

*Miller Robert*  
*Mines Laboratory*  
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FOR 1929-1930



SEATTLE, WASHINGTON

June, 1929

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## NOTICE

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





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## THE UNIVERSITY CALENDAR

1929-1930

## AUTUMN QUARTER

Registration dates. May 13 to June 7; July 8 to August 28; September 24 to 26 inclusive.  
 Latest day for securing reserved sections by payment of fees....Thursday, September 20.  
 Latest day for registration without penalty.....Thursday, September 20.  
 Freshman Week..Begins Friday, September 27, 8:30 a.m.; ends Monday, Sept. 30, 5 p.m.  
 Instruction begins.....Tuesday, October 1, 8 a.m.  
 President's Annual Address.....Friday, October 4, 11 a.m.  
 Regular meeting of Faculty.....Tuesday, October 22, 4 p.m.  
 Latest day for receiving W's without grade.....Monday, October 28, 5 p.m.  
 Thanksgiving recess begins.....Wednesday, November 27, 6 p.m.  
 Thanksgiving recess ends.....Monday, December 2, 8 a.m.  
 Regular meeting of Faculty.....Tuesday, December 10, 4 p.m.  
 Instruction ends.....Friday, December 20, 6 p.m.

## WINTER QUARTER

Registration dates for students in residence.....October 28 to December 20.  
 Registration dates for students not in residence.....October 28 to January 4.  
 Latest day for securing reserved sections by payment of fees for students  
 who preregister.....Tuesday, December 31.  
 Latest day for registration without penalty.....Saturday, January 4, 12 m.  
 Instruction begins.....Monday, January 6, 8 a.m.  
 Regular meeting of Faculty.....Tuesday, January 28, 4 p.m.  
 Latest day for receiving W's without grade.....Saturday, February 1, 12 m.  
 Washington's birthday (holiday).....Saturday, February 22.  
 Regular meeting of Faculty.....Tuesday, March 11, 4 p.m.  
 Instruction ends.....Friday, March 21, 6 p.m.

## SPRING QUARTER

Registration dates for students in residence.....February 10 to March 22.  
 Registration dates for students not in residence.....February 10 to March 29.  
 Latest day for securing reserved sections by payment of fees for students  
 who preregister.....Wednesday, March 26.  
 Latest day for registration without penalty.....Saturday, March 29, 12 m.  
 Instruction begins.....Monday, March 31, 8 a.m.  
 Regular meeting of Faculty.....Tuesday, April 22, 4 p.m.  
 Latest day for receiving W's without grade.....Saturday, April 26, 12 m.  
 Campus Day.....Friday, April 25  
 Regular meeting of Faculty.....Tuesday, June 3, 4 p.m.  
 Memorial Day (holiday).....Friday, May 30.  
 Instruction ends.....Friday, June 13, 6 p.m.  
 Class Day and Alumni Day.....Saturday, June 14.  
 Baccalaureate Sunday.....Sunday, June 15.  
 Commencement.....Monday, June 16.

## SUMMER QUARTER

1930

Registration dates.....April 28 to June 14.  
 Latest day for securing reserved sections by payment of fees for students  
 who preregister (first term).....Saturday, June 14.  
 Special registration day.....Tuesday, June 17.  
 Instruction begins.....Wednesday, June 18, 8 a.m.  
 Latest day for receiving W's without grade (first term).....Tuesday, July 1, 4:30 p.m.  
 Independence Day (holiday).....Friday, July 4.  
 Latest day for receiving W's without grade (full quarter).....Tuesday, July 15, 4:30 p.m.  
 First term ends.....Thursday, July 24, 6 p.m.  
 Latest day for securing reserved sections by payment of fees  
 (second term).....Thursday, July 24  
 Second term begins.....Friday, July 25, 8 a.m.  
 Latest day for receiving W's without grade (second term).....Thursday, August 7, 4:30 p.m.  
 Instruction ends.....Thursday, August 28, 6 p.m.

## THE BOARD OF REGENTS

A. H. B. JORDAN, President.....	Everett
Term ends March, 1934	
J. D. FARRELL, Vice-President.....	Seattle
Term ends March, 1929	
PAUL H. JOHNS, Secretary.....	Tacoma
Term ends March, 1932	
J. M. PERRY.....	Yakima
Term ends March, 1932	
ROSCOE A. BALCH.....	Spokane
Term ends March, 1933	
JOSEPH V. PATERSON.....	Seattle
Term ends March, 1934	
JOSEPH EDWARD LEASE.....	Centralia
Term ends March, 1935	

HERBERT THOMAS CONDON, Assistant Secretary to the Board

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## COMMITTEES OF THE BOARD OF REGENTS

PUGET SOUND BIOLOGICAL STATION.....	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
EDWARD 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 Education 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

DAVID THOMSON, B.A.....	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
.....	Dean of the College of Engineering Engineering Hall
IRVING MACKEY GLEN, M.A.....	Dean of the College of Fine Arts Music Building
JOHN NATHAN COBB.....	Dean of the College of Fisheries Fisheries Hall
HUGO WINKENWERDER, M.F.....	Dean of the College of Forestry Anderson Hall
VERNON McKENZIE, M.A.....	Dean of the School of Journalism Commerce Hall
ALFRED JOHN SCHWEPPE, M.A., LL.B.....	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. Appointments and promotions are listed on page 14. Appointments made after May, 1929, do not appear in this list.

### FACULTY IN THE ORDER OF ACADEMIC SENIORITY

*For alphabetical list with academic histories, see page 16.*

#### PROFESSORS

Landes, Henry	Loew, Edgar Allen
Meany, Edmond Stephen	Daniels, Joseph
Ober, Caroline Haven	Kirsten, Friedrich Kurt
Kincaid, Trevor	Haggett, Winnifred Sunderlin
Padelford, Frederick Morgan	Cox, William Edward
Roberts, Milnor	Cory, Herbert Ellsworth
Osborn, Frederick Arthur	Dakan, Carl Spencer
Savery, William	Wilson, George Samuel
Thomson, David	Harris, Charles William
<sup>3</sup> Johnson, Charles Willis	Martin, Charles Emanuel
Frein, Pierre Joseph	Winger, Roy Martin
Frye, Theodore Christian	Smith, Charles Wesley
Moritz, Robert Edouard	Carpenter, Allen Fuller
Magnusson, Carl Edward	Cox, Edward Godfrey
Lantz, Harvey	McKenzie, Roderick Duncan
Eastwood, Everett Owen	Schweppe, Alfred John
Henry, William Elmer	Thomas, Harlan
Hall, David Connolly	Sidey, Thomas Kay
Gowen, Herbert Henry	McMahon, Edward
Richardson, Oliver Huntington	O'Bryan, Joseph Grattan
Goodner, Ivan Wilbur	Winslow, Arthur Melvin
Glen, Irving Mackey	Tartar, Herman Vance
More, Charles Church	Burd, Henry Alfred
Benson, Henry Kreitzer	George, William Henry
Weinzirl, John	Griffith, Dudley David
Winkenwerder, Hugo	Coon, S. J. (Shirley Jay)
Parrington, Vernon Louis	Nottelman, R. H.
Bolton, Frederick Elmer	Matthews, Harry Thomas
Vickner, Edwin John	McKenzie, Vernon
Raitt, Effie Isabel	Rigg, George Burton
Smith, Stevenson	Rosen, Moritz
Bissett, Clark Prescott	Venino, Albert Franz
Benham, Allen Rogers	Wood, Carl Paige
Ayer, Leslie James	Skinner, Macy Milmore
Cobb, John Nathan	Lynn, Eldin V.
Dehn, William Maurice	Langenhan, Henry August
<sup>3</sup> Woolston, Howard	Guthrie, Edwin R.
Smith, George McPhail	Wilson, Hewitt
Kirkland, Burt Persons	Leib, Karl E.
Gould, James Edward	Orr, Frederick W.
Weaver, Charles Edwin	Tippetts, Charles S.
Umphrey, George Wallace	Uhl, Willis Lemon
Worcester, John Locke	Blake, Ralph M.
Preston, Howard Hall	

<sup>3</sup> Absent on leave.

Patzer, Otto  
 Smith, Harry Edwin  
 Isaacs, Walter F.  
 Grondal, Bror Leonard  
 McMahon, Theresa Schmid  
 Carkeek, Vivian Morgan  
 Thompson, Thomas Gordon

Bishop, Eugene A.  
 Eliot, Thomas Dawes  
 McCormack, Harvey William  
 Mechem, Frank Lawrence  
 \*Spier, Leslie  
 Taylor, Edward Ayres  
 Wilson, William R.

## ASSOCIATE PROFESSORS

Milliman, Loren Douglas  
 Brakel, Henry Louis  
 Goggio, Charles  
 Jones, Robert William  
 Denny, Grace Goldena  
 May, Charles Culbertson  
 \*Anderson, Samuel Herbert  
 Guberlet, John Earl  
 Gross, Mary Emma  
 Newenham, Frances Dickey  
 Harrison, Joseph Barlow  
 Jessup, John  
 Gavett, George I.  
 Eckelman, Earnest Otto  
 \*Lucas, Henry S.  
 Esper, Edwin 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.  
 Arbuthnot, James George  
 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  
 Langford, Cooper H.  
 Ashley, Paul P.  
 Small, George W.  
 Miller, Alfred Lawrence  
 Moore, John Brooks  
 Demmery, Joseph

## ASSISTANT PROFESSORS

Neikirk, Lewis Irving  
 Collier, Ira Leonard  
 Van Ogle, Louise  
 Bliss, Addie Jeanette  
 \*Hoffstadt, Rachel Emilie  
 \*Miller, Robert Cunningham  
 McIntyre, Harry John  
 Beuschlein, Warren Lord  
 Hayner, Norman Sylvester  
 Pratt, Dudley  
 Rowntree, Jesse Irene  
 Powell, Sargent  
 McMinn, Bryan Towne  
 Edmonds, Robert Harold G.  
 Hoard, Lisle George  
 Smith, George Sherman  
 Crawford, Donald Russell  
 \*Cole, Kenneth Carey  
 Lawrence, Charles Wilson  
 Griffin, Eldon  
 Ballantine, John Perry  
 Hildebrand, Christian  
 Parks, Clarence Thomas  
 Creer, Leland Hargrave  
 Rice, Paul Hildreth

Hamilton, James B.  
 Worden, Ruth  
 Dresslar, Martha E.  
 Draper, Edwin Marion  
 Miller, John W.  
 Alexander, J. L.  
 Hill, Raymond  
 Read, William A.  
 Payne, Blanche  
 Rivers, Elizabeth  
 Foster, Henry M.  
 Utterback, Clinton L.  
 Hatch, M. H.  
 Foote, Ernest A.  
 Stern, Bernhard J.  
 McFarlan, Lee A.  
 McKay, George  
 Benson, Edna  
 Luce, Dean  
 Mander, Linden A.  
 Norris, Earl R.  
 Brandstrom, Axel  
 Groth, J. H.  
 Chessex, Jean C. W.

\* Absent on leave.



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.  
 Jarvis, Norman Donald  
 Christian, Byron  
 Dahlin, Ebba  
 Jerbert, Arthur Rudolph  
 Farwell, Raymond Forrest  
 Crawford, Margaret  
 Frazer, William D.

## LECTURERS

Powell, Frederick  
 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  
 Foisie, Frank P.  
 Hauan, Merlin

## INSTRUCTORS

Kirchner, George  
 Chittenden, Hiram Martin Jr.  
 Dobie, Edith  
 Sivertz, Victorian  
 Buck, Helen Marian  
 Smith, Frederick Charnley  
 Van de Walker, Frank C.  
 Eby, Edwin H.  
 Ethel, Garland O.  
 Hulse, Granville G.  
 Ingram, W. H.  
 Miller, Charles J.  
 Sanchez, Federico  
 Windesheim, Karl A.  
 Weir, John  
 Wilson, Francis G.  
 Wilson, William C. E.  
 Wilkinson, Madge  
 Gundlach, Ralph  
 Calhoun, Charles E.  
 Graves, L. Wallis

Thrailkill, W. L.  
 Bird, Winfred  
 Lehman, Harriett Snidow  
 Simpson, Lurline  
 Pearce, Richard J.  
 Schultz, Leonard P.  
 Gunn, Elizabeth  
 Terrell, Margaret E.  
 Moritz, Harold K.  
 Rowlands, T. McKee  
 Newbury, Kirsten Larsson  
 Boxall, Edith A.  
 Jacobs, Melville  
 Burns, Nina  
 Byers, Maryhelen  
 Grant, Ruth  
 Robinson, Rex J.  
 Wilson, Florence B.  
 Wintermute, Edwin H.  
 Pennington, Ruth

\* Absent on leave.

