inez Fae
Smith, Edith Ralston
Sullivan, Nell Irene
Tennyson, Florence L.
Troutman, Samuel Paul (*summa cum laude*)
Walker, Horace Everett
Wallace, Glenn Irving (*cum laude*)
Walters, Helen Elizabeth
Wendler, Florence Mildred
Wiggins, Julia Jeannette

BACHELOR OF SCIENCE IN EDUCATION

Bremner, Raymond Wilson
Brooks, Sheldon
Hoverson, Julius C. G.
Nelson, Olga Amelia
Osborn, Glenn
Rairdon, Edward Earl
Stucky, Phillip Paul

December, 1928

BACHELOR OF ARTS IN EDUCATION

Ablan, Federico Blanco
Huse, Esther L.
Kiekenapp, Hortense
Merigold, Florence Elizabeth
Pascual, Narciso P.
Stowell, Lillian (*cum laude*)
Walter, Fern
Woesner, Inez Estelle
Wyman, Bernice Lucille

BACHELOR OF SCIENCE IN EDUCATION

Beller, Jack

March, 1929

BACHELOR OF ARTS IN EDUCATION

Aldrich, Dorothy Carlisle
Bowman, Nelle Hazel
Kinney, John Melvin
Linderman, Paul Booth
Linton, Geraldine Mae
Mort, Hazel Blanche
Patterson, Bertha Patty

June, 1929

BACHELOR OF ARTS IN EDUCATION

Abel, Dorothy Louise
Adamson, Lee James
Agar, Catharine Eleanor
Ahlberg, Vyolet
Anderson, Mary Margaret
Arestad, Sverre
Austin, Mary Cathern
Barrett, John Parrish
Bentley, Gladys Ann
Bernardino, Alejandro L.
Blosser, Stella Van Orsdall
Bohanon, Lawrence Hobart
Borgen, Bernice Marilyn
Boyd, Helen Galvin (*cum laude*)
Breen, Margaret Josephine
Buck, Helen Marian
Carlson, Clement John
Cassedy, Margaret Mary (*magna cum laude*)
Crawford, Hazel
Crawford, Leslie G.
Culver, Florian
Day, Josephine Elizabeth
De Long, Edyth
Doernbecher, Dorothy
Doran, Evelyn
Dowty, Dorothea (*magna cum laude*)
Doyle, Mary Margaret
Faussett, Madge Gilmore
Fish, Vynor Starr
Fitzgerald, Petronilla
Fowler, Sophia Rae
Froude, Ruth E.
Gelhaus, Dorothy Mary
Gray, Andrew Eric
Graza y Portugal, Pedro
Henry, Rossie Ann
Hicks, Esther O.
Hilzinger, Julia M.
Hochtritt, Helen Grace
Huhta, Elmer
Jergensen, Emma Louise
Jones, Ada Cleo (*cum laude*)
Jones, Bernice
Kelsey, Anna Louise
Kirk, Margaret L.
Kryger, Chris Jr.
Lake, Florence Melba Esstella
Lamson, Florence A.

Larson, Ilene Phoebe
Leik, Mary Frances
Leipheimer, Marielouise
Lieb, Edwin A.
Lockwood, Marie Frances
Lovejoy, Leah Calesta (*magna cum laude*)
Miner, Edith Moorhead
Morris, Frances Catherine
Mort, Edith J.
Murray, Julia Ann
Oliver, Fred L.
Parish, Mildred Beatrice
Parmeter, Kenneth Frederick
Pence, Omer Othman
Petersen, Bernice Mary
Randall, E. Catherine
Rutter, Beatrice C.
Schlerman, Mary Agnes
Short, Arline Lucile
Staff, A. Mildred
Stentzel, Lena
Stephens, Ada Irene
Sullivan, Jennie Elizabeth
Tallman, Bertha Frances
Thordarson, Thordur Roy
Thurman, Ruth
Valverde, Winnie
West, Gladys Elizabeth
Widmann, Rosemary
Williams, James Gerald
Wyngarden, John L.

BACHELOR OF SCIENCE IN EDUCATION

Flanagan, John Clemans
Fleming, Glenn Barr
Glover, Harriet Frances
Harrington, Mary Geraldine
Littel, Estella Marie
Lumley, Ellsworth Du Ganne
McDermott, Paul Frederick
McNeilly, Glenn Duncan
Nettleblad, Dora Anna
Peek, Clifford L.
Stewart, Daisy Johnson
Stickney, Lyman Burns
Thorsteinson, Elsa Dorothea
Wright, Monica Permile

COLLEGE OF FINE ARTS

August, 1928

BACHELOR OF MUSIC

Buss, Hilda (Sister Mary Vera)
Cook, Parker Eugene
Lyons, Mary
Parkinson, Doris Blanche
Zoeller, Ursula (Sister M. Francesca)

BACHELOR OF ARCHITECTURE

Osterman, Hugo William

BACHELOR OF FINE ARTS

Gray, Helen Elizabeth
Nicholson, Catherine Josephine

December, 1928

BACHELOR OF MUSIC

Blacknell, Lawrence Herbert
Boudin, Lillian Marie
Thomas, George William
Turley, Elva Bernice

BACHELOR OF FINE ARTS

Stallings, Litta Ball

March, 1929

BACHELOR OF ARTS IN MUSIC

Fryer, Lucia Elizabeth
Kessler, Rhea A.
Paz y Peralta, Leonila

BACHELOR OF ARCHITECTURE

Gruber, Foster Moore

June, 1929

BACHELOR OF ARTS IN MUSIC

Evans, Margaret Virginia
Horsfall, Jane Elizabeth
McMullen, Edwin Lyle
Parker, Esther June

BACHELOR OF MUSIC

Baker, Isabel McArthur (*magna cum laude*)
Burns, Ethel Leone
Carlson, Helen E.
Challis, Henrietta Isabella
Coffin, Sarah Ruth
Cook, Florania Mae
Edlatz, Danica Lucille
Ellington, Evelyn Mildred
England, Olga
Gray, Mary Anne
Higgins, Kathryn Elizabeth
Jensen, Helen Fairchild
Kemp, L. Maurine
Kergan, Phyllis Adaline
Landeck, Violet Maude
McClelland, Victor Hubbard
McIntosh, Loys Maude
McIntosh, Margery Phidelia (*cum laude*)
McNabney, Jennie (*cum laude*)
Meisnest, Helen Louise
Miller, Helen Grace
Nelson, Mildred Elaine
O'Meara, Erma Kathryn
Plamondon, Vivienne
Rawson, Frances I.
Remley, Elizabeth Ellen
Ripley, Elizabeth Comstock
Sharpe, Gertrude Elizabeth
Stevens, Loraine Helen
Thomas, Glorian Butler
Tippett, Wilma Edythe
Torrey, Mary Elizabeth
Treadwell, Mildred Genevieve
Ulsh, Helen
Wallace, Helen Clark
Ward, Donna Gertrude
Webb, Norman Russell
Wike, Dorothy Elinore
Wilmot, Janice Shay

BACHELOR OF ARCHITECTURE

Brogren, Stanley C.
Creps, O. Lafayette
Hayashitani, Yutaka
Matsuzawa, Fumio
Murata, K. Kaichi
Nakashima, George Katsutoshi
Thompson, Marc Warren
Turner, Edwin Thurlow

BACHELOR OF FINE ARTS

Baker, Virginia C.
*Blanks, Evangeline
Craig, Eva Arlys
Denny, Marion Katherine
Douglas, Neva
Everett, Elizabeth Rinehart
Gaine, Juanita June
Grunbaum, James E.
Hopkins, Vera Aline
Howes, Gertrude Chadwick
Johnson, Mary Genevieve
McCanne, Gertrude Elizabeth
McElhaney, Marie Lucille
McGinnis, Edith Alice
Nagley, Hazel Vivian
Smith, Shirley Margaret
Teubner, Florence Maude
Turner, Charlotte Jane

*Died, April 26, 1929.

BACHELOR OF ARTS IN DRAMATIC ART

Bayles, Edith
Gage, Florence Marian
Haley, Mary Vernita Stewart
Jackson, Margaret Arthur
McPherson, Mildred
Mehlhorn, Eleonore
Morehead, Ruby Edna
Russell, Betty
Shepherd, Alyce E.
Swenson, Vesta V.

COLLEGE OF ENGINEERING

August, 1928

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Wright, William Theodore (*magna cum laude*)

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Baunsgard, Lee Allen
Glass, Robert Warwick
Martin, George Maybee
Reise, Herman Adolph

December, 1928

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Strong, James Henry
*Wells, Gordon Dolling

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Arai, Hohei
Harney, Gerald Edward
Howard, C. Wesley
Lucas, Eustaquio L.
Ludwig, Eugene F.

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Horning, Allan Ellsworth

BACHELOR OF SCIENCE (COMMERCIAL ENGINEERING)

Nelson, Ralph Blakeslee

March, 1929

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Chan, Frank Lai-ngi
Frolov, Boris Alexeevich

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Downer, Garland Burdette
Osborn, Lewis Knowles

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Corcoran, James Patrick
Hockersmith, Wendell F.
Pinkerton, John Lloyd
Price, Harry Joseph
Smith, Delmar Eugene

*Died, November 4, 1928.

BACHELOR OF SCIENCE (COMMERCIAL ENGINEERING)
Morgan, Adrian Hayes

June, 1929

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Fragen, Nathan (*cum laude*)
Haring, Robert Clinton (*magna cum laude*)
Hauff, Thorvald Westy Jr.
Hornberg, Charles V.
Masters, Myron
Miller, Paul Frank
Pesce, Lawrence
Porter, Robert Dickey (*cum laude*)
Reid, William T.
Sanford, Marcus E.
Slowinske, George Anton

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Anderson, Enoch Albin
Dally, Harold Nelson
Kriegel, W. Wurth
Lewis, Palmer Gates
MacDonald, Howard Daniel
Newport, Marshall Ross
Schegolkov, Victor K.
Tarbet, Roy Edwin

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Arima, John Kiyoshi
Brady, James E.
Durkee, Kenneth Melvin
Falconer, Maynard Carver
Hervin, Carl Harold
Huffine, Charles Walter
Kelly, Emmet P.
Lafranchi, Vincent
Lanken, Nicolas
Leithead, Robert Corey
Long, Paul M.
McElroy, Richard H.
Maynard, Jack Earl
Meacham, Larned Ames (*cum laude*)
Oros, Charles N.
Orr, Robert Stewart
Renhard, Julius Anselm
Rotta, Allen Elmer
Sato, Kimiji
Wagner, Robert Howard
Wailes, Ronald David
Welikanov, Alexander G.
Yoshioka, Hideo
Zeh, George J.

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Bistrom, Frank Vernon
Gaffner, Haines Bell
Lake, Clark Bernard
Merryman, John Wynne
Pierce, Earl Riebe
Spence, Douglas James
White, William Wallace

BACHELOR OF SCIENCE (COMMERCIAL ENGINEERING)

De Puy, Hiram Jr.
Emery, Elliott Gifford Jr.
Nieme, Elmer Jacob
Zilliax, George Richardson

COLLEGE OF MINES

August, 1928

BACHELOR OF SCIENCE IN GEOLOGY AND MINING
Boyd, Robert Jesse

June, 1929

BACHELOR OF SCIENCE IN CERAMIC ENGINEERING
Richardson, Gordon B.

COLLEGE OF FORESTRY

March, 1929

BACHELOR OF SCIENCE IN FORESTRY

Lindsey, J. J.

June, 1929

BACHELOR OF SCIENCE IN FORESTRY

Bautista, Felino L.
Brandner, H. Phil (*magna cum laude*)
Davis, Raphael Harrison
Grogan, William Ward
Halse, George C.
Kirkpatrick, Dahl J.
Lunnum, Knut
Olson, Roy Leander
Overbay, Charles Homer (*cum laude*)
Palmroth, William G.
Ramsey, Guy Reed
Schellin, Albert Barthlonew
Stanley, Emery R.
Tracy, James Drysdale
Wilson, Whitney Suman
York, Lynn

COLLEGE OF FISHERIES

March, 1929

BACHELOR OF SCIENCE IN FISHERIES

Power, Edward Allen

June, 1929

Barnaby, Joseph Thomas
Clague, John A.
Lindgren, Burt Edwin
Young, Albert S.

COLLEGE OF PHARMACY

December, 1928

PHARMACEUTICAL CHEMIST

Day, Frank
Gillette, Mildred Bothwell
Kashiwagi, Shungi George
Rising, Louis Wait

BACHELOR OF SCIENCE IN PHARMACY

Day, Frank

March, 1929

PHARMACEUTICAL CHEMIST

Taylor, R. A.

June, 1929

PHARMACEUTICAL CHEMIST

Bell, Carleton W.
Bishop, T. W.
Brooks, William Edward
Butler, Mae
Codling, Jack William (*cum laude*)
Cotton, Marion L. Jr.
Crombie, Besse M.
Ferguson, Ronald
Florence, Eldo A.
Gillis, Ewen
Gooch, John Martin
Greenberg, Arthur A.
Guth, Earl P. (*cum laude*)
Hackney, Roscoe Devere
Hillebrecht, Elsa (*cum laude*)
Hough, Theodore Samuel
Johnson, Einer E.
Jones, Ivor (*magna cum laude*)
Kerns, Ray Francis
Layton, E. Gerald
Loan, Clarence W.
McDowell, Dan Wallace
McRory, Orville Beverly
Mack, George C. Jr.
Mahoney, Frederick William
Meyer, August William Jr.
Mohrman, John Jacob
Mullen, Leo Joseph
Nakaya, Sukeo
Perdick, John Frank
Powell, Ross C.
Redman, Kenneth
Rutledge, James Adelbert
Smith, Harold B.
Stahlberg, Charles D.
Stowell, Leland Wilson
Stroble, Raymond Robert
Wahl, Sydney E.
Walker, Graydon L.

BACHELOR OF SCIENCE IN PHARMACY

Brooks, William Edward
Cox, Cliveden Llwyd
Kashiwagi, Shungi George
Kelly, Edgar A. (*cum laude*)
Levinson, Sol
Millar, Melville M.
Nakaya, Sukeo
Thompson, Harry Edward
Walen, Harold Graydon

COLLEGE OF BUSINESS ADMINISTRATION

BACHELOR OF BUSINESS ADMINISTRATION

August, 1928

Ashwell, Leonard W.
Bohn, Joseph Reamer
Carter, William Laurence
Colman, Andrew Terry
Dakserhof, Boris
Daverin, Audrey Lyle
Fish, Fred
Fisher, Maier Thornton
Foster, Albert O.
Gordon, Madeleine Court
Greenough, Robert William
Howland, Earl A.
Katayama, Elmer Junichi
Mackenzie, Jean Elizabeth
Malone, Coe Vernon
Ogawa, Elmer
Ostrom, Theodore Emanuel
Semon, Darrell Stanclift
Smith, Cora Lynn (*cum laude*)
Stark, Melvin Henry
Teig, Ralph
Van de Walker, Dale Halstead
Walker, Alfred F.
Watkins, Clayton K.
Whitlock, Victor James
Williams, Charles H. E., Jr.
Zaremba, Carl A.

December, 1928

Balch, Albert Sidney
Bass, Ernest F. (*cum laude*)
Bishop, Edwin James
Brennen, Gordon N.
Chaffee, George Donald
Dryden, Miller Dale
Erving, Taina A.
Frederick, Paul John
Grahn, Theodore Raynold
Inouye, Hajime
Kirsh, Lucille Beatrice
McCann, Joseph John
McKinstry, Cecil Hardy
Nau, John Clarence
Tracy, Jack Stewart Hunter

March, 1929

Anderson, Merrill Dean
Busse, Charlie W.
Cavender, Fern (*cum laude*)
Greig, William T., Jr.
Herold, Edmund Henry
Leach, Shirley Wyman
Lowenstein, Bernard G.
Meyers, Fred William
Oeck, Emil Arthur
Randall, G. Arthur
Stoddard, Wayne George
Turnacliff, J. Lloyd
Weld, Theodore Busick

June, 1929

Andonian, Mihran Paul
Anglea, T. Hayes
Armstrong, Homer Bruce
Beagles, Floy
Blade, Walter William
Bock, Russell Samuel
Booker, Thomas Randolph Jr.
Bradburn, Alice Warner
Brandt, George (*cum laude*)
Buddress, Elmer Norrington
Burns, Lillian Ann
Campbell, Eldon Douglas
Chain, Leo
Chittenden, Robert A.
Clark, Benjamin Inglis
Clark, David Philip
Combs, Harold Tilden
Cook, Dean Lewis
Cunningham, Robert Joseph
Davin, Jackson Joseph
De Kraay, Raymond Wilson
Diamond, Josef
Erickson, Leonard L.
Erlenborn, Franz J.
Evenson, Justin Clifford
Freed, Joseph Edward (*cum laude*)
Gehring, Par Jerome
Gill, L. Presley
Gillespie, Norman J.
Golden, Constance
Griffin, John Henderson Jr.
Hall, John Ingvald
Hallum, Jerome D.
Hart, Harvey Blake
Havland, William I.
Hempstead, William Elmer
Henderson, Lawrence Ewing
Hopkins, Alden G.
Jensen, Harriet
Kinney, Thomas Colston III.
Knowles, Chad
Knutsen, Clarence Melvin
Kynell, Hurben Francis
Langlie, J. Winfield
Lee, Yone Ming
McGrath, Arthur Henry
Mathies, Herbert John
Meader, E. Eilert
Metz, Franklin Emerson
Miller, Henry Augustus (*cum laude*)
Miller, Paul H.
Miller, Paul Warren (*cum laude*)
Minaker, Cecil Weldon
Murchison, Donald
Nay, Edward O. Jr.
Neilson, John Lees
Niemann, Frederick Varner
Oswald, David Cameron
Pollock, David
Rader, Norval Bartley
Reeve, Stanley James
Riseland, Alice Ella (*cum laude*)
Schade, Robert Joseph
Schoeggl, Carl (*magna cum laude*)

Schroeder, Karsten
Segerstrom, Edna Charlotte
Sheldon, Mary Elizabeth
Steinhart, Arden C.
Sterling, Gaylord Lemuel
Tate, Walter Glenn
Tessman, Edna Martha
Thompson, Charles Ireton
Thompson, Wilbur Bernard
Turner, John
Ulrich, A. Robert
Wallace, William Dill
Warnick, Jack
Westberg, Frederick Holt
Westin, Theodore
Wismer, Harold J.
Wong, Shing Yipe
Wood, Lester Walter
Woodworth, George Sampson
Ziebarth, Emmett A.

SCHOOL OF LAW

BACHELOR OF LAWS

August, 1928

Anderson, John Harold
Flood, George E.
Gyde, James Ellsworth, Jr.
Pellegrini, Frank A.
Renwick, Edward Cardwell

December, 1928

Driscoll, Edwin U.
Dunning, Guy Ernest
Gose, J. Gordon (*magna cum laude*)
Potter, Willis A.

March, 1929

Davis, Kenneth C.

June, 1929

Arnold, Evert Frank
Burns, Eggert Arenbjorn
Burroughs, Alfred Parker
Cushing, Eugene Gilbert
Davis, Harvey F.
Fitch, Hereford Taylor
Gandy, Joseph Edward
Goering, Elmer (*cum laude*)
Gustavson, Emil Gottfrid
Hallstrom, Charles William
Holden, William Harold
Howe, Drayton Ford
Hughes, Joseph L.
Imus, Henry Jerard
Johnson, Ray Lloyd
Kalenius, C. Oscar
Le Clair, Howard Joseph
Lev, Lester Lewis
Magnuson, Warren G.
Marquis, Marion Alfred
Maslan, Aaron Leon
Masuda, Thomas Shinao
Matthews, John G. Jr.
Mills, Orville Herman
Moran, Christine Louise
Oldfield, Willis Charles
Olmsted, J. Burlison
Olsen, Albert
Sanford, Henry S.
Shucklin, Gerald
Smiles, Kenneth George
Spiller, John
Thurston, Robert Carlisle

LIBRARY SCHOOL

BACHELOR OF SCIENCE IN LIBRARY SCIENCE

August, 1928

Anderson, Eleanor Sue
Anderson, Katherine Eva
Hughes, Katherine W. (*magna cum laude*)

December, 1928

Dorris, Catherine Ellen

June, 1929

Beggs, Mary Katharine
Bell, Rosalia Lee
Betts, Rachel M.
Cheesman, Esther Lucille
Clodius, Elsie V.
Cohn, Mildred
Cramer, Dorothy M. (*cum laude*)
Dagg, Helen Gertrude
Feddersen, Ella J.
Franck, Elizabeth
Gadbois, Elsie C.
Giffen, Blanche
Gould, Marie Louise
Heathcote, Lesley Muriel
Hicker, Catherine Manley
Kidder, Eleanor (*cum laude*)
Lyons, Hermiena Marion
Macdonald, Ruth Ermina
Maginnis, Helen Marie
Mitchell, Doris Leonora
Moore, Helen Mary
Nordquist, Elsa Elizabeth
Norris, Olive Ruth
Nye, Margaret Amy
Oatey, Miriam Isabelle
Oleson, Mildred Elizabeth
Partridge, Edith Mae (*cum laude*)
Peterson, Melanie Caroline
Porter, Dorothy Dee Lacy
Potter, Elsie
Renshaw, Edith Isabel
Rogers, Anabel Mary
Rogozina, Raisa Andreevna
Sharp, Glenna Frances
Shepard, Evelyn Elizabeth
Slawson, Ida Calef
Steele, Helen M.
White, Mabel

SCHOOL OF JOURNALISM

BACHELOR OF ARTS IN JOURNALISM

August, 1928

Flodman, Milton Nathaniel
McCarthy, Corrinne Elizabeth
McClellan, Hortense

December, 1928

Blake, Maxine Uraine
Cory, Merle Ralph

March, 1929

Blethen, Clarance Brettun 2nd
Gierin, Grace Isabelle
Hoffman, Lawrence William
Smith, Charlotte Burgess
Tripp, Audrey Cora

June, 1929

Clay, Charles Field
Corbett, Helen Alberta
Crothers, Muriel
Dickey, Miriam Louise
Flint, Floyd O.
Freiberg, Bernice Augusta
Ghiglione, Maybelle (*cum laude*)
Heilman, Robert Jr.
Jones, Ralph Paul
Sey, Harriet Ann
Shattuck, Curtis Gordon
Slipper, Lorna
Turner, Leon Fairfield
Wills, Grace
Wright, Elizabeth Caroline

Normal Diplomas

UNIVERSITY FIVE-YEAR NORMAL DIPLOMA

August, 1928

Allen, Edith Helen
Anderson, Lydia Louise
Anderson, Martha
Armstrong, Harriet Elizabeth
Bailey, Katharine Amaryllis
Belcher, Thelma Brooks
Bennett, Mabel Alma
Bereiter, Catherine Alice
Blanchard, Ida
Bloom, Elizabeth Babcock
Boettcher, Antone Robert
Bremner, Raymond Wilson
Browning, Kathleen G.
Burson, Dorothy
Busler, Edna Ruth
Butler, Gertrude M.
Carter, Elizabeth Hope
Carter, William Laurence
Cody, Mary Ellen
Coulter, Dorothy Bernice
Cramer, Leila Buckman
Crim, Dorothy Marie
Crow, Jane May
Cummings, Kathryn Miriam
Darby, Edith Belle
Daverin, Audrey Lyle
Davis, Manima Wilson
Dick, Gordon Wayne
Dickerman, Harry Elmer
Dormann, Helen Mary
Duncan, Charles Anderson
Durrwachter, Hilda Marie
Everett, Pauline O.
Fanselow, Fern Louise
Feley, Anne Caroline
Fitzsimmons, Mary
Folsom, Morrill Frederic
Geisness, Evelyn Alice
Gellermann, Mildred Wright
Gray, Helen Elizabeth
Gregg, Dorothy Dean
Hicks, Helen Barbara
Hoverson, Julius C. G.
Hughes, Catherine Anna
(Sister M. Frances Clare)
Hurley, Mary Dorothy
(Sister Rosena)
Hutcheson, Betty
Iorns, Eleanor Lewis
Jackson, Elizabeth Jane
Jaeger, Ethel Freeman
Johnson, Carl Vinston
Johnson, Vivian Henrietta
Jones, Annie Laura
Keenan, Mary Antoinette
Kienast, Vera Louise
Klemptner, Ellen
Kuhefuss, Helen Mary
Laubscher, Ruth
Lee, Samuel Benton
Lefebvre, Aimee
McCarthy, Corrinne Elizabeth
McClellan, Hortense
McDonald, Vernon Charleton
McKee, Wilbur R.
McMahan, Rene Gertrude
Maguire, Josephine
(Sister Mary Joan)
Major, Sidney
Maltman, Jennie Rebecca
Moffatt, Catherine A.
(Sister Mary Eulalia Teresa)
Montgomery, Samuel
Moore, Bernice Starr
Moore, Mabel M.
Morgan, Helen Ethel
Mumford, Clarence Bird
Nelson, Olga Amelia
Nylen, Donald
Odell, Ruth Marian
Olson, Irene
Osborn, Glenn
Parkinson, Doris Blanche
Payette, Gertrude F.
(Sister Mary Aquin)
Pitzer, Carl A.
Quigley, Margaret Helen
Rairdon, Edward Earl
Ralls, Roberta
Rasmussen, Emma M.
Reed, Ralph Joseph
Richmond, Claude
Rickel, Ruth Eloise
Robarge, Edmere Amanda
Robinson, Stella Salome
Robison, Cloyd Leslie
Rodman, Margaret Catharine
Rose, Frances Dola
Russell, John Beaucamp
Schwarz, Eleanor Margaret
Smaby, Sylvia Hortense
Smith, Edith Ralston
Sommer, Eugenie
Stucky, Phillip Paul
Sullivan, Nell
Tennyson, Florence L.
Toner, Martin Emmett
Tradewell, Helen Harman