## ASSOCIATES

Worman, Eugenie  
 Radford, Ethel Sanderson  
 Kerrigan, Sylvia Finlay  
 Vickner, Bertha Almen  
 Soule, Elizabeth  
 Edmundson, Clarence  
 Hamilton, Rachel Elizabeth  
 Bagshaw, Enoch  
 Buchanan, Iva  
 Graves, Dorsett  
 Lawson, Jane Sorrie  
 Bogardus, Alice Coleman  
 Putnam, Marguerite  
 Venino, Luella  
 Lynch, Clara Bell  
 Sutton, Wayne Campbell  
 Hall, Amy Violet  
 Wesner, Elenora  
 Mabon, Laura Edna  
 Brown, Lois Eula  
 Wagenknecht, Edward C.  
 Spellman, Bart  
 Higgs, Paul  
 Hamack, Frank Hartmond  
 Helmich, Leone

Terzieff, Ottilie  
 Davis, Erma Nelson  
 Martin, Marion Marguerite  
 Ballaine, Genevieve Knight  
 Lang, J. W.  
 Ankele, Felicie C.  
 Conway, John Ashby  
 Corbally, John E.  
 Cederstrom, Moyle F.  
 Foster, Frank K.  
 Hathway, Marion  
 Leahy, Kathleen N.  
 Ulbrickson, Alvin  
 Wood, Florence  
 Bauer, Hubert A.  
 Blanchard, Fred  
 Cornu, Donald  
 Goodsell, Julia  
 Nix, Martha  
 Seeman, Albert L.  
 Sanderman, L. A.  
 Glover, Harriet F.  
 Hermans, Thomas G.  
 Wilson, Clotilde

## ASSISTANTS FOR 1928-29

*Bacteriology*

Chaney, Bessie, B.S.  
 Hirschman, Joy, B.S.

*Business Administration*

Happ, Howell, B.B.A.  
 Johnson, Werner, B.A.  
 King, Robert W., B.B.A.  
 Mackenzie, Donald H., M.B.A.  
 Pelz, Freda, B.B.A.  
 Swift, Helen C., B.A.  
 Wann, A.W., B.B.A.

*English*

Anderson, Victoria, M.A.  
 Atkinson, Dorothy, M.A.  
 Beal, Maud L., B.A.  
 Burgess, Jennie P., M.A.  
 Robson, Wesley, B.A.  
 Walters, Margaret C., M.A.  
 Windhusen, Anne, B.A.

*History*

Robe, Cecil L., B.A.

*Home Economics*

Hurlburt, Grace K., B.S.  
 Libbee, Frances, B.S.

*Library*

Lensrud, Mabel, B.S. (Lib.Sci.)

*Mathematics*

Luse, Vera M., B.S.

*Music*

Anderson, Iris Canfield, B.M.  
 Burns, Nina, B.M.  
 Henehan, Ruth Bamford, B.M.  
 Oliver, Louise D., B.M.

*Physical Education for Men*

Kunde, Norman, B.S.  
 Torney, Jack, B.S.

*Physical Education for Women*

Cundiff, Velda, B.S.  
 Duncan, Margaret M., B.S.  
 Lund, Nena, B.S.

*Psychology*

Hermans, Thomas G., B.S.

*Romantic Languages*

Wilson, Clotilde, M.A.

*Sociology*

Guthrie, Elton, B.A.  
 Rousseau, Imogene, B.A.

*Zoology*

Folda, Florence, M.S.  
 Werby, Helena, M.S.

## TEACHING FELLOWS FOR 1928-29

*Anatomy*

Snyder, James L., B.S.

*Botany*Phifer, Lyman D., B.S.  
Scheffer, T. C., M.S.  
Southard, Lloyd C., B.S.  
Zeeb, Kathryn, B.S.*Business Administration*Day, George, B.B.A.  
Eagleson, Margaret, M.A.  
Lewis, Russel, B.A.  
McKellar, Pierre A., B.A.  
Mund, Vernon, B.B.A.  
Schneider, Robert J., B.B.A.  
Wheeler, B. O., B.A.*Chemistry*Anderson, Lucile, B.S.  
Capps, Hubert Harold, B.S.  
Christianson, Bert E., B.S.  
Church, Anna Edsall, M.S.  
Damerell, Vivian Richard, M.S.  
Dulin, John S., B.A.  
Ford, Tiery Foster, B.S.  
Huffman, Eugene Harvey, B.A.  
McLain, Hubert Kenneth, B.S.  
Mitchell, Raymond L., B.S.  
Nesbitt, Lloyd L., B.S.  
Rice, Maude Ruth, M.S.  
Schimke, Harold S., B.S.  
Seymour, Keith M., B.S.  
Shinn, Helen R., B.S.  
Walker, Margery, B.S.  
Williams, Kenneth T., B.S.  
Wright, Calvert C., B.S.*English*Brooks, Leslie D. G., B.A.  
Burns, Harry, B.A.  
Christianson, Victor, M.A.  
Cooper, Isabel, B.A.  
Cornu, Elizabeth, B.A.  
Farquarson, Mary N., B.A.  
Ferrier, Gladys, B.A.  
Hansen, Bert B., B.A.  
Holcombe, Helen, B.A.  
Jaeger, Julius P., M.A.  
Kuhn, Bertha M., M.A.  
McLean, James B., B.A.  
Norrie, James L. Jr., B.A.  
Okerlund, Gerda, M.A.  
Rader, Kathryn, B.A.  
Ramsland, L. Clement, B.A.  
Robb, Marion, B.A.  
Stafford, John B., B.A.

Stirling, Brents, LL.B.

Williams, Weldon, B.A.

*Geology*Barquist, Isabel, B.S.  
Chappel, Walter M., B.A.  
Palmer, Dorothy K., M.A.*German*

Schertel, Max, B.A.

*Mathematics*Botsford, Laurence, B.A.  
Dahlberg, Edith, B.S.  
Fitch, A. L., B.A.  
Pennock, Dorothy, B.A.  
Spaeth, Aileen, B.S.*Nursing Education*

Adams, Henrietta, B.S.

*Pharmacy*Braford, Caty J., M.S.  
Fischer, Louis, M.S.  
Jorgensen, Paul S., B.S.  
Lehman, Arnold, M.S.  
Rising, Louis W., M.S.  
Tobey, Lono W., B.S.*Physics*Chapin, Daryl M., B.A.  
Jacobsen, Phillip A., B.S.  
Jordan, E. B., B.A.  
Larrick, Lewis, B.A.  
Lemery, Frances, B.A.  
Reinhart, Raymond E., B.A.*Political Science*Brown, Mary C., B.A.  
Cluck, J. R., B.A.  
Dilley, Marjorie, B.A.  
Warner, Kenneth O., M.A.*Psychology*Adams, Sydney, B.A.  
Gundlach, Alice, M.A.  
Stevenson, Harold, B.A.  
Walton, Albert, M.E.*Romanic Languages*Bayley, Nettie, B.A.  
Buckley, Nancy, B.A.  
Gish, Ira M., B.A.  
Giuntioni, Julius, B.A.  
Newberry, Amelia, B.A.  
Smith, Katherine Macrae, B.A.  
Terry, Helen, M.A.  
Van Gilder, Florence, B.A.  
Vargas, Anibal, B.A.  
Williams, Ruth, M.A.*Zoology*Hoverson, Julius, B.A.  
Wells, Marjorie, B.S.

## GRADUATE SCHOLARS FOR 1928-29

*Business Administration*

Draper, Dorothy E., B.B.A.

*English*

Burns, Harry, B.A.  
 Cappon, Mrs. Dorothy, B.A.  
 Nelson, Helen Claire, B.A.  
 Norie, James, Jr., B.A.  
 Ottenheimer, Albert, B.A.  
 Person, Henry, B.A.  
 Rosenstein, Sophie, B.A.  
 U'Renn, Dorothy, B.A.  
 Zillman, Laurence, B.A.

*History*

Pelligrini, Rosalia Leila, B.A.  
 Ryan, Florence I., B.A.  
 Tift, Lillian B., B.A.

*Journalism*

Frudenberg, Mildred, B.A.

*Oriental Studies*

Thole, Marjorie, B.A.

## APPOINTMENTS AND PROMOTIONS FOR 1929-1930

## APPOINTMENTS

Bishop, Eugene A.....*Professor of Education*  
 Carkeek, Vivian Morgan.....*Professor of Law*  
 Eliot, Thomas Dawes.....*Acting Professor of Sociology*  
 McCormack, Harvey William.....*Professor of Naval Science and Tactics*  
<sup>3</sup>Spier, Leslie.....*Professor of Anthropology; Director of the Museum*  
 Taylor, Edward Ayres.....*Professor of English*  
 Wilson, William R....*Professor of Psychology; Director of Personnel Work*  
 Moore, John Brooks.....*Associate Professor of English*  
 Cooper, James G.....*Assistant Professor of Military Science and Tactics*  
 Frazer, William D.....*Assistant Professor of Military Science and Tactics*  
 Hamlin, Arthur LeRoy.....*Assistant Professor of Naval Science and Tactics*  
 Kelley, Frank H.....*Assistant Professor of Naval Science and Tactics*  
 Milner, Fred C.....*Assistant Professor of Military Science and Tactics*  
 Quinby, Charles F. M. S....*Assistant Professor of Naval Science and Tactics*  
 Robinson, Rex J.....*Instructor in Analytical Chemistry*  
 Wilson, Florence Bergh.....*Instructor in Music*  
 Wintermute, Edwin H.....*Acting Instructor in Journalism*

<sup>3</sup> Absent on leave.

## PROMOTIONS

Grondal, Bror Leonard.....	<i>Professor of Forestry</i>
Isaacs, Walter F.....	<i>Professor of Fine Arts</i>
McMahon, Theresa Schmid.....	<i>Professor of Economics</i>
Mechem, Frank Lawrence.....	<i>Professor of Law</i>
Patzer, Otto.....	<i>Professor of French</i>
Smith, Harry Edwin.....	<i>Professor of Business Administration; Director of the Extension Service</i>
Thompson, Thomas Gordon.....	<i>Professor of Chemistry</i>
Ashley, Paul Pritchard.....	<i>Associate Professor of Business Administration</i>
Corey, Clarence Raymond.....	<i>Associate Professor of Mining Engineering and Metallurgy</i>
Dvorak, August.....	<i>Associate Professor of Education</i>
Goodrich, Forest Jackson.....	<i>Associate Professor of Pharmacy and Materia Medica</i>
Gowen, Lancelot.....	<i>Associate Professor of Architecture</i>
Helminger, Charles Louis.....	<i>Associate Professor of Romanic Languages</i>
Herrman, Arthur Philip.....	<i>Associate Professor of Architecture</i>
Langford, Cooper Harold.....	<i>Associate Professor of Philosophy</i>
Schaller, Gilbert Simon.....	<i>Associate Professor of Shop Engineering</i>
Shuck, Gordon Russell.....	<i>Associate Professor of Electrical Engineering</i>
Small, George William.....	<i>Associate Professor of English</i>
Warner, Frank Melville.....	<i>Associate Professor of Engineering Drawing</i>
Miller, Alfred Lawrence.....	<i>Associate Professor of Civil Engineering</i>
Christian, Byron Hunter.....	<i>Assistant Professor of Journalism</i>
Crawford, Margaret.....	<i>Assistant Professor of Dramatic Art</i>
Dahlin, Ebba.....	<i>Assistant Professor of History</i>
Eastman, Austin Vitruvius.....	<i>Assistant Professor of Electrical Engineering</i>
Farwell, Raymond Forrest.....	<i>Assistant Professor of Business Administration</i>
Foote, Hope Lucille.....	<i>Assistant Professor of Interior Design</i>
Jarvis, Norman Donald.....	<i>Assistant Professor of Fisheries</i>
Jerbert, Arthur Rudolph.....	<i>Assistant Professor of Mathematics</i>
Lindblom, Roy Eric.....	<i>Assistant Professor of Electrical Engineering</i>
Quainton, Cecil Eden.....	<i>Assistant Professor of History</i>
Whittlesey, Walter Bell.....	<i>Assistant Professor of French</i>
Burns, Nina.....	<i>Instructor in Music</i>
Byers, Maryhelen.....	<i>Instructor in Painting</i>
Grant, Ruth.....	<i>Instructor in Business Administration</i>
Jacobs, Melville.....	<i>Instructor in Anthropology</i>
Pennington, Ruth.....	<i>Instructor in Painting</i>
Hermans, Thomas G.....	<i>Associate in Psychology</i>
Wilson, Clotilde.....	<i>Associate in Romanic Languages</i>