Troutman, Samuel Paul
Turpin, Harold Lester
Van Tilborg, Laurance Douglas
Wales, Helen Maude
Walker, Horace Everett
Walker, Mary Agnes
(Sister M. Clementia)
Wallace, Glenn Irving
Walters, Helen Elizabeth
Watts, Catharine Charlotte
Wells, Marjorie Ethel
Wendler, Florence Mildred
West, Florence Lucile
Wiggins, Julia Jeannette

December, 1928

Bishop, Edwin James
Brooks, Sheldon
Cauby, Dorothy Dell
Desmond, Catherine
(Sister Mary Ethelind)
Dodge, Bradley M.
Eckelson, Genevieve Ella
Evans, Frances Elizabeth
Fesenmaier, Athyleen Myrtle
Huse, Esther L.
Jensen, Ellen Marie
Jordan, Gerald Moray
Kiekenapp, Hortense
Leebhoff, Herbert
Leitch, Marjorie Eleanor
Loncke, Madeleine R.
Merigold, Florence Elizabeth
Mitchell, Mary Sidney
Mollestad, Howard Mace
Phelan, Grace Elizabeth
Stowell, Lillian
Turley, Elva Bernice
Whitner, Chester Lee
Wilson, Elda Ruth
Woesner, Inez Estelle
Wyman, Bernice Lucille

March, 1929

Aldrich, Dorothy Carlisle
Bagby, Luretta Della
Blake, Maxine Uraine
Bowman, Nelle Hazel
Cook, Parker Eugene
Craig, Dora B.
Dodson, Mary Eleanor
Kinney, John Melvin
Linderman, Paul Booth
Linton, Geraldine Mae
McCann, Joseph John
McGrath, Gertrude Mary
Moulton, Edith Alicia
Nudd, Barbara Elizabeth
Penney, Elmina E.
Woelffel, Lucy Marjory

June, 1929

Abel, Dorothy Louise
Adair, Helen Janet
Adamson, Lee James
Agar, Catharine Eleanor
Ahlberg, Vyolet
Almquist, Edward Emanuel
Anderson, Helen Marie
Anderson, Hulda Edna
Anderson, Mary Margaret
Andrew, Helen Katherine
Anfin, Caroline Martha
Angus, Dulcie Alberta
Applegate, Esther Matthews
Arestad, Sverre
Aronin, Anne
Austin, Mary Cathern
Baird, Harriet Warner
Baker, Alfred
Baker, Irene H.
Barnett, Kelso Clarke
Barrett, John Parrish
Bayles, Edith
Beisse, Gertrude Carolyn
Belden, Bernice Eileen
Bentley, Gladys Ann
Bergstrom, Charlotte Mary
Blair, Sara Palmer
Blosser, Stella Van Orsdall
Bohanon, Lawrence Hobart
Boldan, Veronica
Borgen, Bernice Marilyn
Boyd, Helen Galvin
Brobeck, Lester Ferdinand
Brown, Pauline
Bryan, Collis C.
Burns, Ethel Leone
Burns, Lillian Ann
Butler, Mildred Grace
Calhoun, Gerald Adams
Carlson, Clement John
Case, Georgia Anita
Cassedy, Margaret Mary
Challis, Henrietta Isabella
Churchill, Amy Kinnaird

Coffin, Sarah Ruth
Craig, Eva Arlys
Crawford, Hazel
Crawford, Leslie G.
Culwell, Louise
Curry, Eula Marie
Cutts, Elmer H.
Day, Josephine Elizabeth
Delbar, Helen Elizabeth
De Long, Edyth
Doernbecher, Dorothy
Dohm, Dorothy G.
Doran, Evelyn
Dowler, Dorothy Virginia
Dowty, Dorothea
Doyle, Mary Margaret
Duff, Marian Louise
Durham, Howard Ellis
Dykeman, Lola Towns
Edlatz, Danica Lucille
Ellington, Evelyn Mildred
Fish, Vynor Starr
Fitz, Olive Dyer
Fitzgerald, Petronilla
Flanagan, John Clemans
Fleming, Glenn Barr
Fowler, Sophia Rae
Froude, Ruth E.
Genther, Benicia
Gibb, Minnie Margaret
Gray, Andrew Eric
Gray, Mary Anne
Gulick, Margaret
Hagen, Irene Charlotte
Hallstrom, Charles William
Hardy, Martha Elizabeth
Harrington, Mary Geraldine
Hegg, Arnold
Henry, Rossie Ann
Hicks, Esther O.
Higgins, Kathryn Elizabeth
Hilzinger, Julia M.
Hinderer, Winfred Edgar
Hjermstad, Martha S.
Hochtritt, Helen Grace
Hopkins, Agnes Macdougal
Huhta, Elmer
Jensen, Gertrude Caroline
Jensen, Harriet
Jensen, Helen Fairchild
Jergensen, Emma Louise
Johnson, Emily Helen
Johnson, Hazel Josephine
Johnston, Bernice
Jones, Ada Cleo
Jones, Mildred Elinor
Jusseit, Alfred Berne
Keith, Vernadel Eugenia
Kelsey, Anna Louise
Kemp, L. Maurine
Kenyon, Marcus Monroe
Kirshner, Augusta
Kizer, Edith May
Kolstad, Beatrice Mae
Kryger, Chris Jr.
Landeck, Violet Maude
Larson, Ilene Phoebe
Lawless, Ruth Ella
Leedy, Virginia
Leik, Mary Frances
Leipheimer, Marielouise
Lewis, Myra Winifred
Lieb, Edwin A.
Lillquist, Elma Carolyn
Lippincott, Crispin
Littel, Estella Marie
Lockwood, Marie Frances
Long, Kathyrine Scott Hamilton
Lumley, Ellsworth Du Ganne
McCanne, Gertrude Elizabeth
McClelland, Victor Hubbard
McDermott, Paul Frederick
McElhaney, Marie Lucille
McHugh, Eileen Anne
McIntosh, Loys Maude
McNeilly, Glenn Duncan
McPherson, Mildred
Maas, Johannette Anne
Main, Carroll
Meagher, Jane
Mehlhorn, Eleonore
Meisnest, Helen Louise
Meservey, Marian E.
Miller, Alice Frances
Miller, Helen Grace
Mills, Catherine S.
Moe, Myrtle Josephine
Miner, Edith Moorhead
Morris, Frances Catherine
Morris, Robert Aitken
Mort, Hazel Blanche
Mullen, Frances Helen
Murray, Julia Ann
Murray, Margaret Carolyn
Nagley, Hazel Vivian
Nelson, Mildred Elaine
Nettleblad, Dora Anna
Nichols, Julia Hull
Oliver, Fred L.
Olsen, Thelma Louise
Olson, Alvin Cornelius
O'Meara, Erma Kathryn
Osborn, Melba
Parish, Mildred Beatrice
Parker, Dorothy Jean
Parmeter, Kenneth Frederick

Payzant, Marion Alice
Peek, Clifford L.
Pellegrini, Marion Martha
Petersen, Bernice Mary
Plamondon, Vivienne
Potts, Margaret Evelyn
Quigley, Dorothy Margaret
Randall, E. Catherine
Rathbun, Elizabeth
Rattray, Marjorie Elizabeth
Rawson, Frances I.
Reed, Robert Marion
Rhodes, Helen Harvey
Riley, Frances Marcene
Ripley, Elizabeth Comstock
Riseland, Alice Ella
Roose, Clarence Nels
Ross, Harriett Airey
Rupp, Alice Gertrude
Russell, Betty
Rutter, Beatrice C.
Sarki, Lillian Olivia
Schlerman, Mary Agnes
Schwartz, Belda Claire
Scofield, Irene Mathea
Searls, Helen Elizabeth
Shearer, Florence Martha
Sheldon, Mary Elizabeth
Shelton, Helen Elsie
Short, Arline Lucile
Smith, Joyce Floy
Smith, Lenore Christine
Smith, Shirley Margaret
Smith, A. Zanonia
Snyder, Helen V.
Soderberg, Miriam
Somers, Eleanor
Staff, A. Mildred
Stafford, Marie K.
Stangeland, Helen Jane
Stentzel, Lena
Stephens, Ada Irene
Stevens, Gladys M.
Stevens, Loraine Helen
Stickney, Lyman Burns
Stoy, Nell Stuart
Sutherland, Blanche
Tallman, Bertha Frances
Taylor, Howard Jean
Tefft, Dorothea June
Thomson, Hermia W.
Thordarson, Thordur Roy
Thorsteinson, Elsa Dorothea
Thurman, Ruth
Tippett, Wilma Edythe
Torrey, Mary Elizabeth
Valverde, Winnie
Wallace, Helen Clark
Ward, Donna Gertrude
Webb, Norman Russell
Weisberger, Helen Estelle
West, Gladys Elizabeth
Wester, Virginia Lee
Wheeler, Wallace Bert
Wicker, Jessie
Widmann, Rosemary
Wike, Dorothy Elinore
Wiley, Alice M.
Williams, James Gerald
Willigar, Florence Mertie
Wilmot, Janice Shay
Woolpert, Dorothea Dorcas
Wright, Elizabeth Caroline
Wright, Monica Permile
Wyngarden, John L.

UNIVERSITY LIFE DIPLOMA

August, 1928

Alinder, Elsie Kathryn
Archer, Helen Roberts
Berg, Gunnar H.
Black, Mary Catherine
Boundy, Charles Milburn
Branshaw, Frances
(Sister Mary Veronica)
Brier, Howard Maxwell
Budde, Charles Arthur
Caulkins, Alice Estelle
Chamberlain, Helen Duncan
Coffman, Mabel M.
Coon, Amy Grace
Coventry, Edwin James
Dahlgreen, Evelyn
Danner, Earl Young
Delany, Nellie Keesling
Elder, Raymond W.
Foote, Luauda
Forster, Crescentia
(Sister Mary Clementine)
Fraser, William M.
Ganders, Mary Louise
Gibson, Frederick O.
Gray, Ruth Marie
Haack, Wilhelmina Margaret

Hankinson, Helen A.
Hart, Lou Ella
Haskell, Margaret E.
Heffernen, Agnes
(Sister Mary Austin)
Hennessey, Mabel A.
Himes, Hazel Flores
Hoffland, Laura Hildreth
Holden, Blanch Lillian
Hulshouser, Ruth Aileen
Hurlburt, Blanche
Janeck, Marion Delferna
Jennings, Matilda
(Sister Mary Floretta)
Johnson, Fannie
Kaufman, Gretchen
Kinkade, Lucille
Knudson, O. M.
Knuppenburg, Irva Caryl
Laird, Thelma Lucille
Manard, Lucille Alice
Milam, Carey Harris
Miller, Marienne Elizabeth
Mills, Elizabeth M.
Moore, Louise Weiermuller
Mullen, Doris Gertrude
Mullen, Loda Helen
Murray, Jane Frances
Muyskens, Henry
O'Brien, Mary
Oleson, Mabel Helena
Olsen, Leah Ingeborg
Peplow, Marion Lucille
Peterson, Marie Laura
Phillips, Alfred B.
Pierce, Ailene Edna
Poole, Florence
Prichard, James Milton
Raine, Margaret Muir
Reep, Ellen Laura
Rogers, Eleth Adell
Roll, Dorothy Bates
Rosenquist, Oscar William
Rude, Hazel Irene
Schrader, Neva L.
Sell, Myrtle May
Simson, Jerome
Skewis, Mary Alberta
Smith, Byron B.
Strand, Sophie V.
Sundquist, Ida Elvera
Sutherland, Ethel Emogene
Thompson, Theodora Bailey
Wallace, Allan Reese
Walter, George Avery
Ward, Ceil Miner
Ware, Janet Martha
Whitcomb, Catherine
Withrow, Faye
Wood, Varian G.

December, 1928

Attebery, Hester Josephine
Ault, Ann Mary
Cobb, Eunice Bergman
Darling, Mary Hinman
Dillon, Ruby Lois
Dolan, Irene Lenore
Dwyer, Katharine Mary
Erickson, Alfred Charles
Hendershott, Elizabeth
Jewell, Mildred R.
Liston, Edward J.
Lloyd, Bernice Brooks
Logan, Ettie
McDonald, Lamora
Mennell, Estella Peabody
Meyer, Wilhelm Hugo
Nesalhouse, Gertrude Marie
(Sister Mary Ambrosia)
Posey, Naomi Mae
Shaffner, Mary Murchison
Thompson, Lillian Irene

March, 1929

Babbitt, Ardsley Gertrude
Bayley, Mildred
Black, Julia Kathryn
Campbell, Clyde Gordon
Case, Margaret Frances
Cavanaugh, Edith
Cochrane, Mavis Claire
Corlett, Mildred Virginia
Evatt, Phillip O.
Flock, Mabel Violet
Goehring, Viola Elsie
Hagar, Irene A.
Harvey, Lora Mary
Hurd, May
Larson, Nettie Rose
LaVigne, Naomi
Lee, Vernet Charles
McIlvain, Dorothy Salome
McLeod, Cleo R.
Mathis, Madge Mary
Neerland, Ruth Christine
Records, Lola Evelyn
Roaney, Marland B.
Schmitt, Mildred Mary
Smith, Charles Joseph
Windhusen, Anne Elizabeth
Young, Mary Glendowin

June, 1929

Allehoff, Julia
(Sister M. Alicia)
Baker, Helen Melissa
Brown, Elizabeth
Brown, Imogene
Bursell, Frances Imogene
Calder, Mary Etta
Chisholm, Hulda Hepperle
Cowan, Carol Merle
Dahl, Florence
Donley, Eleanor F.
Dugan, Helen J.
Elliott, Edith Alexandra
Endres, Teresa
Fuller, Frances Olive
Hansen, Herbert
Henderson, Frank Downey
Horst, Claude William
Howard, Helen Elena
Huletz, Helen Marie
Jaeger, Ethel Freeman
Jones, Luella Eliza
Kamb, Leona
Knighton, Blanche
Maginnis, William J.
Moore, Bernice Starr
Morrill, Fayetta Johnston
Nanney, Albert M.
Olene, Doris Grace
Peach, Helen Agnes
Pelz, Gladys
Penewell, Marion Frances
Price, Zetta
Reed, Genevieve E. M.
Samzelius, Alpha L.
Schnasse, Gertrude
Sealls, Margaret Carolyn
Seymour, Glen L.
Storm, Charlotte Stutsman
Strachan, Gertrude
Wahl, Leonora Marie
Weyermann, O. Ferdinand
Wiley, Frances Evans
Williamson, Robert Leslie
Wynne, Vivian E.

CERTIFICATE IN PUBLIC HEALTH NURSING

August, 1928

Applegarth, Victoria Lillian
Arnason, Thorbjork Dyrleif
Braitzka, Ruby Verna
Calkins, Minnie Mable
Davis, Emily Katherine
Holtine, Maude P.
Hutchinson, Marjorie
Kirschman, Mabel M.
Lang, Verna H.
Mathias, Zillah
Putnam, Mary L.
Scott, Elsie Hope
Small, Beulah Forbes

December, 1928

Brusewitz, Hazel Maud
Carpenter, June B.
De Vore, Anne Elizabeth
Frye, Nellie A.
Greer, Jean Elizabeth
Hermanson, Hanna A.
Mathewson, Hazel
Parkes, Ella Virginia
Rose, Clare Frances
Thompson, Aurora
Williams, Lucile

March, 1929

Finney, Mary Beeler
Hagerman, Lily Constance
Mitchell, Blanche

June, 1929

Coffman, Grace M.
Fullington, Winifred Cowan
Hansen, Margaret
McCormack, Grace
Madsen, Norine Hawkins
Moore, Gertrude Reis
Murray, Ethel Frances

HONOR GRADUATE IN LAW

J. Gordon Gose

ADVANCED AND PROFESSIONAL DEGREES

MASTER OF ARTS

Ralph Kenneth Allen[A] (English)
B.A., William Jewell College, 1926
Thesis: The Point of View of John Gower

Lou Ena Clark Anderson (Latin)
B.S. in Ed., Kirksville State Teachers College, 1918
Thesis: Omens, Portents, and Prodigies in Livy

Lydia Louise Anderson[A] (English)
B.A., Augustana College, 1923
Thesis: Edward Bellamy and his World

Fisher Taylor Ayer (Home Economics)
B.A., University of Washington, 1927
Thesis: A Study of Roumanian Costume

Leo Bernard Baisden[A] (Education)
B.A., University of Washington, 1916
Thesis: The Employment of Married Women as Teachers in the City Schools of Washington

Lee Elmore Baker (History)
B.A., Aurora College, 1918
Thesis: Rome and Early Christianity

Genevieve Georgiana Bale (History)
B.A., University of Washington, 1927
Thesis: A Comparative Study of the Chronicles of Jean Le Bel and Jean Froissart

William Carr Banks[D] (English)
B.A., University of Washington, 1926
Thesis: George Fox and the Early Quakers

Maud Layton Beal (English)
B.A., University of Washington, 1926
Thesis: Some Implications of Philosophic Determinism in the Works of Theodore Dreiser

James Prince Beasom, Jr. (English)
B.A., Muhlenberg College, 1926
Thesis: Loci e libro veritatum: Passages Selected from the Theological Dictionary of Thomas Gascoigne. Translation and Introduction

Frances Kay Beckwith[A] (English)
B.A., University of Washington, 1927
Thesis: Catherine Maria Sedgwick; a Study

William Russell Blankenship[M] (English)
B.A., University of Missouri, 1914
Thesis: The Perfectionism of John Humphrey Noyes

Mary Catherine Brown (Political Science)
B.A., University of Washington, 1926
Thesis: The Administration of Leonard Wood in the Philippine Islands

Anton Buedall[A] (History)
B.A., Luther College, 1912
M.A., University of Chicago, 1922
Thesis: The Italian Merchants Trading in England, 1224-1327

The persons whose names are followed by the superior letters A, D, M received their degrees in the quarters of 1928-1929 ending in August, December and March respectively; all others in June, 1929.

Winifred Mathilde Bunge (French)
B.A., University of Washington, 1928
Thesis: French Drama Based on the Bible

Elizabeth Buss[A] (History)
B.A., Washington State College, 1916
Thesis: The Attitude of Five Protestant Churches towards Slavery

John Oluf Bye[A] (Economics)
B.A., University of Montana, 1925
Thesis: Eight Years of Labor Banking

Hugh Pin Chang (Education)
B.A., Intermountain Union College, 1924
B.A., University of Montana, 1925
Thesis: Higher Education in China

Byron Hunter Christian (Journalism)
B.A., University of Washington, 1921
Thesis: News Writing

Harold Tracy Coker[A] (History)
B.A., Wabash College, 1925
Thesis: General George Henry Thomas and the Chickamauga Campaign

Ivy Theresa Creagh (History)
B.A., University of Texas, 1920
Thesis: Views of Webster, Clay and Calhoun on the Public Land Policies, 1820-1850

Vanita May Crofoot (Home Economics)
B.S. in H.E., South Dakota State College, 1918
Thesis: The Origin and Development of Home Economics in the Five Institutions for Higher Education of the State of Washington

Gertrude Cunningham[A] (History)
B.A., College of Puget Sound, 1924
Thesis: British Response to the Cry "54-40 or Fight"

Ray Bartlett Dean[A] (Education)
B.S., Whitman College, 1925
Thesis: Causes of Failure in the Longview, Washington, High School

Marjorie Ruth Dilley[D] (Political Science)
B.A., University of Colorado, 1923
Thesis: The Administration of Western Samoa as a Class "C" Mandate

Bertha Rosetta Dooley (English)
B.A., Whitman College, 1912
Thesis: Tennyson's Queen Mary and Aubrey De Vere's Mary Tudor: a Study in Tennyson's Sources

John August d'Urbal (French)
B.A., Gonzaga University, 1926
Thesis: The Sources of Hugo's Aymerillot and Le Mariage de Roland as found in the Chansons de Gestes

Elsie English (Education)
B.A., University of Washington, 1915
Thesis: An Attempt to Smooth out the Educational Profile of Fifty Children

Arthur Leighton Fitch (Mathematics)
B.A., University of Montana, 1923
Thesis: The Sextic Curves Invariant under the Subgroup G_{36} of the Hesse Group

Leon Russell Foote[M] (Education)
B.L., University of Ottawa, 1896
Thesis: A Comparative Study of the Educational Efficiency of the Fifth, Sixth, Seventh and Eighth Grades of Rural Consolidated and City Schools of Clallam County, Washington

Lucius Elder Forbes (Education)
B.S., University of Montana, 1917
Thesis: The Problem of the Accelerated School Child

Dorothy Vaughan Foster[A] (Education)
B.A., University of Washington, 1924
Thesis: An Analysis of the Content of Ninth and Tenth Grade Literature

William Jay Freed[A] (Education)
B.S., Iowa State College, 1911
Thesis: A Study of the Salaries and Teaching Loads in Denominational Four-year Colleges and Private Junior Colleges in the United States

Louis Wanger Gellermann[A] (Education)
B.A., University of Washington, 1922
Thesis: An Experimental Investigation of the Factors which Influence Teachers' Marks

William Henry George[D] (Political Science)
B.S. in Ed., Kansas States Teachers College, 1916
Thesis: Some Problems of British Administration in Africa

Felicia Joyce Gowen[A] (History)
B.A., University of Washington, 1925
Thesis: Queen Elizabeth's Ecclesiastical and Foreign Policy under Secretary Walsingham

Bert Benjamin Hansen (Education)
B.A., University of South Dakota, 1922
Thesis: A Study in Evaluations

Henry Harrison Hoffland (Education)
B.A., University of Washington, 1926
Thesis: The In-service Training of Rural Teachers in Washington

Donald Ting-Mo Hsueh[A] (Education)
B.A., Peking University, 1921
Thesis: Some of the Problems of Modern Education in China

Marjorie Lenore Hull (Journalism)
B.A., University of Southern California, 1926
Thesis: Scope and Influence of Class and Trade Journals in the Pacific Northwest

Philomena Lillian Hynes (Education)
B.A., University of Washington, 1928
Thesis: A Study of the Present Status of Pupil Participation in the Government of the American Secondary School

Lillian Mildred Imrie[D] (Home Economics)
B.S., Oregon State College, 1917
Thesis: Some Accomplishments of Truth-in-Advertising Agencies in the Field of Clothing and Textiles

Ethel Freeman Jaeger (English)
B.A., Spokane University, 1920
Thesis: The Literary Sources of Donn Byrne's Messer Marco Polo

Edna Mae Jones[A] (Spanish)
B.A., University of Nebraska, 1927
Thesis: The Parables of Rodo

Marjorie Jones[A] (English)
B.A., University of Washington, 1921
Thesis: The Trap Plot and Tales from Elizabethan Dramas

Tadao Kimura (French)
B.A., University of Washington, 1928
Thesis: The Revolutionary Spirit in France during the Reign of Louis XIV

Lillian Maude King[A] (English)
B.A., University of Iowa, 1924
Thesis: Farm Life in Distinctive Middle Border Fiction

Harold Arthur Lang (Education)
B.S. in Ed., Montana State College, 1925
Thesis: A Study of University Entrance Requirements, Methods of Dropping Students, Average Student Load, Passing Grade and Drop Lists

Susan Coffman Langford (English)
B.A., College of the Ozarks, 1921
Thesis: Is the Picaresque Tale a Low Form of Literature?