## ALPHABETICAL LIST OF THE UNIVERSITY FACULTY 1929-30

- 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.
- 
- 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, Samuel Herbert.....*Associate Professor of Physics*  
B.A., Park College, 1902; M.A., 1903; Ph.D., Illinois, 1912.
- Ankele, Felicie Charlotte.....*Associate in Germanic Languages*  
B.A., Washington, 1925; M.A., 1926.
- Arbuthnot, James George.....*Associate Professor of Physical Education for Men*  
B.S., Kansas State College, 1904.
- 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, 1926.
- Ayer, Leslie James.....*Professor of Law*  
B.S., Upper Iowa, 1899; J.D., Chicago, 1906.
- Bagshaw, Enoch.....*Associate in Physical Education for Men*  
B.S. (Met.E.), Washington, 1908.
- Ballaine, Genevieve Knight.....*Associate in Latin*  
B.A., Olivet College, 1897.
- Ballantine, John Perry.....*Assistant Professor of Mathematics*  
B.A., Harvard, 1918; Ph.D., Chicago, 1923.
- Bauer, Hubert A.....*Associate in Geology*  
Graduate, Greifswald, Germany, 1921; M.S., Washington, 1928.
- Beardsley, Arthur Sydney.....*Law Librarian and Lecturer in Law*  
LL.B., Washington, 1918; B.S., 1924; M.A., 1925; Ph.D., 1928.
- 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.
- 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.
- Blake, Ralph Mason.....*Professor of Philosophy*  
B.A., Williams College, 1911; M.A., Harvard, 1912; Ph.D., 1915.
- Blanchard, Fred.....*Associate in Dramatic Art*  
B.A., Washington, 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.
- Boxall, Edith A.....*Associate in Latin*  
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.
- Buchanan, Iva.....*Associate in History*  
B.A., Washington, 1907; M.A., 1920.
- Buck, Helen Marian.....*Instructor in Design*  
California (Southern Branch).
- Burd, Henry Alfred, *Professor of Business Administration; Director of the  
Summer Quarter*  
B.S., Illinois Wesleyan, 1910; M.A., Illinois, 1911; Ph.D., 1915.
- Burns, Nina.....*Instructor in Music*  
B.M., Washington, 1926.
- Byers, Maryhelen.....*Instructor in Painting*  
B.F.A., Washington, 1923; M.A., Columbia, 1924.
- 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.
- Cederstrom, Moyle F.....*Associate in English*  
B.A., Minnesota, 1923; M.A., 1927.
- 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.
- Cobb, John Nathan.....*Professor of Fisheries; Dean of the College of Fisheries*
- Cole, Kenneth Carey.....*Assistant Professor of Political Science*  
B.Lit., St. John's College, Oxford, 1924.
- Collier, Ira Leonard.....*Assistant Professor of Civil Engineering*  
B.S. (C.E.), Washington, 1913; C.E., 1917.
- Conway, John Ashby.....*Associate in Dramatic Art*  
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.....*Associate in Education*  
B.A., Whitworth, 1918; M.A., Washington, 1926.
- Corey, Clarence Raymond, *Associate Professor of Mining Engineering and Metallurgy*  
B.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.
- Cox, Edward Godfrey.....*Professor of English*  
B.A., Wabash, 1899; M.A., Cornell, 1901; Ph.D., 1906.
- Cox, William Edward.....*Professor of Business Administration; Dean of the College of Business Administration*  
B.A., Texas, 1909; M.A., 1910.
- Cramlet, Clyde Myron.....*Assistant Professor in Mathematics*  
B.A., Walla Walla College, 1915; M.S., Washington, 1920; Ph.D., 1926.
- Crawford, Donald Russell.....*Assistant Professor of Fisheries*  
B.S., Washington, 1922; M.S., 1926.
- Crawford, Margaret.....*Assistant Professor of Dramatic Art*  
B.S., Columbia, 1921; M.A., 1922.
- 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.
- 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 Romanic Languages*  
M.A., Wisconsin, 1911; Ph.D., 1913.
- De Vries, Mary Aid.....*Assistant Professor of Physical Education*  
B.A., Wisconsin, 1920.
- Dobie, Edith.....*Instructor in History*  
B.A., Syracuse, 1914; M.A., Chicago, 1922; Ph.D., Stanford, 1925.
- Draper, Edgar Marion.....*Assistant Professor of Education*  
B.A., Washington, 1916; M.A., 1925; Ph.D., 1927.
- Draper, Oscar Eldridge.....*Lecturer on 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.
- Eastwood, Everett Owen.....*Professor of Mechanical Engineering*  
C.E., Virginia, 1896; B.A., 1897; M.A., 1899; S.B., Massachusetts Institute of Technology, 1902.
- Eby, Edwin Harold.....*Instructor in 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, 1900.
- 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*  
B.S., Idaho, 1910.
- Eliot, Thomas Dawes.....*Acting Professor of Sociology*  
B.A., Washington University, 1910; M.A., Pennsylvania, 1912; Ph.D., Columbia, 1914.
- Esper, Erwin Allen.....*Associate Professor of Psychology*  
B.A., Ohio State, 1917; M.A., 1920; Ph.D., 1923.
- Ethel, Garland Oral.....*Instructor in English*  
B.A., Washington, 1923; M.A., 1927; Ph.D., 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.

- Foisie, Frank P.....*Lecturer in Business Administration*  
B.S., Harvard, 1912.
- 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.....*Associate in Education*  
B.Ed., Washington, 1921; M.A., 1923.
- Foster, Henry Melville.....*Assistant 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, 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.
- Garcia-Prada, Carlos.....*Assistant Professor of Spanish*  
B.A., Colegio del Rosario, 1918; M.A., Michigan, 1924.
- Gavett, George Irving.....*Associate Professor of Mathematics*  
B.S. (C.E.), Michigan, 1893.
- George, William Henry.....*Professor of Political Science*  
B.A., Harvard, 1902; M.A., Princeton, 1906; Ph.D., Harvard, 1921.
- 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*  
Graduate, Central School of Hygiene and Physical Education, New York, 1923.
- 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 Geology*  
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*  
Missouri.
- Graves, L. Wallis.....*Instructor in Business Administration*  
B.B.A., Washington, 1922; M.A., California, 1923.
- 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*  
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 Germanic Languages*  
B.A., Wartburg College, 1912; M.A., Washington, 1926; Ph.D., Columbia, 1928.
- Guberlet, John Earl.....*Associate Professor of Zoology*  
B.A., Bethany, 1909; M.A., Illinois, 1911; Ph.D., 1914.
- Gundlach, Ralph.....*Instructor in Psychology*  
B.A., Washington, 1924; M.A., Washington, 1925; Ph.D., Illinois, 1927.
- Gunn, Elizabeth.....*Assistant Physician and 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.
- 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.
- Hamack, Frank Hartmond.....*Associate in Business Administration*  
LL.B., Georgetown, 1916.
- Hamilton, James Baker.....*Assistant Professor of Civil Engineering*  
B.S. (C.E.), Washington, 1924; C.E., 1927.
- 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.....*Associate in Sociology*  
B.A., Radcliffe, 1910; M.A., Chicago, 1927.
- Hauan, Merlin James.....*Lecturer in Civil Engineering*  
B.S. (E.E.), Washington, 1925.
- Hawthorn, George Edward....*Assistant Professor of General Engineering*  
B.S. (C.E.), Washington, 1915; C.E., 1926.
- Hayner, Norman Sylvester.....*Assistant Professor of Sociology*  
B.A., Washington, 1920; M.A., Chicago, 1921; Ph.D., 1923.
- Helmich, Leone.....*Associate in Physical Education for Women*  
B.S., Washington, 1922.
- Helmlinge, Charles Louis.....*Associate Professor of Romanic Languages*  
B.Ph., Wallace College (Ohio), 1911; M.A., Washington, 1915.
- 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.
- Hildebrand, Christian, First Lieutenant, Infantry.....*Assistant Professor of  
Military Science and Tactics*  
Graduate, U.S. Military Academy, 1919; Basic Course, Infantry School, 1920.
- 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.
- Hulse, Granvyl G.....*Instructor in Political Science*  
B.A., California, 1925; M.A., Harvard, 1926.
- Ingram, Wyatt H.....*Instructor in Mathematics*  
B.S., Chicago, 1917; M.S., Massachusetts Institute of Technology, 1923.
- Isaacs, Walter F.....*Professor of Fine Arts*  
B.S. (F.A.), James Millikin, 1900; 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 Siegmundt.....*Assistant Professor of Astronomy and  
Mathematics*  
B.A., Stanford, 1922; Ph.D., California, 1926.
- Jarvis, Norman Donald.....*Assistant Professor of Fisheries*  
B.S., Washington, 1924; M.S., 1926.
- Jerbert, Arthur Rudolph.....*Assistant Professor of Mathematics*  
B.S., Washington, 1916; M.S., 1923; Ph.D., 1923.

- 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, 1900; LL.B., 1913; M.A., South Dakota, 1918.
- 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*
- 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.
- 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, J. W.....*Associate 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.
- Langford, Cooper Harold.....*Associate Professor of Philosophy*  
B.A., Clark, 1919; Ph.D., Harvard, 1924.
- Lantz, Harvey.....*Professor of Law*  
Ph.B., DePauw, 1888; M.A., 1891; LL.B., Kent Law School, 1893.
- Lawrence, Charles Wilson.....*Assistant Professor of Music*  
B.Mus., Oberlin, 1918.
- Lawson, Jane Sorrie.....*Associate in English*  
M.A., St. Andrews (Scotland), 1906.
- Leahy, Kathleen M.....*Associate in Nursing Education*  
B.A., Oregon, 1926.
- Lehman, Harriet Snidow.....*Instructor in Pharmacy*  
Ph.G., B.S., Oregon State College, 1923; M.S., Washington, 1925;
- Leib, Karl Elias.....*Professor of Business Administration*  
B.A., Stanford, 1916; J.D., 1923.
- Lindblom, Roy Eric.....*Assistant Professor of Electrical Engineering*  
B.S. (E.E.), Washington, 1922.

- Loew, Edgar Allen.....*Professor of Electrical Engineering*  
B.S. (E.E.), Wisconsin, 1906; E.E., 1922.
- Lucas, Henry Stephen.....*Associate Professor of History*  
B.A., Olivet, 1913; M.A., Indiana, 1915; Ph.D., Michigan, 1921.
- Luce, Dean, First Lieutenant, C.A.C.....*Assistant Professor of Military Science and Tactics*  
Graduate, U.S. Military Academy, 1918.
- Lynch, Clara Belle.....*Associate in Music*
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B.A., Washington, 1909; M.A., Wisconsin, 1910; Ph.D., 1918.
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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.
- 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*  
B.S., Columbia, 1915; M.A., 1923.
- McIntyre, Harry John.....*Assistant Professor of Mechanical Engineering*  
B.S. (M.E.), Washington, 1915; M.B.A., 1923.
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B.Mus., Rochester, 1923.
- 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*  
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B.S., Oregon Agricultural College, 1918; M.S. (M.E.), Washington, 1926.
- Mabon, Laura Edna.....*Associate in Music*  
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- Magnusson, Carl Edward.....*Professor of Electrical Engineering*  
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- Martin, Charles Emanuel.....*Professor of Political Science*  
B.L., California, 1914; M.A., 1915; Ph.D., Columbia, 1917.
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B.S., Columbia, 1926.
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LL.B., Washington University, 1888.
- May, Charles Culbertson.....*Associate Professor of Civil Engineering and Architecture*  
B.S. (C.E.), Washington, 1910.
- 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*  
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B.S., Wisconsin, 1893; Ph.D., 1904.
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B.S. (C.E.), Washington, 1920; C.E., 1926.
- Miller, Charles John.....*Instructor in Business Administration*  
B.B.A., Washington 1922; M.B.A., 1927.
- Miller, John William.....*Assistant Professor of Civil Engineering*  
B.S. (C.E.), Nebraska, 1905; C.E., 1928.
- Miller, Robert Cunningham.....*Assistant Professor of Zoology*  
B.A., Greenville, 1920; M.A., California, 1921; Ph.D., 1923.
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B.A., Michigan, 1890.
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C.E., Lafayette, 1898; M.C.E., Cornell, 1899; M.S., Lafayette, 1901.
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B.S., Massachusetts Institute of Technology, 1921.
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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.
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B.S., Colorado, 1898; M.S., 1901; Ph.D., Pennsylvania, 1903.

- Newbury, Kirsten Larssen.....*Instructor in Physics*  
B.S., Washington, 1919; M.S., 1924; Ph.D., Minnesota, 1928.
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Graduate, Iowa State Teachers' College, 1901; B.S., Columbia, 1912; M.A., 1913.
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B.A., Washington, 1922; M.A., 1925.
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B.A., Montana State College, 1919; Ph.D., Columbia, 1924.
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B.A., Monmouth College, 1912; M.A., Illinois, 1918; LL.B., Yale, 1922.
- Ober, Caroline Haven.....*Professor Emeritus of Spanish*
- O'Bryan, Joseph Grattan.....*Professor of Law*  
B.A., Jesuit College (Denver), 1893.
- Orr, Frederick Wesley.....*Professor of English*  
B.L., Drury College, 1901; G.C.D., Boston School of Expression, 1905;  
M.A., Lawrence College, 1925.
- Osborn, Frederick Arthur.....*Professor of Physics*  
Ph.B., Michigan, 1896; Ph.D., 1907.
- Padelford, Frederick Morgan.....*Professor of English; Dean of the  
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B.A., Colby, 1896; M.A., 1899; Ph.D., Yale, 1899.
- Parks, Clarence Thomas.....*Assistant Professor of Fisheries*  
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B.A., Harvard, 1893; M.A., Emporia, 1895.
- Patterson, Ambrose.....*Assistant Professor of Painting*  
Melbourne National Gallery, Victoria, Australia; Julien, Colorossi and Delocluse  
Academies, Europe.
- Patzner, Otto.....*Professor of French*  
B.L., Wisconsin, 1898; M.L., 1899; Ph.D., 1907.
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- Powers, Francis Fountain.....*Instructor in Education*  
B.A., Washington, 1922; M.A., Oregon, 1927; Ph.D., Washington, 1928.
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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;  
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B.A., California, 1920; M.Arch., Pennsylvania, 1921.
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M.A., McGill, 1895.
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B.A., Willamette, 1920; M.A., Iowa, 1927.
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B.A., DePauw, 1923; M.A., 1924; Ph.D., Michigan, 1926.
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National Academy of Design; Columbia; B.A., Washington, 1927.
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B.A., Yale, 1889; M.A., Ph.D., Heidelberg, 1897.
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B.A., Stanford, 1899.
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C.P.A.
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B.S. (Nav. Arch. and Marine Engr.), Massachusetts Institute of Technology, 1926.