Elizabeth Larsen[M] (English)
B.A., Whitworth College, 1917
Thesis: Lalo's Esthetique

Henry Larsen[A] (Education)
B.A. in Ed., Washington State College, 1925
B.A. in Econ., Washington State College, 1925
Thesis: An Analysis of Nationality and other Factors as Possible Influences upon Mental Test Scores and High School Grades

Ruth Margaret Lawson (English)
B.A., Willamette University, 1918
Thesis: Chaucer's Personal Envoy Poems: a Study in Historical Background

Dorothy Haggett Lister[A] (English)
B.A., University of Washington, 1924
Thesis: Spenser's Original Contributions to the English Language, Adapted from Words of Romanic and Classical Origin

Lyllis D. Lundkvist[A] (Education)
B.M., University of Washington, 1927
Thesis: Methods of Measuring Music Ability and Accomplishments with a Critical Survey of the Same

Otto George McDonough[A] (Education)
B.A., University of Washington, 1923
Thesis: Education in the Virgin Islands

Wilbur Robinson McKee[A] (History)
B.A., University of Iowa, 1926
Thesis: Virginia and her Western Land Policy, 1750-1783

Sidney Major (Latin)
B.A., University of Washington, 1928
Thesis: *Cum* Clauses in Sallust

Charles Winfield Matheson[A] (History)
B.A., Dalhousie University, 1903
Thesis: The Reciprocity Treaty of 1854 between the United States and Canada, and the Canadian Reciprocity Election of 1911

Carrie Lowry Miller (Education)
B.A., University of Washington, 1928
Thesis: The History of Education in Seattle

Amelia Ella Newberry (French)
B.A., University of Washington, 1927
Thesis: Sources of Corneille's Oedipus

Egbert Samuel Oliver[M] (English)
B.A. in Ed., University of Washington, 1927
Thesis: Tennyson's Ontology

Marguerite Josephine Oliver (Latin)
B.A., University of Washington, 1928
Thesis: An Analysis of St. Augustine's Attitude toward Classical Learning as Expressed in his Confessions

Knute Ovregaard[A] (History)
B.A., University of Montana, 1925
Thesis: The Union of Norway and Sweden and its Dissolution

Ruth Ward Packwood[A] (English)
B.A., Nebraska Central College, 1926
Thesis: Harriet Beecher Stowe and the Emotionalism of the Fifties

Rosalie Leila Pellegrini (History)
B.A., University of Washington, 1927
Thesis: The War of the Public Weal

Freda Elizabeth Pelz (Education)
B.B.A., University of Washington, 1922
Thesis: A Study of the Seattle Public Evening Schools

Elmina Elizabeth Penney[A] (English)
B.A., Walla Walla College, 1926
Thesis: Herrick's Search for a Philosophy of Life

Faye Marie Plank[D] (English)
B.A., University of Washington, 1926
Thesis: John G. Whittier: Poet Politician of the Abolitionist Movement

Fannie Potgieter[A] (Home Economics)
B.A., University of Iowa, 1922
Thesis: A Study of Slavic Peasant Costume

Harriet May Pugsley[A] (English)
B.A., University of Washington, 1907
Thesis: Social Philosophy of Thomas Hardy

Harry Leslie Purdy[A] (Economics)
B.A., University of British Columbia, 1926
Thesis: The Development and Cost of Municipal Operation of the Seattle Street Railways

John Johnstone Rae[A] (Education)
B.A., University of Iowa, 1911
Thesis: A Comparison of First Year Pupils of the Same Mental Ability in Segregated and Unsegregated Groups

Luverne Clement Ramsland (English)
B.A., Hamline University, 1924
Thesis: The World of Restoration Comedy

Crosby Eaton Redman (English)
B.S., Bowdoin College, 1921
Thesis: The Social Aspect of the Prose of George Eliot

Joseph Austin Reeves[A] (Education)
B.A., Cotner College, 1920
Thesis: The Establishment, Organization and Operation of the Junior College in Mount Vernon, Washington

Marian Stuart Robb (English)
B.A., University of Washington, 1926
Thesis: Le Drame de Massinger: Selected Chapters from the Study of Maurice Chelli. Translation and Introduction

Ellis Howard Rogers (Political Science)
B.A., Central Normal College, 1894
Thesis: The Political Philosophy of Edward Douglass White

Florence Ila Ryan[A] (History)
B.A., University of Washington, 1926
Thesis: The History of the Holy Land Tenth in England, 1274-1280

Yasuharu Arthur Sakuma[D] (Philosophy)
B.A., University of Washington, 1924
Thesis: Some Phases of Moral Freedom and Continuity

George Milton Savage, Jr.[D] (English)
B.A., University of Washington, 1928
Thesis: Rasselas and its Relation to the Eighteenth Century

Max Schertel (German)
B.A., University of Washington, 1923
Thesis: Der genealogische roman: eine neue gattung; eine vergleichende studie

Rachel Joyce Sealls[A] (History)
B.Ed., University of Washington, 1922
Thesis: Edward the First's Trip to Flanders in 1297

Kenneth Edgerton Selby (Education)
B.A., University of Washington, 1925
Thesis: District Owned Teachers' Cottages in the Northwest

Roy L. Skeen[A] (Education)
B.A., Willamette University, 1923
Thesis: A Study of the Legal Status of Teachers in Eleven Western States

D. Otis Smith (History)
B.A., Illinois Wesleyan University, 1918
Thesis: Major Land Policies of the United States since 1908

George Mimms Smith[A] (Education)
B.A., University of Washington, 1920
Thesis: Boys' Intramural Athletics in Public Secondary Schools

Hung Shu So (Mathematics)
B.A., Reed College, 1927
Thesis: Conic Sections Studied by Synthetic Method

William Francis Standeford[A] (Education)
B.A., William Jewell College, 1915
Thesis: A Preliminary Investigation of the Health Habits and Health Knowledge of School Children

Harold Stevenson (Psychology)
B.A., University of Washington, 1927
Thesis: A Study in Associative Interference

Caroline Emma Stober[A] (Education)
B.A., Willamette University, 1924
Thesis: A Study in School Discipline and Motivation

Chester Alban Taylor[A] (History)
B.A. in Ed., University of Washington, 1926
Thesis: Vespasian

Anibal Vargas (Spanish)
B.A., Asbury College, 1926
Thesis: La vida espanola en el siglo XVII segun Don Juan de Zabaleta

Frances Evans Wiley (Home Economics)
B.S., University of Idaho, 1921
Thesis: A Study of the Effect of Mid-morning Lunch on the Noonday Meal of School Children

Mentor Lee Williams[D] (English)
B.A., University of Washington, 1925
Thesis: James Kirke Paulding: Knickerbocker Democrat

Ruth Helen Williams[M] (French)
B.A., University of Washington, 1926
Thesis: A Study of the Medea Legend

Weldon Miles Williams (English)
B.A., Washington State College, 1924
Thesis: John Wilmot, Earl of Rochester, as a Literary Patron

Clifton Boyd Worthen[A] (History)
B.Ed., University of Washington, 1920
Thesis: The History of Central Montana to 1871

Johan Ulrik Xavier (Scandinavian)
B.A., Luther College, 1893
Thesis: Drömt og oplevet i Frödings diktning

MASTER OF SCIENCE

Hubert Anton Bauer[D] (Geology and Geography)
Baccalaureate, University of Munich, 1921
Thesis: Tides of the Puget Sound and Adjacent Inland Waters

Phoebe Irene Blalock[M] (Zoology)
B.S., Whitman College, 1923
Thesis: An Ecological Survey of Argyle Lagoon, San Juan County

Daryl Muscott Chapin (Physics)
B.A., Willamette University, 1927
Thesis: On the Hyper-fine Structure of the Mercury Line 3984A

Wilbur Doane Courtney[M] (Zoology)
B.S., Washington State College, 1922
Thesis: The Stem Nematode Tylenchus Dipsaci Kühn in Western Oregon

Irvin Sigwald Danielson[D] (Chemistry)
B.S., University of New Mexico, 1926
Thesis: Comparison of Biological and Colorimetric Assays for Vitamin A and the Determination of Vitamin A in the Liver Oil of Chimaera Colliei

Valliere Gwendolyn Decker[A] (Home Economics)
B.A., University of Iowa, 1919
Thesis: A Study of Hair Dress and Head Coverings in Ancient Egypt, Greece and Rome, and in Western Europe to the Close of the Eighteenth Century

Florence Folda[A] (Zoology)
B.A., Doane College, 1927
Thesis: Megalocotyle Marginata, a new Genus of Ectoparasitic Trematode from Rock-fish

Tirey Foster Ford (Chemistry)
B.S.,University of Washington, 1927
Thesis: A Molecular Kinetic Study of the Aniline Benzaldehyde Condensation

Alice Erna Gerdeman[A] (Bacteriology)
B.A., Central Wesleyan College, 1922
Thesis: The Effect of Storage at Different Temperatures on Bacterial Content of Ice Cream

Harry Gilbert Glaser[A] (Physics)
B.S., University of Washington, 1917
Thesis: Anomalous Changes of Certain Physical Properties of Magnetic Metals Predicted by a Resistance-Temperature Curve

Muriel Jasper Gnagy (Chemistry)
B.S.,Washington State College, 1917
Thesis: The Effects of Polarizing Currents and of Temperature upon the Potential of the Oxygen Electrode and its Use in Electrometric Titrations

Henry Campbell Greene (Botany)
B.S., University of Washington, 1928
Thesis: The Myxomycetes of Western Washington

George Herbert Hitchings[D] (Chemistry)
B.S., University of Washington, 1927
Thesis: A Study of the Component: Carbon Dioxide of Sea Water

James Lynn Hoard (Chemistry)
B.S. in Ch.E., University of Washington, 1927
Thesis: The Equilibrium of the Reaction between Nitrogen and Carbon Dioxide in the Electric Arc

Eugene Harvey Huffman (Chemistry)
B.A., University of Colorado, 1927
Thesis: Addition Compounds of Copper Halides and Silver Nitrate with Benzyl Sulfide

Gretchen Kaufman[A] (Chemistry)
B.A., Stanford University, 1921
Thesis: The Effect of Added Fructose on the Rate of Hydrolysis of Glycogen in the Autolyzing Liver

Lewis Larrick (Physics)
B.A., Phillips University, 1926
Thesis: An X-ray Investigation of the Crystal Structure of Mechanically Strained Aluminium

Rex Elias Lothrop [A] (Chemistry)
B.E., Tulane University, 1920
Thesis: The Effect of Some Electrolytes on the Inversion of Emulsions

Vera Marie Luse (Mathematics)
B.S. University of Idaho, 1923
Thesis: Certain Associated Surfaces Determined by Certain Space Cubics

Ahamedur Rahman Nizam[D] (Zoology)
B.S. in Fish., University of Washington, 1928
Thesis: A Comparative Study of the Nutritive Value of Fish Meals, Beef Liver, Herring, Mixtures of Meals and Dogfish Liver Oil or Liver as Food for Chinook Salmon Fry

Dorothy Pennock (Mathematics)
B.A., Reed College, 1927
Thesis: Surface Curves Studied Through Properties of Normals to their Geodesic Tangents

George Freeman Pettengill[A] (Chemistry)
B.S., Oregon Agricultural College, 1922
Thesis: A Study of the Effect of Electrolytes on the Inversions of Emulsions

Lyman DeArmond Phifer (Botany)
B.S., University of Washington, 1928
Thesis: A Study of the Littoral Diatoms in Argyle Lagoon

George Armytage Rounsefell (Zoology)
B.A., Stanford University, 1926
Thesis: A Racial Study of the Pacific Herring

Edward John Salstrom[A] (Chemistry)
B.S. in Ch.E., Oregon State College, 1923
Thesis: The Reciprocal Influence of the Presence of Sodium Sulfate and of Potassium Sulfate upon the Solubilities of the Two Salts in Water

Theodore Comstock Scheffer[M] (Botany)
B.F., University of Washington, 1926
Thesis: Sterilization of Coniferous Seed-Beds with Low Pressure Steam

James Leslie Snyder (Anatomy)
B.S., University of Washington, 1928
Thesis: An Investigation into the Origin of a Left Inferior Vena Cava and the Embryonic Abdominal Lymphatic Trunk found in the Human Body

Aileen Spaeth (Mathematics)
B.S., University of Washington, 1925
Thesis: Plane Nets Periodic of Period Four under the Laplacian Transformations

Benjamin Joseph Sweo (Chemistry)
B.S., Gonzaga University, 1925
Thesis: The System Pb O-As_2O_5-H_2O (Acid Range)

Harriet Mary Taylor (Bacteriology)
B.A., University of Montana, 1923
Thesis: Group Control as a Method of Controlling Disease

Randall Leslie Thompson[A] (Bacteriology)
B.S., University of Washington, 1927
Thesis: Antibody Formation in Persons Treated Orally with Triple Typhoid Bacterin

Seton Hayes Thompson[M] (Fisheries)
B.S. in Fish., University of Washington, 1927
Thesis: A Study of Factors Affecting the Shrinkage of Clams during Processing

Margery Katherine Walker (Chemistry)
B.A., University of Washington, 1927
Thesis: A Study of the Oxygen Electrode

Albert Walton (Psychology)
M.E., Cornell University, 1902
Thesis: Visual Cues in Maze Running by the Albino Rat

MASTER OF SCIENCE IN CHEMICAL ENGINEERING

Walter Allen Nicholson
B.S. in Ch.E., University of Washington, 1928
Thesis: The Analysis and Fusibility of the Ash from Certain Washington Coals

MASTER OF SCIENCE IN CIVIL ENGINEERING

Leo Alexander Carter
B.S. in C.E., University of Washington, 1928
Thesis: A Study in Statically Indeterminate Beams and Frames

William Theodore Wright
B.S. in C.E., University of Washington, 1928
Thesis: Comparison of the Ordinary with the More Exact Methods of Building Design

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING

Austin Vitruvius Eastman
B.S. in E.E., University of Washington, 1922
Thesis: The Four Element Tube as an Audio Amplifier

Roy Eric Lindblom
B.S. in E.E., University of Washington, 1922
Thesis: The Effect of Air Pressure on the Shape and Size of Lichtenberg Figures

Fay Harris Sweany
B.S. in E.E., Washington State College, 1925
Thesis: A Method of Frequency Control for Small Hydro-electric Plants