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B.S., Linfield College, 1923.
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E.E., Minnesota, 1906.
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B.S. (C.E.), Washington, 1926.
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B.S., Vanderbilt, 1900; Ph.D., Freiburg, 1903.
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B.S. (E.E.), Washington, 1916; E.E., 1924.
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B.A., Pennsylvania, 1904; Ph.D., 1909.

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B.S. (P.Ed.), Syracuse, 1923.
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B.A., Indiana University, 1903; Ph.M., Chicago, 1908.
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B.S., College City of New York, 1915; Ph. D., Columbia, 1920.
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B.S. (H.E.), Iowa State College, 1923; M.S., Columbia, 1927.
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- Stone, Edward Noble.....*Associate Professor of Classical Languages*  
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- Sutton, Wayne Campbell.....*Associate in Physical Education for Men*  
B.A., Washington, 1915.
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B.S., Oregon Agricultural College, 1902; Ph.D., Chicago, 1920.
- Taylor, Edward Ayres.....*Professor of English*  
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B.S., State Agricultural College of Colorado, 1894.
- Thompson, Thomas Gordon.....*Professor of Chemistry*  
B.A., Clark, 1914; M.S., Washington, 1915; Ph.D., 1918.
- Thomson, David.....*Professor of Latin; Dean of the College of Liberal Arts; Dean of Faculties*  
B.A., Toronto, 1892.
- Truax, Arthur.....*Lecturer in Business Administration*
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B.A., Northwestern, 1911; Ph.D., Chicago, 1921.
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B.B.A., Washington, 1927.
- Umphey, George Wallace.....*Professor of Romanic Languages*  
B.A., Toronto, 1890; M.A., Harvard, 1901; Ph.D., 1905.
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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.
- Venino, Luella.....*Associate in Music*  
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.
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B.S., Cornell College, Iowa, 1902; M.D., Sioux City College of Medicine, 1905.
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B.T., Union Theological College, 1921; Ph.B., Chicago, 1923; M.A., 1924.
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B.S. (M.E.), Wisconsin, 1907.
- Weaver, Charles Edwin.....*Professor of Paleontology*  
B.S., California, 1904; Ph.D., 1907.
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- Weir, John.....*Instructor in Engineering*  
B.S. (E.E.), Washington, 1925.
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B.A., Washington, 1907; M.A., 1909.
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- Wilson, Francis G.....*Assistant Professor of Political Science*  
B.A., Texas, 1923; M.A., 1924; Ph.D., 1928.
- Wilson, George Samuel.....*Professor of Mechanical Engineering*  
B.S., Nebraska, 1906.
- Wilson, Hewitt.....*Professor of Ceramics*  
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- Wilson, William Charles Eade.....*Instructor in Spanish*  
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- Wilson, William R. . . . . *Professor of Psychology; Director of Personnel Work*  
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B.A., Oregon, 1918; M.A., 1919; Ph.D., Washington, 1926.
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B.A., Yale, 1898; S.T.B., Chicago, 1901; M.A., Harvard, 1902; Ph.D., Columbia, 1909.
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M.D., Birmingham School of Medicine, Alabama, 1900.
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B.A., Wellesley, 1911.
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Pratt Institute.
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 Crim, Lemuel P.....*Captain, Ordnance*  
 Priest, Harold R.....*Captain, Infantry*  
 Cooper, James G., Jr.....*First Lieutenant, Infantry*  
 Luce, Dean.....*First Lieutenant, C.A.C.*  
 Hildebrand, Christian.....*First Lieutenant, Infantry*  
 Young, Courtney P.....*First Lieutenant, C.A.C.*  
 Moller, Otto.....*Warrant Officer, U.S.A.*

Lang, Walter.....	<i>Master Sergeant, U.S.A., Retd.</i>
Compton, William F.....	<i>Staff Sergeant, D.E.M.L.</i>
Bailey, Ray A.....	<i>Staff Sergeant, D.E.M.L.</i>
Hogwood, Joseph L.....	<i>Sergeant, D.E.M.L.</i>
Collins, Floyd.....	<i>Sergeant, D.E.M.L.</i>
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Condon, Herbert T., LL.B.....	<i>Comptroller</i>
Wilson, Aimee.....	<i>Secretary to the Comptroller</i>
Butterbaugh, Grant, M.B.A.....	<i>Auditor</i>
Stuart, Charles K., LL.B.....	<i>Cashier</i>
Hipkoe, Max.....	<i>Assistant Purchasing Agent</i>
Elwell, Frederick.....	<i>Superintendent of Buildings and Grounds</i>

#### OFFICE OF THE REGISTRAR

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

## THE MUSEUM

<sup>2</sup> Spier, Leslie, Ph.D.....	<i>Director of the Museum</i>
Rathbun, Samuel F.....	<i>Honorary Curator of Birds</i>

## ENGINEERING EXPERIMENT STATION

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

## PUGET SOUND BIOLOGICAL STATION

Frye, Theodore Christian, Ph.D.....	<i>Director</i>
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## STATE CHEMIST

<sup>3</sup> Johnson, Charles Willis, Ph.C., Ph.D.....	<i>Director</i>
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## NORTHWEST EXPERIMENT STATION, UNITED STATES

## BUREAU OF MINES

Yancy, Harry Fagan, Ph.D.....	<i>Acting Supervising Engineer</i>
Johnson, Kenneth Alexander, B.S.....	<i>Junior Chemist</i>
Ash, Simon Harry, B.S.....	<i>Associate Engineer</i>
Read, Clifford W., M.S.....	<i>Draftsman</i>
Schoning, John G.....	<i>Foreman Miner, Mine Safety Station</i>
Keating, Henry T.....	<i>Principal Clerk</i>
Towle, Harriett E.....	<i>Clerk</i>
Lance, William E.....	<i>Mill Mechanic</i>

## UNIVERSITY HEALTH SERVICE

Hall, David Connolly, M.D.....	<i>University Health Officer</i>
Markey, J. J., M.D.....	<i>Assistant</i>
Gunn, Elizabeth, M.D.....	<i>Assistant</i>
Reeder, Maude, R.N.....	<i>Superintendent, Infirmary</i>

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<sup>2</sup> Absent on leave.

## BOARDS AND COMMITTEES

1929-1930

### ADMINISTRATIVE BOARDS

- Admissions*.....The Board of College Deans  
*Board of Deans*—Thomson, Burd, Cobb, Cox, Glen, Haggett, Henry, Johnson, Landes, Magnusson, V. McKenzie, Padelford, Roberts, Schweppe, Stevens, Uhl, Winkenwerder.  
*Buildings*.....Thomson, Elwell, May, Stevens, Thomas, Wilcox  
*Schedule and Registration*—Stevens, Butterbaugh, Carpenter, Gregory, Newenham, Sidey, G. S. Wilson.  
*Student Discipline*—Lantz, Guthrie, R. D. McKenzie, Nottelmann, T. G. Thompson.  
*Summer Quarter*.....Burd, Condon, Landes, Padelford, Thomson, Uhl

### COMMITTEES OF THE FACULTY

- Art*.....Isaacs, Herrman, Rhodes  
*Athletics*.....O'Bryan, O. E. Draper, Griffith, McIntyre, Winger  
*Curriculum*, Chairmen of the Curriculum Committees of each College, together with a Representative from each Faculty Having no Curriculum Committee  
*Educational Research*, Tartar, Densmore, Ethel, Quainton, Renner, Uhl, Wilcox  
*Graduation*.....Preston, Cornu, Goodspeed, Hoard, Isaacs, Stevens  
*Honors*.....Carpenter, Dahlin, Fawcett, Hawthorne, Read, C. P. Wood  
*Library*—C. W. Smith, Benham, George, Guberlet, Padelford, Patzer, Powell, Thomson.  
*Public Exercises*.....Daniels, Conway, D. C. Hall, Lawrence  
*Relations with Secondary Schools and Colleges*—Bolton, Creer, Frein, Jessup, Sperlin, Stevens, Utterback, Uhl, Warner.  
*Rhodes Scholarships*.....Densmore, Harrison, Quainton, Small  
*Rules*.....Goodner, Meisnest, Stevens, Wm. Taylor, Ward  
*Student Affairs*—Dakan, Christian, E. M. Draper, Farquharson, Gross, Gundlach, Haggett, Wm. Taylor, F. G. Wilson.  
*Student Publications*.....V. McKenzie, Ayer, Campbell, Osborn  
*Student Welfare and Loans*—Gould, Bash, Condon, Fawcett, D. C. Hall, Leib, Raitt.

## 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 will yield 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, However*, for the following uses and purposes to be invested in securities to be approved by said Board and the interest therefrom to be expended in the maintenance of" (scholarship or fellowship fund named).

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

## EQUIPMENT

### GROUND

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 west 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 northwest section of the campus is reserved for men's dormitories.

Between these two proposed groups Memorial Way enters from the north as the continuation of University Boulevard.

Since the adoption of the group plan twelve buildings have been erected on the Liberal Arts Quadrangle. Locations for three 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 the past year and was occupied first at the opening of the autumn quarter. 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, Commerce Hall, Denny Hall, Dormitories, (Lewis and Clark); Education Hall, Engineering Hall, Fisheries Buildings, Forest Products Laboratory (Dry Kiln, Wood Preserving Plant, Dry Shed), Foundry and Shop Building, Good Roads Building, 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, United States Bureau of Mines, United States Mine Safety Station.

## LIBRARY FACILITIES

The general library is housed in a beautiful new building containing comfortable and adequate provision for readers. The book collection has been built to meet the needs of students in all lines of undergraduate instruction. A stock of the more fundamental publications needed for advanced research is quite rapidly accumulating and special collections are being formed in a few limited fields. The number of bound volumes is 197,149.

The library of the Law School contains 53,563 volumes. Both libraries are freely accessible to all who care to use them.

In addition to the libraries on the campus, the Seattle Public Library, containing 422,599 volumes, is open to the University.

## MUSEUM

The museum of the University of Washington is a museum of the arts and natural sciences. It was created the State Museum of the State of Washington by act of the legislature in 1899. In its functions as a state, a university and a public museum, it aims to make its collections representative of the natural history, mineral resources, ethnology, history, and chief industrial activities of this region and of those countries with which this state has a commercial relationship; to furnish materials for research and study; and to interest and educate the public by its exhibitions. Its collections, illustrative of the northwest coast, are among the most complete and valuable in the United States.

The museum, which was formerly housed in the old Forestry Building of the Alaska-Yukon-Pacific Exposition, has been transferred to the building previously occupied by the University Library. The collections, which have not been available to the public since May 26, 1923, are entirely re-arranged and amplified and were opened to the public August 6, 1928. There are approximately 125,000 specimens in the museum collections with an estimated value of \$300,000.

The main entrance hall on the first floor is devoted to ethnological material of the State of Washington. Adjoining this hall are rooms devoted to collections of minerals, paleontological material, and marine fauna, which is represented by a series of mounted fishes of the northwest coast, corals, sponges, starfish, shells, crustacea, etc. On the north side of the main hall one room contains a systematic series of local birds. The mammal hall contains habitat groups of mountain goat, bear, deer, elk, wolf, etc., adjoining which is a room containing small habitat groups of local birds, and a room with a display of insects.

*Ethnology*—Beginning on the right in the main hall the collections, illustrative of the life, arts and industries of the Indians, start with the Coast Salish tribes and continue through the northwest coast and British Columbia in geographical sequence into the annex, where the Alaskan Indian and Eskimo collections are displayed. There is also a choice collection of articles from the Copper Eskimo of Coronation Gulf, Northwest Territories, Canada; and from the Eskimo and Chukchee of the Siberian coast. The rest of the main hall is devoted to the archaeology of eastern Washington and the Sahaptin tribes of the Columbia river region, with material illustrating the culture of the Interior Salish.

On the second floor will be found articles from the aborigines of the Philippine Islands, Oceania and Australia; as well as a collection of ancient firearms, relics of the World War, and historical materials representing pioneer days in the Pacific Northwest and elsewhere.

*Fine Arts*—The fine arts section is installed in a series of rooms on the north side of the second floor. This includes porcelains, embroideries, paint-



ings and other art objects from China; a fine collection of Buddhas from northern China and Siam; and European textiles, porcelains, engravings and sculpture. One room is devoted to Scandinavian handicrafts, and another to a collection of early American objects which includes among other things a replica of a "Colonial" room.

*Reserve or Study Series*—The museum has in its laboratories, for purposes of study and research, collections of botanical, conchological, ornithological, and ethnological specimens which are available to specialists or students competent to use them; and a museum library, consisting of over a thousand books and pamphlets on scientific subjects.

The herbarium of over 35,000 specimens contains a characteristic series of northwest flora, including the Piper and Henderson collections; and the Frye collection of mosses of this region and Alaska, which is one of the most complete in the United States.

The collection of bird skins, eggs and nests consists of more than 5,000 specimens particularly representative of Washington.

The conchological collection of over 18,000 specimens contains a complete series of west coast forms and a large series from all parts of the world.

#### 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 present aerodynamical laboratories contain one 4 ft. by 4 ft. wind tunnel with complete equipment of automatic balances for experiments with air foils and propellers, and one 2 ft. diameter cylindrical wind tunnel for qualitative investigation of air flow phenomena. The new building will be equipped with several small tunnels particularly adapted to student use. A machine shop in the laboratory facilitates the materialization of new ideas in the line of aeronautical investigation and research. The wind tunnel has been a source of valuable information to the local airplane industry.