MASTER OF SCIENCE IN MINING ENGINEERING

Charles George Black
B.S. in M.E., Case School of Applied Science, 1928
Thesis: The Effect of Certain Operating Variables on the Efficiency of the Coal-washing Table

MASTER OF SCIENCE IN FISHERIES

Lynne Guy McKee
B.S. in Fish., University of Washington, 1927
Thesis: Effect of Headspace and Vacuum on Internal Pressure of Salmon Cans during Processing

MASTER OF SCIENCE IN PHARMACY

Lewis Clemence Britt
B.S., Oregon State College, 1926
Thesis: Correlation of the Clinical and Experimental Findings with Benzyl Benzoate

Cliveden Llwyd Cox
B.S., University of Washington, 1929
Thesis: Pacific Northwest Plants as Potential Drugs

Abigail Beatrice Poole
B.S., University of Washington, 1928
Thesis: The Effect of Plant Extracts on the Blood Sugar

MASTER OF SCIENCE IN HOME ECONOMICS

Martha Ellen Davis
B.S. in Ed., Kirksville State Teachers College, 1916
B.S. in H.E., Oregon Agricultural College, 1921
Thesis: The Percentage Composition of Cooked Food Mixtures; Cakes

Valeska Jessie O'Keefe[A]
B.S., University of Washington, 1927
Thesis: The Relation of the Cooking Process to the Vitamin A Content of Cooked Carrots

Ruth Antoinette Potter[A]
B.S., University of Washington, 1928
Thesis: Further Experimental Data on Relative Cost of Gas and Electricity for Cooking including a Special Study of a Maintained Temperature Control Electric Range

MASTER OF FORESTRY

Hugh Henry Honnen
B.F., University of Washington, 1928
Thesis: Tractor Logging

MASTER OF BUSINESS ADMINISTRATION

Philip Griesinger[M]
B.S., Washington State College, 1919
Thesis: The Problem of Location in the Pike Place Farmers Market of Seattle, Washington

Elva Belle Groat[A]
B.A., Washington State College, 1913
Thesis: Wheat: World Production and International Trade

Harold Harward[A]
B.S., Brigham Young University, 1927
Thesis: State Taxation of Financial Institutions

Winfield LeRoy Knies
B.A., Colorado State Teachers College, 1923
Thesis: A Method for Teaching Typewriting

Margaret Jane Thompson[M]
B.A., University of Washington, 1927
Thesis: Development and Comparison of Industrial Relationships in Seattle

MASTER OF FINE ARTS

Clara MacGowan[A]
B.F.A., University of Washington, 1927
Thesis: Textile Design from Primitive to Modern Periods

Ruth Esther Pennington
B.F.A., University of Washington, 1927
Thesis: Illustrations for Book of Bible Stories

Hjordis Smith[A]
B.F.A., University of Washington, 1927
Thesis: Costumes and Stage Designs for Marco Millions by Eugene O'Neill

MASTER OF ARTS IN MUSIC

Howard Henry Hanscom
B.M., Linfield College, 1911
Thesis: Suite for Soprano Voice, Violin, Clarinet and Piano

Carl August Pitzer
B.A., University of Washington, 1923
Thesis: "Youth" to an American Boy and Girl

CIVIL ENGINEER

George Danforth Burr
B.S. in C.E., University of Washington, 1925
Thesis: Airplane Landing Fields

John Arthur Elliott
B.A., Willamette University, 1907
B.S. in C.E., University of Washington, 1909
Thesis: The Location and Construction of the Mitchell Point Section of the Columbia River Highway, Oregon

George Elwyn Large
B.S. in C.E., University of Washington, 1922
Thesis: Slope Deflection Theory for Flexural Members of Non-Uniform Cross-Section and Its Application to the Analysis of a Statically Indeterminate Truss

Frederick Charnley Smith
B.S. in C.E., University of Washington, 1926
Thesis: Operating Methods at Plant of the Glacier Gravel Company

ELECTRICAL ENGINEER

George Wellington Rupp
B.S. in E.E., University of Washington, 1920
Thesis: Method and Effect of Charging for Telephone Service on an Elapsed Time Basis

ENGINEER OF MINES

Simon Harry Ash
B.S. in Coal Mining Engineering, University of Washington, 1924
Thesis: Mining Operations at the New Black Diamond Mine of the Pacific Coast Coal Company

DOCTOR OF PHILOSOPHY

Ernest Clement Angst
B.S., University of Washington, 1922
M.S., University of Washington, 1923
Thesis: Some New Agar-digesting Bacteria

Henry Matthew Burlage[H]
B.A., Indiana University, 1919
M.A., Harvard University, 1921
B.S. in Pharmacy, Purdue University, 1924
Thesis: A Study of Asarum Caudatum

John Edward Corbally
B.A., Whitworth College, 1918
M.A., University of Washington, 1925
Thesis: The Extent and Importance of Pupil Mobility as an Administrative Problem in the Public Schools of the State of Washington

Henry Cremer[A]
B.A., University of Washington, 1915
M.A., University of Washington, 1921
Thesis: The History of Teacher Training in the Public Higher Institutions of Washington

Meryl William Deming
B.A., University of Oregon, 1923
M.A., University of Oregon, 1925
Thesis: Heterogeneous Equilibria between Aqueous and Metallic Solutions

Garland Oral Ethel[A]
B.A., University of Washington, 1923
M.A., University of Washington, 1927
Thesis: Magazine Studies in the English Reputation of Samuel Taylor Coleridge as Poet and Critic

Frank Kale Foster
B.Ed., University of Washington, 1921
M.A., University of Washington, 1923
Thesis: The Status of the Junior High School Principal

Lena Armstrong Hartge
B.S., University of Washington, 1917
M.S., University of Washington, 1922
Thesis: Nereocystis

Frank Andrew Lee[A]
B.S., University of Washington, 1923
Ph.C., University of Washington, 1925
M.S., University of Washington, 1926
Thesis: A Study of the Reactions of Nitrosyl Chloride

Gabriel Loftfield[A]
B.S., Valparaiso University, 1893
B.A., University of Washington, 1918
M.A., University of Washington, 1921
Thesis: Secondary Education in Norway

Lucius Oliver McAfee
Ph.B., University of Chicago, 1916
M.A., University of Chicago, 1921
Thesis: An Experimental Investigation of the Relation between Ability Shown in a Special Methods Class and Ability to Produce Changes in Pupils in the Training School

Louis John Neidert[A]
B.A. in Ed., University of Washington, 1924
M.A., University of Washington, 1925
Thesis: The Manuals and Directories of City School Systems

Francis Fountain Powers[A]
B.A., University of Washington, 1923
M.A., University of Oregon, 1927
Thesis: A Study of the Content of Courses, Some Selected Texts and Journals in Educational Psychology

Victor Elliott Wellman
B.A., Phillips University, 1924
M.S., University of Washington, 1927
Thesis: New Studies of Factors Controlling Type of Water-Soap-Oil Emulsions

Undergraduate Scholarship Honors—1929

First Junior Honors

Albrecht, Herta Magdalene (B.A.)
Andrews, Siri M. (L.A.)
Armstrong, Donald Wm. (L.A.)
Ashby, Paul Flesher (L.A.)
Barthell, Russell Wm. (L.A.)
Bradburn, George Burnell (Pharm.)
Burrows, Gladys E. (L.A.)
Dexter, Glenn Edward (L.A.)
Dingle, John Holmes (Pharm.)
Flint, Einar Philip (Sci.)
Gellermann, Helen (Sci.)
Gordon, Blanche (Journ.)
Grimes, Nancy Virginia (L.A.)
Hammer, Karl Elvin (Engr.)
Hazel, George Ralph (B.A.)
Hegg, Agnes Constance (F.A.)
Huber, Walter (B.A.)
Jackson, Earl Wm. (L.A.)
Johnson, Wm. Redmond (Sci.)
Jolley, Irving (Sci.)
Jones, Mrs. Beatrice Angeline K. (Edu.)
Jones, Richard F. (B.A.)
Lockitch, Percy (B.A.)
Lund, Curtis W. (Engr.)
McCoy, Kenneth Maxon (L.A.)
Meier, Ronald Wilson (L.A.)
Middleton, Ethel Rhoda (L.A.)
Morrill, George Edwin (For.)
Nagel, Sylvia Dorothea (L.A.)
Nelson, James Cecil (L.A.)
Newkirk, Wm. Homer (L.A.)
Partansky, Alexander (Sci.)
Pasley, Robert E. (B.A.)
Pfisterer, Elsa (B.A.)
Plymire, Reginald Floyd (Engr.)
Rapraeger, Elmer Ferdinand (For.)
Shanahan, Daniel James (L.A.)
Smith, Ronald Bromley (Engr.)
Stinson, Howard (B.A.)
Sweet, William Herbert (Sci.)
Treuer, Robert Ferrell (L.A.)
Tuneish, Nellie Midori (L.A.)
Winston, Alexander Porter (L.A.)

Second Junior Honors

Beggs, Margaret (L.A.)
Benson, Howard Wm. (Edu.)
Bowen, Mary Elizabeth (L.A.)
Brady, Anna Louise (L.A.)
Bresnan, Rose Amelia (L.A.)
Capus, John Paul (B.A.)
Carleton, William Hodder (F.A.)
Cartano, John D. (L.A.)
Casper, Barry (L.A.)
Connick, Edwina Frances (L.A.)
Cox, Muriel S. (L.A.)
Crum, Mrs. Jeannette Hill (Edu.)
DeGarmo, Paul Ernest (Engr.)
Delaurenti, John (B.A.)
Diem, Virginia Harriet R. (F.A.)
Farrar, Elizabeth (Sci.)
Fickel, Doris (L.A.)
Fields, Elsie Grace (L.A.)
Hadley, Elsie Jane (B.A.)
Hamman, Roy George (B.A.)
Harrington, Emmett Stephen (B.A.)
Ingham, Thomas Reed (Sci.)
Jorgensen, Betty M. (L.A.)
Joseph, Ruth Eleanor (F.A.)
Keller, Jack Daniels (L.A.)
Kiely, John Roche (Engr.)
Laude, Thelma Elizabeth (L.A.)
Lewis, Margaret Ruth (L.A.)
Lloyd, Lowell C. (Sci.)
Lundstrom, Herbert F. (Engr.)
Macintyre, Cornelia Hall (F.A.)
McDonald, Phyllis (L.A.)
Miller, Hortense Hickman (Sci.)
Moore, Philip Hance (Sci.)
Morbeck, Donald Charles (B.A.)
Morck, Ethel Poole (Mrs.) (F.A.)
Morris, William Griffith (For.)
Nuckols, Hugh Hunter (Sci.)
Patterson, Mrs. Madge Boyar (L.A.)
Pike, Mark J. (For.)
Potter, Allen R. (Edu.)
Preston, Helen Erma (L.A.)
Rohlfs, Marcus Speckert (L.A.)
Rosenberg, Dorothea H. (L.A.)
Schenk, Elizabeth (L.A.)
Scott, Dorothy Allen (Journ.)
Shagren, Margaret P. (L.A.)
Sorensen, Oscar S. (Sci.)
Striker, Kenneth Louis (F.A.)
Stub, Sylvia Antonia (L.A.)
Sundeen, Bertha (Edu.)
Tang, Wu (L.A.)
Tanke, Carl John (Edu.)
Tinker, Dorothy (Sci.)
U'Ran, Charles Gordon (B.A.)
Van Arkel, G. Harvey (L.A.)
Wardall, Cedric Marshall (B.A.)
Westfall, Marjorie E. (Sci.)
Wetherell, Russell (L.A.)
Yount, Reuel K. (L.A.)
Zeeuw, Anna Isabel (Sci.)

First Sophomore Honors

Albin, Tom Burns (Sci.)
Alvensleben, Margaret A. von (L.A.)
Anderson, Mabel Charlotte, (B.A.)
Andrews, Marjorie Sue (F.A.)
Bakenus, Priscilla K. (L.A.)
Baker, Lucille I. (F.A.)
Bartlett, Marianna (F.A.)
Bell, Mary Helen (L.A.)
Berg, Geraldine C. (L.A.)
Bixby, Mary Elizabeth (L.A.)
Bona, Harry Milton (L.A.)
Bourland, Minnie L. (L.A.)
Brown, Malcolm Johnston (B.A.)
Burns, Bartlett (Engr.)
Christenson, Waldo B. (F.A.)
Clemow, Bice Thomas (L.A.)
Coats, Robert Roy (Mines)
Day, Richard Mortimer (F.A.)
DeLacy, Emerson Hugh (L.A.)
Dermond, Elizabeth (L.A.)
Duncan, Marion Alex (Engr.)
Duvall, Lois Irene (L.A.)
Eastwood, Mary Elizabeth (F.A.)
Edelson, Mary (L.A.)
Edwards, Gertrude Doris (L.A.)
Grant, Loraine Amelia (F.A.)
Griffin, Hortense Marie (Sci.)
Hadley, William (Engr.)
Hall, Donald Thornton (Sci.)
Hibbs, Lois (F.A.)
Hillman, Arthur Wm. (L.A.)
Horsky, Chas. Antone (L.A.)
Hoyt, Kathleen (F.A.)
Jensen, Ingeborg Elizabeth (Sci.)
Kaiser, James George (For.)
Karshner, Edwin J. (B.A.)
Leslie, Dorcas (F.A.)
Logg, Mildred Juanita (L.A.)
Lucas, Edward Robinson (L.A.)
Mahnken, Arline Elizabeth (F.A.)
Malneritch, Rose (L.A.)
Markham, Wilbur (For.)
Martin, George Coleman (Engr.)
Martinson, Edwin Oscar (Engr.)
Marx, Walter John (L.A.)
Millay, Margaret (L.A.)
Miller, Kathleen Emma (F.A.)
Miller, Neal E. (Sci.)
Mowry, Paul Richard (L.A.)
Myers, Abraham Francis (Engr.)
Nelson, Helen Marie (F.A.)
Ness, Arthur Thomas (Sci.)
Noble, Anna Brownell (L.A.)
Norris, Chas. Head (Engr.)
Osterman, Betty (Sci.)
Palo, George Mathias (Engr.)
Pennell, Maynard L. (Engr.)
Pfefferle, Florence Gertrude (L.A.)
Quist, Helen (L.A.)
Read, Sarah Louise (L.A.)
Richards, Leverett (L.A.)
Rubenstein, Anita (L.A.)
Russell, Henry Wm. (L.A.)
Sarginson, John (For.)
Scott, Lucille Edith (Sci.)
Serguritan, Numeriano (L.A.)
Smith, Margaret Louise (F.A.)
Spear, Sidney David (L.A.)
Stigler, George Joseph (B.A.)
Strand, Solveig Jean (L.A.)
Taylor, Joseph Richard (F.A.)
Van Horn, Philip Roland (Sci.)
Vopni, Sylvia Freda (L.A.)
Voss, June Amanda (L.A.)
Ward, Richard Blake (L.A.)
Watanbe, Teru M. (L.A.)
Williams, Mrs. Clara Cook (F.A.)
Wuthenow, Dorothy Isabel (L.A.)

Second Sophomore Honors

Ablan, Guilermo (Fish.)
Albrecht, Elsie Marie (F.A.)
Anderson, Ruth Elizabeth (F.A.)
Balch, Donna (B.A.)
Beckwell, Bessie Christine (L.A.)
Bell, Merrill Garde (B.A.)
Bertsche, Wm. Henry (B.A.)
Birkeland, Halvard Wessel (Engr.)
Bowen, Gilbert (Sci.)
Browne, Florinda H. (F.A.)
Byers, Norris Arol (L.A.)
Carlson, Alden Carl (Engr.)
Carlson, Frances Sherwood (F.A.)
Carlson, Gladys May (F.A.)
Collins, Cecil Franklin (Sci.)
Cooper, Louise Hazel (Sci.)
Director, Estelle Jane (Sci.)
Douglass, Marjorie Glen (F.A.)
Edelen, Cornelia Alice (L.A.)
Elder, Marian Jane (L.A.)
Evans, Dorothy Leora (L.A.)
Galitzin, Alexander (F.A.)
Ghiglione, Angelo F. (Engr.)
Giboney, Edgar Bishop (Engr.)
Gill, Donald Gatward (B.A.)
Goldstein, Beatrice (F.A.)
Gordon, Lewis Frank (Pharm.)
Harper, Genevieve A. (L.A.)
Haselbauer, Rudolph (L.A.)
Haugland, Vernon Arnold (L.A.)
Hennessy, Albert Ernest (F.A.)
Hunt, Sarah Elizabeth (L.A.)

Huntington, Ethel Gladys (F.A.)
Johnson, Harold Wm. (Sci.)
Kadish, Maurice (L.A.)
Kanazawa, Tooru Joseph (L.A.)
Kendler, Helen Katherine (B.A.)
Kwapil, Helen Marie (L.A.)
Laube, DeLora Lee (F.A.)
Lockwood, David E. (B.A.)
Loop, Herbert Enzo (Engr.)
Manolides, Evans Dimitrios (L.A.)
Marks, Madlaine Lora (Sci.)
Martin, Genevieve (L.A.)
McGillivrary, John Duncan (L.A.)
Mills, Elizabeth Tabor (L.A.)
Mines, Marjorie (L.A.)
Newberry, Max Prentice (Sci.)
Noble, Katherine May (Sci.)
Okazaki, Jun (B.A.)
Olson, Thelma Mary (L.A.)
Opsvig, Virginia Bernice (F.A.)
Parrish, Virginia Agnes (L.A.)
Pearl, John C. (L.A.)
Peniston, Quintin P. (Engr.)
Petley, Mary Alice (L.A.)
Pittman, Robert Graham (Fish.)
Plamondon, Eleanor Lee (F.A.)
Richardson, Swanhild (F.A.)
Risk, Clyde Osmond (B.A.)
Roehr, Margaret Emily (F.A.)
Sangder, Otto Henry (Engr.)
Schmitz, Julia M. (L.A.)
Shipley, Jean (L.A.)
Singer, Cecil Allen (B.A.)
Skooglund, Carl (F.A.)
Smith, Constance Mary (F.A.)
Smith, Elizabeth Emily (L.A.)
Smith, Irene Mildred (Sci.)
Smith, Ross (Engr.)
Sparks, Harry (For.)
Spoor, Wm. Arthur (Fish.)
Stanard, Frances Louise (Sci.)
Storey, Priscilla (Sci.)
Stump, Wilfred Charles (L.A.)
Tartar, Virginia (Sci.)
Taylor, Stanley Archie (L.A.)
Tomowske, Alice Mary (L.A.)
Tomowske, Clare Natalie (L.A.)
Tuell, David Ripley (L.A.)
Vaughn, Elizabeth Anna (Sci.)
Verd, Paul Harris (Engr.)
Walter, Barbara Mary (L.A.)
Ward, Margaret Ethel (F.A.)
Washburn, Jane Mary (F.A.)
Willis, Katherine Margaret (L.A.)
Yost, Allan Daniel (B.A.)

Freshman Honors

Allen, Sally Sue (L.A.)
Ahlers, Eleanor Emily (L.A.)
Alweis, Lester (B.A.)
Anderson, Donald Carl (Engr.)
Ariiqumi, Iku (Pharm.)
Baker, Glenn A. (L.A.)
Barter, Gilbert M. (Engr.)
Bassett, Ralph (L.A.)
Baum, Margaret (L.A.)
Beeman, Robert Mateer (For.)
Beeson, John Carleton Jr. (B.A.)
Bell, James Wenman (L.A.)
Berolski, Vivian Frances (F.A.)
Bloomberg, Raymond Carl (L.A.)
Boyd, Marian Dale (L.A.)
Branigan, Frances V. (B.A.)
Brattain, Ross Robert (Engr.)
Brooks, Marion Katherine (Sci.)
Brownell, Roy Arthur (Engr.)
Brownton, Dorothy Clarisse (F.A.)
Calmer, John A. (Engr.)
Carey, Ilo Alline (F.A.)
Chaffee, Leslie Martin (Sci.)
Chapman, Wilbert McCloud (Fish.)
Chen, Kuan Chin (L.A.)
Coffman, Jean (F.A.)
Cohen, Lucile Jean (L.A.)
Cook, Dorothy Isabelle (L.A.)
Corey, Eleanor Claire (L.A.)
Cox, Dorothy Nelle (L.A.)
Crowe, George Frederick (Engr.)
Cunningham, Robert C. (Engr.)
Dearing, Ruth Clair (Sci.)
DeLacy, Phillip Howard (L.A.)
Diehl, Marion Elizabeth (F.A.)
Dishington, Herman (Engr.)
Doi, Tulyo F. (Sci.)
Dunn, Bryant Reeve (L.A.)
Dunn, Clarence L. (Sci.)
Edelson, Dena (B.A.)
Epstein, Arthur (B.A.)
Ernst, Karl (F.A.)
Estep, William C. (L.A.)
Farber, Ethel, (B.A.)
Field, Norman Livingston (Mines)
Forrest, Florence C. (B.A.)
Friedman, Cecil A. (Sci.)
Fujita, Satoshi (Engr.)
Gadsby, Margaret Alice (L.A.)
Gendelmeyer, Clarice Ruth (L.A.)
Gifford, Marion Alberta (L.A.)
Gill, Dorothy (Sci.)
Gimble, Ray (L.A.)
Gochnour, Harvey Donald (F.A.)
Gray, Barbara (Sci.)
Grodstein, Florence (L.A.)
Hansen, Elmer D. (Engr.)
Harmen, Ruth Eleanor (L.A.)
Harter, Dana Eugene (Sci.)
Hatch, Maurice Franklin (Engr.)

Heathers, Glen Leon (L.A.)
Hentschel, Helen Amanda (L.A.)
Hidden, Helene Mary (F.A.)
Higday, Dorothy Rose (Sci.)
Hill, Glennette (L.A.)
Hill, Thomas Reginald (Engr.)
Holmdahl, Norman George (Engr.)
Hopkins, Adeline Faye (B.A.)
Hoppe, Gertrude Nerissa (Sci.)
Horstman, Alice Irma (B.A.)
Hutchinson, Robert W. (Engr.)
Jennings, Bernice Ann (L.A.)
Jensen, Verna Theodora (B.A.)
Johanson, Perry (F.A.)
Johnson, Robert Eugene (Sci.)
Johnston, Kathleen J. (F.A.)
Keister, Naomi Ruth (L.A.)
Kemp, Charles (L.A.)
Kennedy, Angela (L.A.)
King, Robert Winfred (L.A.)
Lapham, Gwendolyn M. (L.A.)
Larsen, Grace (L.A.)
Larson, Mildred Carmen (L.A.)
Lawrence, Robert H. (L.A.)
Leach, Kenneth Lau(Sci.)
Leighton, Winifred Jean (F.A.)
Lewis, James Blazer (For.)
Linde, Norman Nelson (Engr.)
Little, Walter Burgess (Engr.)
Lloyd, Rodney S. (L.A.)
Lockwood, Frank B. (L.A.)
Lundell, Ellen A. (Sci.)
McBean, Kelly (F.A.)
McCament, Robert William (B.A.)
MacDonald, Charles Graham (F.A.)
McMeen, Robert Edward (Engr.)
McNabney, Ralph (Engr.)
McVicar, Kathryn Mary (F.A.)
Major, Eugene Francis (B.A.)
Mansfield, E. Everett (Engr.)
Markham, Aaron (Engr.)
Marsh, William Dailey (L.A.)
Martell, Alda Juliette (L.A.)
Martin, Gustav Julius (Sci.)
Martin, Lura Irene (F.A.)
Metcalf, Donald Gray (B.A.)
Miller, James Lester (Pharm.)
Mitchell, Harold DeLong (L.A.)
Montfort, Leslie Annie (L.A.)
Moore, Catherine E. (F.A.)
Moreland, Oliver James (Engr.)
Morgenroth, Margaret A. (Sci.)
Morry, Ellen Margaret (L.A.)
Moulton, Ralph Wells (Engr.)
Murphy, Grant P. (B.A.)
Nagelvoort, Elizabeth Louise (F.A.)
Nelson, Marion Marshall (For.)
Nelson, Martin Oliver (L.A.)
Nelson, Robert A. (B.A.)
Nordquist, Harry Edwin (F.A.)
Ogle, Mrs. Geraldine Hamlet (F.A.)
Olson, Margaret Anna (L.A.)
Orman, Oscar Carl (L.A.)
Otis, John Foster (Engr.)
Owsley, J. Milton (B.A.)
Palacio, Rosa Elena (F.A.)
Pennell, Norma Katherine (L.A.)
Philbrick, Conrad Benson (L.A.)
Pike, Alice Harriet (L.A.)
Portras, Clara Delia (Sci.)
Porter, Lloyd Alan (L.A.)
Powers, Philip Johnson (L.A.)
Prael, Barbara Isabel (L.A.)
Profitt, Edith Evelyn (B.A.)
Radke, Frederick August (Engr.)
Rhoades, Fordyce Lauren (F.A.)
Richards, Helen Muriel (L.A.)
River, Cecil John (B.A.)
Rose, Mary Eleanor (L.A.)
Ross, William Andrew (B.A.)
Rummens, Elaine Barbara (L.A.)
Samuelsen, Agnes (L.A.)
Schliewe, Robert (Engr.)
Scott, Logan Dick (Engr.)
Scovill, Norman Dexter (L.A.)
Seitz, Frederick William (Mines)
Sellman, Elsie Lonane (L.A.)
Shadbolt, Julia Jane (L.A.)
Shumm, Wiley Alvin (Engr.)
Sibley, Frances Dean (L.A.)
Simonarson, Einar G. (L.A.)
Slater, Helen M. (L.A.)
Sloane, Dorothy Ola (L.A.)
Smith, Ray William (B.A.)
Snodgrass, Robert Joseph (L.A.)
Soderburg, John Albin (L.A.)
Steil, Naomi Clare (B.A.)
Steuck, Marjorie Ruth (B.A.)
Stevens, Louise Francis (Sci.)
Stuart, Gladwyn May (F.A.)
Summers, Jean (L.A.)
Sumner, Francis Holly (Sci.)
Swanson, Ernest B. (L.A.)
Swygard, Kline (L. A.)
Telfer, Ruth (L.A.)
Thomas, Gwendolyn (F.A.)
Thomson, Darwin Sidney (L.A.)
Trindall, Alice Margaret (L.A.)
Tripp, Herbert Arthur (Engr.)
Trueblood, Harold Clyde (Engr.)
Turbitt, John Gordon (Engr.)
Urquhart, James Ghormley (L.A.)
Usdane, Nathan George (L.A.)
Van Uhden, Robert Thomas (B.A.)
Wallace, Willette (L.A.)
Watanbe, Yuki (L.A.)
Watkins, James Edward (L.A.)
White, Stewart (L.A.)
Willard, Robert R. (L.A.)
Williams, Richard L. (L.A.)
Wilson, Gordon Keith (L.A.)
Winslow, Iris Noreen (L.A.)
Young, Grace Eleanor (Sci.)