*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 pharm-

aceutical 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 on the shore of 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 at an elevation of 100 feet above the laboratory floor. 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 materials testing laboratory contains five universal testing machines with capacities from 30,000 to 300,000 pounds, two impact machines with various hammers ranging in weight from 550 to 1,500 pounds, with the necessary auxiliary apparatus for general work.

The equipment for testing hydraulic cement is complete for all the ordinary tests as specified by the American Society for Testing Materials.

The road 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 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. Power from a storage battery of 60 cells is available at a separate switchboard 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 devoted to the following: (a) Instrument making and repairing, (b) grinding room and shop (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. (Tirrell) 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 and crucible melting furnaces together with five types of molding machines and sand conditioning and casting cleaning equipment. Equipment is also available for pattern making and flask repair. The forge division contains, in addition to the regular forging equipment, three 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; 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, and dark rooms for studying effects of various colored lights on the animals.

*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.

*Canning Laboratory*—The canning laboratory is equipped with all machinery and appliances necessary for preparation and canning of all varieties of food products, in either glass or tin containers, including paring and slicing machinery, preparation table, exhaust box, closing machines and retorts. Here instruction is given in the usual commercial methods, while research is carried on in the development of new methods or the modification of the old to meet new conditions.

*Curing and Drying Laboratory*—The curing laboratory contains the necessary equipment for making pickling solutions and brines, and for the drying, pickling, mild-curing and smoking of the various food products.

*Refrigeration Laboratory*—Ultimately a small refrigeration and cold storage plant will be installed for economic study of various methods of freezing and preserving food products in cold storage.

*Testing Laboratory*—The testing room has a constant temperature of approximately 98° Fahrenheit, and in it samples of canned fishery products can be incubated, by means of which swells may be separated from the other cans and the sufficiency of the process used in the cannery determined. Various vacuum gauges and can testers are also available.

*Research Laboratory*—The research laboratory contains the necessary chemical and bacteriological apparatus for investigation of problems of the food preserving industry. Laboratory desks are equipped with water, gas and electricity, and with balances, microscopes, apparatus for microphotography, pressure cookers and hand closing machines. The equipment in-

cludes sterilizers, incubator, vacuum drying ovens, hot-plates, and the necessary glassware.

*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.

*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

*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 Dorr bowl-classifier, a Dorr thickener, an Akins classifier, a Fahrenwald, a Bird, and several Richards classifiers are in service, and four jigs. The concentrating tables include a Wilfley sand-table and a Deister-Overstrom slimer of full size, a Plato of half size, and three smaller Wilfleys.

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

*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.

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 optimum fixtures donated by Stewart and Holmes Drug Company, arranged and equipped as a sales room. The prescription room contains displays of pharmaceuticals from many of the leading pharmaceutical houses.

#### PHYSICS LABORATORIES

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

#### UNITED STATES BUREAU OF MINES NORTHWEST EXPERIMENT STATION

The Department of Commerce maintains at the College of Mines its Northwest Experiment Station, which serves the Pacific Northwest and the coast regions of Alaska. The headquarters of the station, from which all operations in this territory are directed, are in Mines Laboratory. At present the principal investigations being conducted by the station are in the treatment and uses of coal and of other non-metallic substances. 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 cartrack, 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.

*Instruction for Coal Mining Men*—Miners taking the rescue training also receive instruction in the College of Mines on the subjects of mine gases, explosions, and the origin and distribution of Pacific Coast and Alaska coals. Laboratory experiments are carried on to show the methods of analyzing coals and determining the uses to which they can be put. The methods of testing for permissible explosives at the Pittsburgh station and the safe methods of charging, tamping, and firing are explained. Coal men interested in the washing of coals are given full practice with the several types of apparatus used for this purpose.

#### 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 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.

The control of the Engineering Experiment Station is vested in an administrative staff consisting of the president of the University, the dean of the College of Engineering, 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 five departments: aeronautical, chemical, civil, electrical and mechanical 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, music and drawing, and dramatic art, 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 Fisheries* lays a scientific foundation for work connected with the fisheries industry, one of the chief resources of the Pacific Coast. Bachelor of science in fisheries is the degree offered.

6. *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.

7. *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.

8. *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.

9. *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.

10. *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.

11. *The College of Pharmacy* offers three-year and four-year courses, the first giving preparation in technical and commercial pharmacy, and the second providing a well-rounded scientific training in this field. The three-year course leads to the degree of pharmaceutical chemist, and the four-year course 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, 1929, 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, one-half unit of shop work, 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.

**FISHERIES:** No specific requirements.

**FORESTRY:** Advanced algebra, one unit of plane geometry.

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

**PHARMACY:** No specific requirements.

A student is advised not to attempt to enter the University until he is able to register in his chosen college without deficiencies. Under certain circumstances and with the approval of the dean of the college concerned,

\*A "unit" is applied to work taken in 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.

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 the subjects in which recommending grades are not received.

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.

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

Secondary schools mentioned in the 1926-27 catalogue as accredited may use their accreditation privileges for their graduates of June 1928. The University of Washington will in the future depend 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 other secondary schools outside of Washington will be admitted on the same terms as graduates of accredited schools of Washington, provided the school in question is fully accredited (1) by the North Central Association of Schools and Colleges, (2) by the New England College Entrance Certificate Board, or (3) by a leading university whose standards of admission are practically the same as those of the University of Washington. The University of Washington reserves the right to require examinations of graduates of such schools in all cases where it seems advisable to do so.

#### 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, provided their scholarship meets the standards required of resident students of the University of Washington. No advance credit will be given for work done in institutions whose standing is unknown, except upon examination. Definite advanced standing will not be given until the student has been in residence at least one quarter.

*Students Transferring from Colleges Having a Lower Standard of Admission Than the University of Washington*—A student applying to trans-

fer 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.

*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 bulletin.

#### ADMISSION BY EXAMINATION

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

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

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 the subjects in which they are low.

(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

The examinations of the College Entrance Examination Board are conducted annually in various cities and towns of the United States and abroad. The examinations are usually held during the third week in June; in 1929, June 17-22, 1930, June 16-21.

On the Pacific Coast examinations are usually held at Seattle, Spokane, Tacoma, Portland, Berkeley, Los Angeles, and San Francisco.

Blank forms for the "Application for Examination" and the "Teacher's Recommendation" may be obtained from the Secretary of the College Entrance Examination Board upon request by mail. The application should be returned to the College Entrance Examination Board, 431 West 117th St., New York City. The recommendation should be sent directly to the Committee on Admission of the college concerned.

If the application be received sufficiently early, the examination fee will be \$10. for each candidate. The fee, which should accompany the application, should be remitted by postal order, express order or draft on New York to the order of the College Entrance Examination Board.

Application and fees of candidates who wish to be examined west of the Mississippi in the United States or in Canada should reach the Secretary of the Board at least four weeks in advance of the first day of the examinations, that is, on or before May 20, 1929, or May 19, 1930. Applications and fees of candidates who wish to be examined in the United States at points east of the Mississippi River or on the Mississippi River should be received at least three weeks in advance of the first day of the examinations, that is, on or before Monday, May 27, 1929, or May 26, 1930.

When a candidate has failed to obtain the required blank form of application for examination, the usual examination fee will be accepted if the fee arrives not later than the specified date accompanied by a memorandum containing the name and address of the candidate, the exact examination center selected, and a list of all the examinations in which he plans to take Board examinations.

Applications for examinations will be accepted later than the dates named, if in the opinion of the Secretary it is still possible to arrange for the examinations requested, but only upon the payment of an additional fee of \$5. by each candidate concerned.

A list of places at which examinations are to be held is published annually about March 1. Requests that the examinations be held at particular points should be transmitted to the Secretary of the College En-

trance Examination Board not later than February. The designation of the center to which the candidate will go for examination is an indispensable part of his application for examination.

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

#### 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.

#### ORIENTATION COURSE

*Introduction to College Study.* Section 1—A special orientation course is offered for non-English speaking students who are found to need special training before continuing with a full student load in the University. To a great extent those who are to enroll in this course are chosen on the basis of the results of the entrance examinations required by the registrar. The course, however, is open to all students who feel the need of special training.

The course includes such drills as pronunciation, writing, reading, lecturing, methods of study, etc. Special emphasis is laid upon the importance of orientation of the individual to fit properly into American college life. In this course a complete diagnosis is undertaken to determine each student's particular difficulty.

This is a five hour course not counting toward graduation but equivalent to a five credit course in the student's schedule.

*Introduction to College Study.* Section 2—This course is given for students who feel that they do not have a sufficient knowledge of the proper methods of studying in college. Section 2 is a five hour course, not counting toward graduation, but recorded as a matter of determining schedule and for showing work done in case a student transfers to other universities or colleges.

For students who have been dropped from the University because of scholastic difficulties, this course is an avenue of approach for reinstatement at the discretion of the Board of Deans, if a satisfactory record has been established therein. It has been so arranged as to give the student methods of reading and study, preliminary survey of assignments, taking notes, briefing surveys for reviews and examinations, analysis of discussion, definite plans for meeting examination, etc.

Details concerning these courses and registration for them should be made through the Mens' Personnel office. Since they must be self supporting a fee of \$20 is required for each.

#### 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.

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 Thursday, September 26; for the winter quarter prior to Monday, January 6, 1930; for the spring quarter, prior to Monday, March 31, 1930; and for the summer quarter, prior to Wednesday, June 18, 1930.

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 from 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 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 keep the appointment will not be allowed to reregister for another quarter until the examination is passed on the day before the final registration date for that quarter.

#### 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.

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#### 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 Students*—(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.

*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 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, A.S.U.W. \$10 (per year), library \$1, health service \$1, laboratory fees depending upon courses taken.

*Full Time Non-Resident*—Tuition \$25, 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-registering by petition to 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 student.

*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, except in the Department of Physical Education for Women, where no refund is made of the fees in riding and golf after the first week of instruction. Refunds during the first two weeks of the quarter must be authorized by department heads in the departments of anatomy, chemistry, home economics, pharmacy, and physics. Refunds in music at option of instructors.

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

*Law Library Fee*—Same as general tuition.

*A.S.U.W. Fee*—All students withdrawing must 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 1929-1930. 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, 102, 113, 121, 142, 171.....	\$ 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 \$7.50 for the year.	
Bacteriology—103 .....	1.00
107 .....	2.00
101, 102 .....	4.00
104, 105, 106, 110, 111, 112.....	5.00



Botany—1, 2, 3, 11, 12, 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—All courses except 52, 152, 173, 190, 191, 200, 204, 215, 216, 218, 219, 220, 221, 222, 223, 231, 232, 233, 241, 242, 243, 244, 245, 246, 249 .....	6.50
150, 176, 177, 178, 205, 206, 207, 210, 211, 212, 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
Dramatic Art—101, 102, 103.....	1.00
114, 115, 116 .....	2.00
104, 105, 106 .....	3.00
Economics and Business Administration—All courses except those listed below .....	.50
15, 16 Typewriting, and 18, 19 Shorthand.....	10.00
81, 82, 83 .....	5.00
Education—All courses except those listed below.....	.50
145 .....	2.00
150 .....	3.00
Students registering for Course 145 do not pay the \$.50 Education Library fee.	
Electrical Engineering—132, 141, 181, 183, 196, 198.....	2.00
102, 110, 112, 122, 162, 164.....	4.00
Engineering Shops—115, 120 .....	1.00
52, 54, 55, 105, 106, 107.....	2.00
53, 104 .....	3.00
English—41, 43, 187, 188.....	.50
Fisheries—60 .....	1.00
53, 54, 101, 102, 103, 104, 105, 112, 140.....	3.00
110, 111, 120, 121, 122, 154.....	4.00
150, 151, 152 .....	5.00
201, 202, 203—\$1.00 per credit hour.	
Forestry—1, 5, 51, 52, 53, 59, 101, 104, 152, 190.....	2.00
160, 161, 162, 187, 188, 189, 196, 213, 214, 215.....	3.00
General Engineering—1, 7, 21.....	2.00
Geography—1, 11, 103 .....	1.00
Geology—1a, 1b, 113 .....	1.00
2, 21, 105, 123, 124, 125, 131, 132.....	2.00
154—\$1.00 per credit hour.	
Home Economics—8, 43, 101, 102, 190.....	2.00
25, 111, 112, 113, 121, 127, 130, 131, 133, 135, 143, 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, 61, 90, 91, 92, 104, 135, 145, 150, 160.....	1.00
51, 101, 115, 120, 125, 130, 131, 133, 136, 138, 140, 142, 171, 172, 173, 174, 175 .....	2.00
(Maximum fee for any one student \$2.50 per quarter.)	
Law—Students registered in Law School, maximum of \$10.00. Stu- dents 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
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:	
Allen, Oliver, Canfield (One lesson a week).....	18.00
Venino, Van Ogle, Mabon, Bogardus, Lawrence, Rosen, Lynch, Wood, Kirchner (one lesson a week) .....	25.00
Glen (One lesson a week).....	27.00
Adams (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, 65, 66, 67, 80, 81, 82, 102, 110, 111, 112, 136, 137, 138, 151, 152, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 263, 264, 265.....	1.00
32, 33, 34, 53, 54, 55, 56, 57, 58, 157.....	2.00
116 .....	.50
103, 104, 130 .....	2.50
160, 161, 162, 175, 176, 177, 260, 261, 262.....	3.00
72, 73, 74, 122, 123, 124, 132, 133, 134.....	4.00
158, 159 .....	5.00
Pharmacy—15 .....	1.00
9, 10, 11 .....	3.00
7 .....	4.50
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 combined with Chemistry 39.....	7.50
1, 2, 3, 5, 6, 113, 114, 115, 195, 196, 197.....	6.50
191, 192, 193, 201, 202, 203—\$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, 145, 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.....	
4, 5, 6, 7, 8, 9.....	.50
95, 96, 97 .....	1.00
87, 88 .....	3.50
94 .....	6.00
Physics—1, 2, 3, 4, 5, 6, 7, 50, 51, 54, 89, 90, 97, 98, 99, 101, 105, 111, 113, 115, 206, 207.....	
154, 160 .....	2.00
154, 160 .....	4.00
Psychology—1 .....	1.50
Sociology—1 .....	1.50
56, 62, 158 .....	2.00
55, 142 .....	2.50
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 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 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, diploma in pharmacy, or a teacher's diploma is required to pay a diploma fee of seven dollars and fifty cents (\$7.50). 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.

*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 students at the rate of \$7.15 for each of the first two required years of drill. Advanced students purchase a new uniform and are allowed \$30 the first advanced year and \$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 and Terry 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 and Terry 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 37).

## 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.

## DEGREES WITH HONORS

A degree with honors may be conferred on a student who is declared worthy of unusual distinction on recommendation of the honors committee and a vote of the faculty. Early in May each head of a department brings to the attention of the committee on honors such seniors majoring in his department as he thinks eligible for honors. Honors are not awarded to any student in more than one subject.

## NORMAL DIPLOMAS

The University is authorized by law to issue teachers' diplomas, valid in all public high schools of the state. Candidates for these diplomas should register in the department of education as early as possible after the beginning of the sophomore year, and should consult with the department from time to time as to his work for the diploma and his preparation for teaching. Fuller information may be found in the department of education.

## 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 March 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 March 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 Effie I. Raitt Fellowship*—The Effie I. Raitt fellowship of \$600 is offered annually to a graduate student in home economics for research work in nutrition.

*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 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 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. This scholarship carries free tuition for one weekly lesson throughout the autumn, winter and spring quarters. All candidates must submit their application in writing to Dean Glen before September 1. The competitive examination preliminary to the award is held in room 110, Meany Hall, at 2 p.m., of the Saturday before registration day.

*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.

#### SENIOR SCHOLARS

RULE 15. (a) Students of the Colleges of Liberal Arts, Science, Fine Arts, Business Administration, and of the School of Education and Library School who are intellectually mature, who have 132 or more credits, and who have shown exceptional ability and capacity for independent work in some group of studies, shall be eligible for senior scholarships. Senior scholars shall be elected by the faculty, upon recommendation of the Committee on Honors, in the June preceding their senior year and their election shall be announced at Commencement and published in the catalogue. Ordinarily the number of scholars shall not exceed ten per cent of the class. Students of the above mentioned colleges, who, in the course of their senior year, show fitness therefor may be recommended and elected to senior scholarships.

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

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

#### PRIZES

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

*Judge Kenneth Mackintosh Prize in Debate*—Judge Kenneth Mackintosh offers an annual prize of \$75 to the University of Washington debating team, consisting of two men, who compete with Stanford University in debate.

*Fraternal Order of Eagles Prize*—Seattle Aerie No. 1 of the Fraternal Order of Eagles offers an annual prize of \$100 for the best essay or oration on a selected topic by a student of the University of Washington.

*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 University maintains a Bureau of Appointments to assist students in obtaining positions for which they are fitted in educational, commercial and industrial fields. Students intending to teach or graduates already engaged in teaching, who are ready for promotion may take advantage of this privilege. Correspondence is invited from universities, normal schools, boards of education, superintendents and principals of schools in need of candidates, and other employers. No commission is charged for the services of the bureau.

## ASSOCIATIONS AND CLUBS

*Alumni Association*—Everyone receiving a degree from the University of Washington or who has attended the University for two semesters or three quarters is a member of the Alumni Association. The association is governed by the alumni council, which meets annually. It consists of a representative from each of the local alumni organizations. It determines the basic policies of the association which are carried out by the executive committee. The executive committee consists of the president, the secretary and a treasurer, who are elected each year by the dues-paying members of the association;

and five members elected by the alumni council for a three-year term; together with one representative each from the board of regents, faculty, and associated students. The president for the previous year is also an ex-officio member. The annual dues are \$3, and include a subscription to the official publication, *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 nine 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 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, English Graduate 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, Political 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, Zeta 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 four debating and literary societies in the University: Stevens, Badger, Athena and Sacajawea. The first two are for men, the last two for women. Membership in the clubs is limited so that frequent practice may be afforded.

The Northwest Triangular Debating League, composed of the Universities of Washington, Oregon and Idaho, holds an annual triangular debate for the northwest debate trophy.

The men of the University also meet in single or dual debates, teams from the University of California at Berkeley, Stanford University, the University of Montana and the University of California at Los Angeles.

The women of the University have a triangular league with the University of Oregon and the University of Idaho. They also hold dual debates with the University of California and the University of British Columbia.

*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 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 Pi, Tau Kappa Epsilon, Tau Phi Delta, Theta Delta Chi, Theta Kappa Theta, Theta Xi, Theta Chi, Zeta Beta Tau, Zeta Psi.

*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 Omicron Chi,

Delta Zeta, Gamma Phi Beta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, 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, Wilders, McKenny House.

*Philological Association*—The Philological Association was organized to encourage scientific investigation in languages and literature. Membership is open to all members of the University who are interested in philology.

*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 SCIENCE AND PHYSICAL EDUCATION

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.

Two years of military science are required of all able-bodied male students, except those from foreign countries not intending to become naturalized, (and except men over 24 years of age, at time of original entrance into the University). By regulation of the University the course is required during the first and second years.

Neither the requirement of physical education for women, nor that of military science for men applies to any student entering as a junior or senior if the student has fulfilled the requirements in these subjects laid down by the institution from which he comes.

**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 edu-

cation requirement shall be exempted by him for one or more quarters; provided, 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 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 permitted to register as members of the Reserve Officers' Training Corps. They will be registered in the department of Military Science but deferred for one quarter only during which time they shall submit satisfactory credentials covering the actual amount of work accomplished. Failure to submit these credentials during the first quarter of residence will make it necessary for the student to take military science during the coming quarter. The deferment of military science for this reason and the evaluation of credentials to satisfy the University requirement shall be a function of the commandant. No deferment will be granted students above mentioned for any purpose other than as outlined in this paragraph.

(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.

**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

For the purpose of applying rules concerning scholarship, students of the University will be divided into two groups; lower division students, (i.e., those with not more than 100 credits) and upper division students, (i.e., those with more than 100 credits).

*Lower Division Rules:—*

RULE 23 (a) Any student who, any time in a quarter, is reported to the Registrar as doing work below passing grade in any subject shall be warned.

(b) Any student failing to make grades of A, B, or C in two-thirds of his registered hours for any quarter shall be warned.

(c) Any student who, at the end of any quarter, fails in more than one-third of his registered hours, shall be dropped.

(d) Any student who, at the end of the winter or spring quarters, has failed to make grades of A, B, or C, in at least two-thirds of his registered hours for two quarters of the current regular academic year, shall be dropped.

*Upper Division Rules:—*

(e) Any student who, at the end of any quarter fails to make grades of A, B, or C in at least two-thirds of his registered hours shall be dropped.

*All Students:—*

(f) Reinstatement of a student disqualified under the provisions of Rule 23 shall be allowed only on permission of the board of deans. If a student is reinstated, he shall be on probation, and shall register under conditions prescribed by his dean, who shall be his registering officer.

(g) Probation is the status of a student who, having been dropped for scholastic failures but reinstated by the board of deans, is compelled to pass in all his registered hours. Such a student shall remain on probation until he has made grades of A, B, or C in at least ten credit hours for one quarter.

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

## 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 6 p.m. of the Monday preceding commencement day. 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 will be allowed. See Rule 23, Secs. D and E.

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

\*These grades correspond approximately to the old working scheme, as follows: A, 100-96; B, 95-86; C, 85-76; D, 75-70; E 70-0.

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

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

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

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

#### TUTORING RATES

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

##### No. in Class

1.....	\$2.00 per student
2.....	1.20 per student
3.....	1.00 per student
4.....	.90 per student
5.....	.80 per student
6.....	.70 per student
7-15.....	5.00 per class

No class to be larger than 15.

No reduction to be made for absences.

Fees to be payable by the month, in advance.

#### LIBRARY RULES

RULE 31. Following shall be 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 day the loan expires if there is no other demand for the book.

(c) A fine of 3 cents per day is imposed for each day a book is retained after it is due; provided, however, that if a book is retained five days or more after it is due the borrower may be assessed double the accumulated fine. The date a book is 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 same within ten minutes after the library next opens will subject the borrower to a fine of ten cents for the first hour or any part of that hour and five cents for each additional hour or fraction thereof that the book is retained. All fines are due when the book is returned.

(e) Books must not be taken from the library without being charged at the loan desk.

(f) Failure to comply with (c), (d), or (e) shall be considered "a delinquency in a financial obligation."

#### DISCIPLINE

RULE 32. (a) All charges of infraction of the honor code as promulgated by the A.S.U.W. shall be referred to the senior council established by the A.S.U.W.

(b) The decisions of the senior council in said cases shall be referred to the president of the University before taking effect.

(c) 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.

(d) The number of credits required for graduation may be increased as a penalty for violation of the rules of the University.

#### 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. Fractional hours are to be disregarded in favor of the participant.
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 (f) 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.

(a) 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.

(b) 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.

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

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

*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. 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.

#### FACULTY RULES 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 11:30 p.m. and all parties must be over by 12:30. If a party is held in a women's house, men may remain in the house until 12:30 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, exclusive of the required credits in physical education or military science.

(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.



## 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.

*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, registration and expenses may be found on pages 51, 59, 60.

*Credentials for students expecting to enter the University in the autumn quarter, 1929, should be filed in the registrar's office not later than August 15. 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 Coast Guard.*

## II. REVISED 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. Two units of one foreign language,
  - c. One unit of geometry.

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

*"Unit" Defined*—A "unit" is applied to work taken in high school; a "credit" to work taken in college. To count as a unit, a subject must be taught five times a week, in periods of not less than forty-five minutes, for a school year of thirty-six weeks. In satisfying entrance requirements with college courses, a minimum of ten credits is counted as the equivalent of the entrance unit.

*Recommending Grades*—For the year beginning with the autumn quarter of 1929-30, 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. No student may be accepted for admission who would not be recommended by his school to the university of his home state.

*Note*—Students applying for admission prior to the autumn of 1929-30 will have the option of having their entrance credentials checked in accordance with the requirements of this catalogue or the catalogue published in 1926. It is understood that the student will be given the advantage of any provisions under either the new or the old requirements while the adjustments are being made.

*Provision for Raising Grades*—A student who fails to present recommending grades in the required number of units, may try to raise his grades in one of the following ways:

1. By repeating the necessary subjects in the high school.
2. By attending the Summer High School.
3. By taking regular fall deficiency examinations in the high school after having made provision therefor early in the summer.
4. By passing College Board examinations.

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.

Applicants for admission whose scholarship is open to question should return to the high school from which they were graduated, and if from other states than Washington, should take the College Board Entrance Examinations the following year. It is advisable also for them to take the Scholastic Aptitude Test, conducted by the College Entrance Examination Board in May of each year.

The College Entrance Examination Board will give their examinations in Seattle, Tacoma and Spokane in 1929 from June 17 to 22 and in 1930 from June 16 to 21. Applicants for examination should communicate before April 30, with the Secretary of the College Entrance Examination Board, 431 West 117 Street, New York, N.Y.

*Provisional Admission*—A student who fails to meet the preceding requirements and has not received more than two semester failures in the 10th, 11th and 12th grades, may be admitted for one quarter upon the principal's recommendation based upon a record showing:

1. A satisfactory score in psychological examination.
2. A rating upon (a) Working traits and (b) Special ability.

It should be understood that the object of this rule is to provide for students of exceptional gifts or qualifications along some line, and not to bolster up the ordinary student who falls short of some part of the general admission requirements.

*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<br>mentioned in 3 or 4.....                | 1 unit  |
| 6. Electives, selected from subjects accepted by an ac-<br>credited high school for its diploma..... | 3 units |

Less than one unit will not be counted in physics, chemistry, general biology or a foreign language. A maximum of 4 units will be counted in vocational subjects.

*Foreign Languages Accepted*—For the College of Liberal Arts the foreign language requirement may be satisfied by Latin, Greek, French, German, Spanish, Scandinavian or Italian. If a student presents for en-

trance 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.

For description of special orientation course for non-English speaking students see General Information section, page 57.

*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 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 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.