COMMISSIONS IN THE OFFICERS' RESERVE CORPS, UNITED STATES ARMY

SECOND LIEUTENANT, INFANTRY

Lee James Adamson
Elliott Marshall Amundsen
Jordan Henry Barraclough
Robert Underwood Bonnar
Thomas Randolph Booker, Jr.
Franz Joseph Erlenborn
Robert Bruce Hitchman
Gordon Whitney McKinstry
Roy E. Meister
Frederick Varner Niemann
Lawrence Pesce
Carl Thomas Richardson
Arden Croco Steinhart
Emmett Alfred Ziebarth

SECOND LIEUTENANT, COAST ARTILLERY

Herbert Harrington Anderson
Albert Alexander Browne
Eilert Johannes Eliasen
Emmet Patrick Kelly
William Wurth Kriegel
Gaynor Huggins Langsdorf
Waino Armas Lauri
Robert Corey Leithead
Larned Ames Meacham
Irving Herbert Rowell
Herbert Nels Steen
William Wallace White

SECOND LIEUTENANT, AIR CORPS

Byron Hamilton Galt
Karl Elvin Hammer
Earl Riebe Pierce

HONOR GRADUATES OF THE RESERVE OFFICERS' TRAINING CORPS

Albert Alexander Browne
Robert Bruce Hitchman

FELLOWSHIPS, SCHOLARSHIPS AND PRIZES

June 17, 1929

THE LORETTA DENNY FELLOWSHIPS

James Lynn Hoard (Chemistry)
B.S. in Ch.E., University of Washington, 1927
M.S., University of Washington, 1929

Helen Elizabeth Searls (Greek)
B.A., University of Washington, 1929

Dorothy Frances Atkinson (English)
B.A., Vassar College, 1923
M.A., University of Washington, 1927

Alternates

Paul Louden Gow (Chemistry)
B.S. in Chem., University of Washington, 1929

Kathleen Margaret Jackson (Sociology)
B.A., University of Washington, 1929

Margaret Frances McCurdy (Chemistry)
B.S., Dalhousie University, 1923
M.S., Dalhousie University, 1925

THE ARTHUR A. DENNY FELLOWSHIPS

Dorothea Dowty (History)
B.A., University of Washington, 1929

Lawrence John Zillman (English)
B.A., University of Washington, 1928

Edgar Andrew Kelly (Pharmacy)
B.S. in Pharm., University of Washington, 1929

Robert Marion Reed (Mines)
B.S., University of Washington, 1929

Herwegh Joseph Lechner (Education)
B.S., Washington State College, 1910
B.A. in Ed., Washington State College, 1910
M.S., Iowa State College, 1915

Paris Roy Brammell (Education)
B.A., McPherson College, 1923
M.A., University of Michigan, 1928

FELLOWSHIPS IN THE COLLEGE OF MINES AND THE NORTHWEST EXPERIMENT STATION, UNITED STATES BUREAU OF MINES

Charles Butler (Coal Mining)
B.S. in Chem., Monmouth College, 1929

Carl Edward Curtis (Ceramics)
B.S., College of Puget Sound, 1919
M.S., University of Washington, 1925

Carroll B. Porter (Coal Mining)
B.A., Simpson College, 1929

THE DUPONT FELLOWSHIP

Theodore William Evans

THE BON MARCHE INDUSTRIAL FELLOWSHIP

Caroline Williams Mertie Willigar

THE NUTRITION FELLOWSHIP IN HOME ECONOMICS

Esther Bierman Simon

THE NAKATA FELLOWSHIP IN ORIENTAL STUDIES

Shigeaki Ninomiya

THE SKAGIT VALLEY GOLDENSEAL FARM RESEARCH FELLOWSHIP IN PHARMACY

Ewen Gillis

THE ISABELLA AUSTIN MEMORIAL SCHOLARSHIP
Margaret Millay

THE GAMMA PHI BETA SCHOLARSHIP
Ethel Middleton

THE FREDERICK AND NELSON SCHOLARSHIPS
M. Irene Nicholson Walter Foreman Clift
William Scott Post

THE BEECHER KIEFER MEMORIAL SCHOLARSHIP IN MUSIC
Franz Brodine

THE LADIES MUSICAL CLUB SCHOLARSHIP
Glorian Butler Thomas

THE PAUL KARSHNER MEMORIAL SCHOLARSHIPS
Marguerite Kupfer Gerald Larson
Gertrude Julien

THE P. E. O. SCHOLARSHIP
Isabel Harris

THE SCHOLARSHIP TO THE FONTAINEBLEAU SCHOOL OF FINE ARTS IN FRANCE
Richard Edward Lytel

THE DEPARTMENT OF ARCHITECTURE TRAVELING SCHOLARSHIP
Stanley Carl Brogren

THE SIGMA DELTA CHI SCHOLASTIC AWARD IN JOURNALISM
Lorna Slipper Maybelle Ghiglione Ruth Tadlock

THE SEATTLE TIMES AWARD
Elizabeth Baker Stewart

PUYALLUP UNIVERSITY OF WASHINGTON ALUMNI SCHOLARSHIP
Margaret Mosolf

PHI SIGMA BIOLOGICAL RESEARCH AWARD
Lyman DeArmond Phifer

THE CARKEEK PRIZE IN LAW
J. Gordon Gose

THE LEVY PRIZE IN LAW
Story Birdseye

THE HELENE BOETZKES PRIZE IN GERMAN
Max Schertel
(Honorable mention to Walter Zobrist)

THE WASHINGTON MUTUAL SAVINGS BANK ESSAY PRIZES IN BUSINESS ADMINISTRATION

Edward Gordon Brown G. Gordon U'Ran Harold Wismer

THE CHARLES H. BEBB PRIZES IN ARCHITECTURE

Katsuochi Tachibana George Nakashima Richard Edward Lytel

THE GLADDING-McBEAN TERRA COTTA COMPANY PRIZE

William J. Fox Harold Ytterdal Frank Clemmer

THE CHARLES LATHROP PACK FOUNDATION PRIZE IN FORESTRY

Elmer Ferdinand Rapraeger Harold W. McClary

THE PHILO SHERMAN BENNETT ESSAY PRIZE IN POLITICAL SCIENCE

DeWitt Williams

THE OMICRON NU PRIZE IN HOME ECONOMICS

Virginia Tartar Ingeborg Jensen

THE CHI OMEGA PRIZE IN SOCIOLOGY

Kathleen Margaret Jackson

THE NORTHWEST CONCRETE PRODUCTS ASSOCIATION PRIZE IN CIVIL ENGINEERING

George Burdette Downer Frederick Knowles Osborn

THE McKEAN BOOK PRIZE

Henry Tatsumi

THE ITALIAN COMMERCIAL CLUB GOLD MEDAL FOR EXCELLENCE IN ITALIAN

Mary Eastwood

CIRCOLO ITALIANO UNIVERSITARIO AWARD

Numeriano Seguritan Katherine MacVicar

THE LEHN AND FINK GOLD MEDAL FOR PHARMACEUTICAL ESSAY

Elsa Lois Hillebrecht

THE AMERICAN PHARMACEUTICAL ASSOCIATION GOLD MEDAL FOR EXCELLENCE IN PHARMACY

Ivor Jones

THE AMERICAN INSTITUTE OF ARCHITECTS MEDAL FOR DISTINCTION IN DESIGN

George Nakashima

THE LINTON MEMORIAL AWARD

Clarence Wilber Loan

THE BETA GAMMA SIGMA AWARD

George Joseph Stigler

THE JUNIOR MILITARY PRIZE

Donald Livingston

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—1929-30

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
Grad. School	788	651	898	442	436	445	601
Men.....	299	275	352	225	237	238	294
Women...	489	376	546	217	199	207	307
Lib. Arts....	634	375	669	2204	2082	1824	2476
Men.....	185	141	196	916	911	751	1076
Women...	449	234	473	1288	1171	1073	1400
Science.....	240	241	315	941	908	823	1118
Men.....	78	81	101	398	405	361	464
Women...	162	160	214	543	503	462	654
Bus. Admin..	150	127	164	1064	1033	881	1215
Men.....	104	91	108	836	808	681	966
Women...	46	36	56	228	225	200	249
Education...	664	396	695	182	199	206	224
Men.....	150	128	167	63	67	64	80
Women...	514	268	528	119	132	142	144
Engineering..	16	14	17	810	796	654	931
Men.....	16	14	17	807	790	648	925
Women...	..	..	..	3	6	6	6
Fine Arts....	166	124	187	821	795	721	938
Men.....	15	20	23	194	202	179	239
Women...	151	104	164	627	593	542	699
Fisheries....	2	2	2	105	111	74	124
Men.....	2	2	2	105	111	74	124
Forestry.....	1	1	1	138	133	111	160
Men.....	1	1	1	135	133	111	157
Women...	..	..	..	3	..	..	3
Journalism...	4	5	5	62	71	53	71
Men.....	3	3	3	40	45	35	45
Women...	1	2	2	22	26	18	26
Law.....	73	59	75	281	274	277	303
Men.....	66	52	68	267	260	260	286
Women...	7	7	7	14	14	17	17
Library Sci..	2	1	2	43	50	55	55
Men.....	..	..	..	2	2	2	2
Women...	2	1	2	41	48	53	53
Mines.....	2	2	2	40	42	33	46
Men.....	2	2	2	40	42	33	46
Pharmacy...	7	5	7	125	130	122	132
Men.....	6	3	6	108	113	106	114
Women...	1	2	1	17	17	16	18
Totals.....	2749	2003	3039	7258	7060	6279	8394
Men.....	927	813	1046	4136	4126	3543	4818
Women...	1822	1190	1993	3122	2934	2736	3576

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 show figures representing the number of individuals registered. Column 3 the number registered during the summer quarter, 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—1929-30

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...	811	671	924	498	504	525	665
Men.....	319	292	374	261	282	289	334
Women...	492	379	550	237	222	236	331
Seniors.....	533	451	553	1094	1299	1327	1329
Men.....	216	202	226	607	722	749	751
Women...	317	249	327	487	577	578	578
Juniors.....	595	495	679	1475	1479	1381	1637
Men.....	166	165	198	861	885	812	965
Women...	429	330	481	614	594	569	672
Sophomores..	146	133	170	1681	1671	1379	1808
Men.....	65	65	73	979	998	784	1038
Women...	81	68	97	702	673	595	770
Freshmen....	84	66	97	2460	2028	1635	2852
Men.....	41	32	42	1405	1222	894	1697
Women...	43	34	55	1055	806	741	1155
Specials.....	33	26	36	50	79	32	103
Men.....	9	8	10	23	17	15	33
Women...	24	18	26	27	62	17	70
Unclassified..	547	161	580	...	...	...	...
Men.....	111	49	123	...	...	...	...
Women...	436	112	457	...	...	...	...
Totals.....	2749	2003	3039	7258	7060	6279	8394
Men.....	927	813	1046	4136	4126	3543	4818
Women...	1822	1190	1993	3122	2934	2736	3576

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 show figures representing the number of individuals registered. Column 3 the number registered during the summer quarter, 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	8,394
During summer quarter	3,039
	11,433
Deduct summer quarter duplicates	435
	10,998

EXTENSION STUDENTS

Extension Classes		
Men	676	
Women	3,596	
		4,272
Home Study		
Men	1,134	
Women	913	
		2,047
Total Extension		6,319

INDEX