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### 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. <i>History, U.S.</i> ; 57-58-59	One year of U.S. History in high school (may be $\frac{1}{2}$ civics and $\frac{1}{2}$ U.S. History).
2. <i>History</i> , other than U.S. May be satisfied by 1-2; or 5-6; or 71-72-73	One year of History other than U.S. in high school.
3. <i>English</i> 1-2; ten credits	None.
4. <i>Ancient Life and Literature</i> —ten credits. May be satisfied by: a. <i>Any two</i> : Latin 11, 13, Greek 11, 13 (In English) b. <i>Any two</i> : Greek 17, Latin 13, Greek 13 (In English) c. Greek 15-16 (In English) d. Greek 1-2 (In Greek) e. Latin 4-5 (In Latin) f. <i>Any two</i> : Or. Studies 50, 51, 52 (In English)	Three years of ancient language (Greek and Latin) in high school or college, or in high school and college combined.
5. <i>Physical Science</i> —ten credits, of either: a. Physics 4-5 b. Physics 89-90 (Women only) c. Chemistry 1-2	One year of one in high school.
6. <i>Biological Science</i> —ten credits from one of the following groups: a. Botany 1, 2, 3, 4; b. Botany 105, 106, 107; c. Geology 1a-1b-2; d. Geology 1a-1b, 21; e. Geology 1a-1b, Geography 1 or 11; f. Geology 1a-1b, Geography 112; g. Geography 1 and 11 or 101 or 103; h. Zoology 1-2;	One year of one in high school.
7. <i>Social Science</i> —ten credits of one or five credits each of two. May be satisfied by: a. Any two of—Economics 1, Political Science 1, Sociology 1, or by b. Any one of courses in "a," together with another five credit course for which it is a prerequisite.	None. (Students who did not have civics in high school must have Political Science 1.)
8. <i>Psychology</i> 1; five credits	None.
9. <i>Philosophy</i> ; 5 credits. May be satisfied by 1 or 2 or 3 or 5	None. (Not open to freshmen)
10. <i>Military Science or Physical Education</i> ; 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.

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## V. SCHOLARSHIP STANDING

*Student Classification*—For the purpose of applying rules concerning scholarship, students of the University will be divided into two groups; lower division students, (i.e. those with not more than 100 credits) and upper division students; (i.e. those with more than 100 credits).

*Lower Division Students*—Rule 23:

(a) Any student who, any time in a quarter, is reported to the Registrar as doing work below passing grade in any subject shall be warned.

(b) Any student failing to make grades of A, B, or C, in two-thirds of his registered hours for any quarter shall be warned.

(c) Any student who, at the end of any quarter, fails in more than one-third of his registered hours, shall be dropped.

(d) Any student who, at the end of the winter or spring quarters, has failed to make grades of A, B, or C, in at least two-thirds of his registered hours for two quarters of the current regular academic year, shall be dropped.

*Upper Division Students*—Rule 23:

(e) Any student who, at the end of any quarter has failed to make grades of A, B, or C, in at least two-thirds of his registered hours shall be dropped.

*All Students*—Rule 23:

(f) Reinstatement of a student disqualified under the provisions of this rule shall be allowed only on permission of the board of deans. If a student is reinstated, he shall be on probation, and shall register under conditions prescribed by his dean, who shall be his registering officer.

(g) Probation is the status of a student who, having been dropped for scholastic failures but reinstated by the board of deans, is compelled to pass in all his registered hours. Such a student shall remain on probation until he has made grades of A, B, or C in at least ten credit hours for one quarter.

(h) In the administration of this rule military 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 98-104.

*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.

*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.                       | 129. Taxation.                       |
| 61. Social and Economic Standards of Living. | 131. Economics of Public Utilities.  |
| 103. Money and Banking.                      | 159. Advanced Money and Banking.     |
| 104. Economics of Transportation.            | 161. Labor Problems.                 |
| 106. Economics of Marketing and Advertising. | 162. European Labor Problems.        |
| 108. Risk and Risk Bearing.                  | 164. Land Economics and Real Estate. |
| 121. Corporation Finance.                    | 165. Labor Legislation.              |
| 122. Principles of Investment.               | 168. Women in Industry.              |
| 124. Public Finance.                         | 171. Modern Trends and Criticism.    |
|  | 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  $1\frac{3}{4}$  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 necessity by his dean. A student properly withdrawn and given a "W" shall not be affected by this rule. A grade of "W" can be given only in case of regular withdrawal while in good standing.

*Reading Knowledge of a Foreign Language*—A reading knowledge of one of the foreign languages taught in the University is required for graduation from 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.

*Knowledge of Federal and State Constitutions*—A requirement for any degree granted by this University is a knowledge of the Federal and State constitutions. For further information, see the announcement under Political Science 101 in the Departments of Instruction section, page 337.

*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.

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## 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*—With the approval of the instructor concerned, a student may be examined for advanced credit in work that he has not followed in a college class at the University. Credits and grades so obtained must be certified by the examiner and the registrar, and shall not be given for work done while the student is in residence. 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.

*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 section 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 Departments of Instruction section, page 223. This is also published as a separate bulletin. The student is referred to it for information in regard to courses.

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## 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 science or physical education.

*Adviser*—From the beginning of the freshman year, the adviser for pre-journalism students is the dean of the School of Journalism, or such persons as he may designate.

*Requirements*—The courses with a double dagger listed below are those required of pre-journalism students during the first two years. Those marked with a single dagger are regarded as essential. Others are suggested electives. These courses are arranged in the order in which they should normally follow each other.

## FIRST YEAR

	Credits		Credits
Arch. 3. Appreciation.....	2	Jour. 1. †Jour. as a Profession.....	1
Econ. 1. †Gen. Econ.....	5	Lib. Arts 1. †Intro. to Mod. Thought. 5	5
15. †Typewriting.....	0	Latin 11. †Roman Civ. <sup>1</sup> .....	5
English 1. †Composition.....	5	†Mil. Sci. or Phys. Ed.....	5
64, 65, 66. †Lit. Backgrounds.....	9	Pol. Sci. 1. †Comparative Government. 5	5
Greek. 11. †Greek. Civ. <sup>1</sup> .....	5	†Science <sup>2</sup> .....	10
Hist. 5-6. †Eng. Pol. and Soc. Hist.....	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 Phys. Ed.....	5
61. Soc. & Econ. Stand. of Liv... 5	5	Music 13. Appreciation.....	5
106. †Econ. of Mkts. and Adv... 5	5	6. History of Music.....	5
18, 19. †Shorthand <sup>3</sup> .....	0	Phil. 5. †Intro. to Logic <sup>4</sup> .....	5
English 67, 68, 67. †Great Am. Writers. 6	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		

## 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 92.

**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.

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Journalism 140, to be taken in the third year, may be substituted for this requirement.

<sup>4</sup> Philosophy 1 or Philosophy 3 may be substituted for this requirement.

*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	Political Science 119, 120
Astronomy 1	Sociology 1
Liberal Arts 1, 11	English 38, 40
Latin 1-2, 3, 4, 5, 6	English 51, 52, 53
B.A. 1, 2	English 54, 55, 56
B.A. 15, 16	English 64, 65, 66
B.A. 65	English 73, 74, 75
Political Science 1	History 105, 106, 107
Political Science 118	History 108, 109, 110

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## 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 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 ten 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 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 94. 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.

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### XIII. PRE-LIBRARY CURRICULUM

*Admission*—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 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

<i>Credits</i>	<i>Credits</i>
English †1-2. Composition, unless exempted by examination.....10	Music 13. Appreciation ..... 5
70,71,72. Shakespeare ..... 9	*Mod. Lang. †French or German.....15
64,65,66. Lit. Backgrounds ..... 9	Psychology 1. †General..... 5
*History 1-2. Medieval and Modern...10	Lib. Arts 1. Intro. to Mod. Thought.. 5
5-6. Eng. Pol. and Social.....10	Arch. 3. Appreciation..... 2
*Science, Bot., Geol. or Zool.....10	*Latin †11, 13. Rom. Civ. and Lit....10

## SECOND YEAR

<i>Credits</i>	<i>Credits</i>
*Mod. Lang. †Fourth yr. of foreign language previously taken..... 5	*Pol. Sci. †1. Comparative Gov't..... 5
Begin other lang. required by Library School .....10	*Sociology †1. Introduction..... 5
*History. †57-58-59. United States..... 9	62. Play and Leisure Time..... 3
*Greek †15-16. Civilization.....10	*Econ. †1. Introduction..... 5
Anthropology 51. Evol. of Civ..... 5	7. Geog. Background of Industry.. 5
Zoology 16. Evolution..... 2	61. Social and Econ. Standards... 5
17. Eugenics ..... 2	Lib. Arts. †11. Intro. to Fine Arts.. 5
	*Oriental Studies 50,51,52. Orient. Lit..10

## THIRD YEAR

<i>Credits</i>	<i>Credits</i>
*Mod. Lang. Complete Library School Requirement .....10	English †134. Reformation in Eng.... 3
Phil. †1, 2 or 3. Introduction..... 5	†137. 19th Cent. Prose..... 3
History 125. Turkey and Near East... 5	†164,165,166. Am. Lit. from 1870.. 9
†130. Europe, 1814-1870 ..... 5	174,175. 19th Cent. Poetry..... 6
†131. Europe Since 1870..... 5	*Sci. Phys. 1-2 or Chem. 1-2.....10
Pol. Sci. 122. Foreign Affairs..... 3	German 108,108. Ger. Lit. in Tr.... 5
123. Intern. Relations ..... 3	Rom. Lang. 118,119,120. Survey Fr. Lit. .... 9
156. European Gov. & Pol. Insts... 5	†181,182,184. Ital. Lit. in Tr..... 6
161,162,163. Governments .....15	Scand. Lit. 109,110,111. Mod. Auth.. 3
†101. Constitutional Gov. in U.S. and Washington ..... 2	180,181,182. Recent Lit..... 6
Oriental Studies 114,115,116. Hist. of Religion ..... 9	
120. Prob. Eastern Asia and Pac... 5	

**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 92) and it is urged that those requirements be worked off as soon as possible.

<sup>1</sup> This requirement may be satisfied by the first course in each of two of these (Econ., Soc., or Pol. Sci.), 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.

<sup>2</sup> These requirements may be satisfied in high school or in college.

<sup>3</sup> The Library School requires twenty hours each of French and German in either high school or college.

<sup>4</sup> 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.

*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:

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Political Science 1.....	5	History 6 .....	5	Psychology 1 .....	5
History 5 .....	5	English 65 .....	3	English 66 .....	3
English 64 .....	3	Liberal Arts 1.....	5	Zoology 17 .....	2
Zoology 16 .....	2	Geology 1a, 1b.....	5	Geology 2 .....	5
		Sociology 1 .....	5	English 40 .....	5

## SECOND YEAR

History 57 .....	3	History 58 .....	3	History 59 .....	3
		Anthropology 51 .....	5	Education 119 .....	3
				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 impossible to give sound preparation for more; and results are better when these two subjects reinforce 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 119 (open to sophomores who have earned 65 hours), Education 140, 145, and 160, and five hours of electives in education.

Course 140 should be taken during the junior year. This course is prerequisite to Education 145 (cadet teaching) which should be planned for the autumn or winter terms of the senior year. Placements for the spring term in the city schools are limited. The School of Education section, page 121 should be consulted for complete details concerning requirements for the normal diploma and for the proper arrangement of education courses to meet those requirements adequately.

4. *Supplementary Professional Preparation*—Here fall courses offered chiefly in the School of Education and the department of psychology, but supplemented, usefully at points, by courses available in the departments of bacteriology, sociology, zoology and home economics.

#### COURSES OF STUDY

For description of courses see Department of Instruction section.

## 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. Mathematics
  - F. Military Science
  - G. Naval Science
  - H. 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, 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.

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, 59, 60.

*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, page 214.

### 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.

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 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

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½

† 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.

\* Physiography (with laboratory work) taken in a high school will be accepted instead of geology.

## College of Science

## SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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	
Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%	

## 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 .....	8	Electives .....	10
		Pol. Sci. 101.....	2		

## B. BIOLOGICAL SCIENCES

In this curriculum the student must select a major in anatomy, botany, or zoology. On selecting his major subject, the student should at once consult his major department, a member of which will act as his adviser. The adviser will plan a special curriculum for the student, fitting him for his chosen work. This curriculum must be submitted to the Dean of the College of Science for approval. Thereafter the individual curriculum can be changed only with consent of the adviser and the dean.

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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		Mil. Sci. or Phys. Ed.. 1%	
Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%			

## SECOND YEAR

Chemistry or Physics... 5	Chemistry or Physics... 5	Major .....	5
Major .....	Major .....	Electives .....	10
Electives .....	Electives .....	Mil. Sci. or Phys. Ed.. 1%	
Mil. Sci. or Phys. Ed.. 1%	Mil. Sci. or Phys. Ed.. 1%		

## THIRD YEAR

Major .....	5	Major .....	5	Major .....	5
Soc., Pol. Sci. or Econ.. 5		Soc., Pol. Sci. or Econ. 5		Electives .....	10
Electives .....	5	Electives .....	5		

## FOURTH YEAR

Major .....	5	Major .....	5	Electives .....	13
Electives .....	10	Electives .....	10	Pol. Sci. 101.....	2

## C. CHEMISTRY

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chemistry 1 or 21.....	5	Chemistry 2 or 22.....	5	Chemistry 23 .....	5
Mathematics 4 .....	5	Mathematics 5 .....	5	Mathematics 8 .....	5
English 1 .....	5	English 2 or Electives 5		Electives .....	5
Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%	

- (a) Geology or Mineralogy  
 Options (b) Mechanical Drawing.  
 (c) Biological Science.

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

## SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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	<sup>2</sup> Electives .....	5
Electives .....	2	Electives .....	2	Mil. Sci. or Phys. Ed..	1½
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½		

## THIRD YEAR

Chemistry 131 .....	5	Chemistry 132 .....	5	Chemistry 133 .....	5
<sup>2</sup> Electives .....	5	<sup>2</sup> Electives .....	5	<sup>2</sup> Electives .....	5
Group Options		Group Options		Group Options	
(a) General— <sup>4</sup> Electives .....	5	(a) General— <sup>4</sup> Electives .....	5	(a) General— <sup>4</sup> Electives .....	5
(b) Industrial— Chemistry 121 ....	5	(b) Industrial— Chemistry 122 ....	5	(b) Industrial— Chemistry 123 ....	5
(c) Biochemical— Physiology 151 or Bacteriology 101 ..	5	(c) Biochemical— Physiology 152 or Bacteriology 102 ..	5	(c) Biochemical— Physiology 153 or Bacteriology 103 ..	5

## FOURTH YEAR

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

## D. GEOLOGY

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 1 or 21.....	5	Chem. 2 or 22.....	5	Chemistry 23 .....	5
Geol. 1a & 1b.....	5	Geology 2 .....	5	English 1 .....	5
Math. 4 or 51.....	5 or 4	Math. 5 or 52.....	5 or 4	Math. 6 or 53.....	5 or 4
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½

## SECOND YEAR

Physics 1 .....	5	Physics 2 .....	5	English 2 .....	5
Geology 21 .....	5	Gen. Eng. 1.....	3	Civil Eng. 54.....	3
French 1 or German 1.	5	Gen. Eng. 21.....	3	French 3 or German 3.	5
Mil. Sci. or Phys. Ed..	1½	French 2 or German 2.	5	Mil. Sci. or Phys. Ed..	1½
		Mil. Sci. or Phys. Ed..	1½		

## THIRD YEAR

Geology 123 .....	3	Geology 124 .....	4	Geology 125 .....	4
Bot. or Zool.....	5	Bot. or Zool.....	5	Geology 132 .....	5
Astronomy 1 .....	5	Geology 131 .....	5	Metallurgy 102 .....	5
		Geology 140 .....	3	Elective .....	3

## FOURTH YEAR

Geology 126 .....	3	Geology 127 .....	5	Geology 128 .....	3
Mining 51 .....	3	Metallurgy 153 .....	3	Metallurgy 160 .....	2
Geology 190 .....	5	Geol. 122 or Elec.....	10	Geology 113 .....	5
Elective .....	3			Geology 154 .....	5

<sup>2</sup> Students expecting to elect the industrial group in junior year must take Chemistry 52 the spring quarter of the sophomore year.

<sup>3</sup> 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.

<sup>4</sup> The History of Chemistry, Chem. 190 and 191 are suggested as electives in either the junior or senior year.

## E. MATHEMATICS

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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
Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%	

## 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
Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%	

## 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 119 .....	3
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

## FOURTH YEAR

## Group I—Secondary School Teachers

Education 140 .....	5	Education electives ....	3	Education .....	3
Education 145 .....	5	Electives .....	10	Electives .....	3
Electives .....	7	Pol. Sci. 101.....	2	Education 160M .....	3

## Group II—College and University Teachers

Mathematics .....	5	Mathematics .....	5	Mathematics .....	5
Electives .....	10	Electives .....	10	Electives .....	8
				Pol. Sci. 101.....	2

## F. FOUR-YEAR CURRICULUM IN MILITARY SCIENCE

For students who desire to major in military science the following four-year curriculum has been provided. This will give a good general college education upon which any line of professional or technical study may be based and will give to the graduate the degree of B.S. in Military Science, and at the same time enable him to obtain a commission as second lieutenant in the Officers' Reserve Corps of the United States Army in accordance with the provisions of the National Defense Act.

## Military Science

<i>First Year</i>	<i>Credits</i>	<i>Second Year</i>	<i>Credits</i>
Mil. Sci. 1-2-3, all units.....	5	Mil. Sci. 51-52-53 Inf. } .....	5
Math. 1 (Algebra).....	5	Mil. Sci. 61-62-63 Arty. }	
Math. 2 (Solid Geometry).....	5	Mil. Sci. 71-72-73 Ord. }	
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 154-155-156	
Military Science 114-115-116	9	Military Science 164-165-166	9
Military Science 124-125-126		Military Science 174-175-176	
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*

‡ See Pol. Sci. department for requirement of Pol. Sci. 101.

\* All electives will be outside the military department.

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.

#### G. 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	1½	Naval Science 2	1½	Naval Science 3	1½
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	1½	Naval Science 52	1½	Naval Science 53	1½
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. 108	3	Elec. Engr. 101-102	6	Naval Thesis	5
Electives	9	Electives	6	Mechanical Engr. 170	3
				Electives	5

*Summer Quarter—Advanced R.O.T.C. Cruise (Required).\**

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

\* 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.



## H. 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
Mil. Sci. or Phys. Ed.....	5	Mil. Sci. or Phys. Ed.....	5
<hr/>			
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		

## 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
*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
*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 †1a, 1b, 2. General.....	10
		Music 13. Appreciation.....	5

## 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
Pol. Sci. †101. Const. Gov. in U.S. and Wash. ....	2	English 136, 137. 19th Cent. Prose..	6

† 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.

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

† Required courses.

For those who take the library curriculum in the senior year no academic major is required in the College of Science, as the technical training of the Library School constitutes this major. Subjects marked with the double dagger are required. The complete Library School curriculum constitutes the fourth year of study.

#### IV. PRESCRIBED CURRICULA IN VOCATIONAL SUBJECTS

##### A. PRESCRIBED CURRICULA IN HOME ECONOMICS

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.

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 lead 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

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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	Pol. Sci. 101 .....	2
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Preferred electives—H.E. 105-106, 111, 112, 113, 116; Physics 89-90.

## FOURTH YEAR

Preferred electives—H.E. 144-145, 148, 143, 190; Arch. 1-2.

## Group II—Food and Nutrition

## FIRST YEAR

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

Pol. Sci. 101 .....	2	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. 148, 183, 190, 191 and related sciences.

## Group III—Smith-Hughes Teacher Training

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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
Physical 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 119 .....	3	Education 140 .....	5	Economics 1 .....	5
Education elective ....	2			Elective .....	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 160I .....	3	Education 160J .....	3	Education 145 .....	5
		Education 145 .....	2½	Pol. Sci. 101 .....	2
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

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
English 1 .....	5	English 2 .....	5	Chemistry 2 or 22....	5
Physiology 7 .....	5	Chemistry 1 or 21....	5	Lang., Lit., or Hist....	5
Physical Ed. ....	2	Physical Ed. ....	2	Physical 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
Physical Ed. ....	2	Physical Ed. ....	1	Physical Ed. ....	1

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

## THIRD YEAR

Pol. Sci. 101.....	2	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, 148, 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		<u>100</u>

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. 119, 140, 145, 160I; and five hours in education and H.E. 148.

## 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		169, 170 .....	4	25. Textiles .....	5
Phys 89-90 .....	10	Electives .....	8	127. Non-Textiles .....	3
Physiology 7 .....	5	Arch. 1-2 .....	4	101-102 .....	4
Economics 1 .....	5			109. House M'gt. ....	5
Sociology 1 .....	5			112-118. Clothing .....	10
Psychology 1 .....	5			133. Costume Des. ....	5
Philosophy 1 or 2 .....	5			135. Millinery .....	3
Pol. Sci 101 .....	2			143. Home Furn. ....	3
				160, 161. Adv. Cloth.	
				Construction .....	6
				188. Adv. Text. ....	2
Total .....	<u>67</u>			Total .....	<u>51</u>
Free Electives .....	34	Total .....	<u>31</u>	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	Pol. Sci. 101 .....	2
Bacteriology 101 .....	5	Bacteriology 102 .....	5	Bacteriology 103 .....	5
English 40 .....	5	Electives .....	7	Electives .....	8
Electives .....	2				

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

	<i>Credits</i>		<i>Credits</i>
Hygiene and Sanitation .....	2	Modern Social and Health Movements.	3
Materia Medica .....	4	Obstetrical Nursing .....	3
Elementary Nursing Procedure.....	6	Mental Nursing .....	3
Advanced Nursing Procedure.....	3	Emergency Nursing .....	2
Elements of Pathology.....	2	Diseases of Eye, Ear, Nose and Throat .....	2
Medical Nursing (including diseases of skin) .....	6	Pediatric Nursing .....	3
Surgical Nursing .....	3	Nursing Practice .....	48

## Curriculum for Graduate Nurses

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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 10, 17.					

## SECOND YEAR

Physiology 53 .....	5	Physiology 54 .....	5	Physiology 55 .....	5
Home Economics 105... 5		Home Economics 106... 5		Education 119 .....	3
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 .....	8
Elective .....	5	Nursing 103 .....	5	Pol. Sci. 101.....	2
Preferred electives—Sociology 155, 156, 157, 171, 173; Nursing 110.					

## C. PHYSICAL EDUCATION FOR MEN

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
English 1 .....	5	English 2 .....	5	Sociology 1 .....	5
Zoology 1 .....	5	Zoology 2 .....	5	Chemistry 2 or 22.....	5
P.E. 80. Intr. to P.E. ....	2	Chemistry 1 or 21.....	5	P.E. 90. Per. & Gen. Hyg. 2	
P.E. 1 .....	1½	P.E. 2 .....	1½	P.E. 3 .....	1½
Electives .....	3			Electives .....	3

## SECOND YEAR

Physiology 53 .....	5	Physiology 54 .....	5	Physiology 55 .....	5
Bacteriology 103 .....	5	P.E. 110 .....	2	Sociology 62 .....	3
P.E. 51 or 58.....	1½	Psychology 1 .....	5	P.E. 53 or 60.....	1½
Electives .....	5	P.E. 52 or 50 .....	1½	Electives .....	7
		Electives .....	3	Suggested elective—	
				P.E. 173 .....	2
				113 .....	3

## THIRD YEAR

Education 119 .....	3	Education elective .....	3	Education 150 .....	3
P.E. 131 .....	3	Pol. Sci. 101.....	2	P.E. 133 .....	3
141. ....	3	P.E. 132 .....	3	143 .....	3
Electives .....	6	142 .....	3	Electives .....	6
Suggested elective—		Electives .....	4	Suggested elective—	
P.E. 171 .....	2	Suggested elective—		P.E. 170 .....	2
		P.E. 175 .....	2		

## FOURTH YEAR

Education 140 .....	5	Education 145 .....	2½	Education 145 .....	5
P.E. 145 .....	3	100S .....	2	P.E. 150 .....	3
Electives .....	7	151 .....	3	153 .....	2
Suggested electives—		Nursing 140 .....	3	Electives .....	5
P.E. 174 .....	2	Electives .....	5	Suggested electives—	
172 .....	2			P.E. 176 .....	2
				155 .....	5

## D. PHYSICAL EDUCATION FOR WOMEN

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
English 1 .....	5	Sociology 1 .....	5	English 2 .....	5
Zoology 1 .....	5	Physical Education 100.2	2	Zoology 17 .....	2
Zoology 16 .....	2	Elective .....	3	Elective .....	3
P.E. 4-5 .....	2	Physical Education 6-7.2	2	Physical Education 8-9.2	2
Physical Education ....	3	Physical Education ....	3	Physical Education ....	3
<i>Summer Quarter</i>					
P.E. 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	3	Physical Education 112.3	3	Physical Education 113.3	3
Elective .....	2	Physical Education ....	3	Physical Education ....	3
Physical Education ....	3				

## THIRD YEAR

Education 119 .....	3	Educ. Elective .....	3	Education 140 .....	5
Physical Education 122.3	3	Political Science 101...	2	Physical Education 102.3	3
Physical Education 162.5	5	Physical Education 101.3	3	Physical Education 164.5	5
Educ. Elective .....	2	Physical Education 163.5	5	Elective .....	2
Elective .....	2	Elective .....	2		

## FOURTH YEAR

Physical Education 131.3	3	Physical Education 132.3	3	Physical Education 133.3	3
Education 100R .....	2	Nursing 140 .....	8	Education 145 .....	2½
Education 145 .....	2½	Education 145 .....	2½	Physical Education 153.2	2
Electives .....	8	Physical Education 152.2	2	Electives .....	8
		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 106 (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: P.E. 178, 179, 159, 170, and 175.

Other elective courses which may be taken are: P.E. 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

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½

## 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	Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½
Mil. Sci. or Phys. Ed..	1½				

## 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	Elective .....	6	Anatomy 104 .....	4
				Pol. Sci. 101 .....	2

## 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:

	<i>Credits</i>		<i>Credits</i>
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 119 .....	3
‡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.

	<i>Credits</i>		<i>Credits</i>
Nursing Education 102.....	3	Sociology 171 .....	5
Nursing Education 103 .....	3	Psychology 1 .....	3
Home Economics 104.....	3	English 1 .....	5

\* Approved electives may be substituted.

‡ Electives.



## 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:

	<i>Credits</i>		<i>Credits</i>
Chemistry 7 .....	5	Anatomy 25 .....	3
Home Economics 9 .....	6	Physiology 20 .....	3

## VI. PRE-LANDSCAPE GARDENING CURRICULUM

The climate and flora of this region make it peculiarly fitted for the study of landscape gardening. There are likewise increasing demands for work of this nature. It therefore seems possible and feasible to construct from courses already offered in the University a two-year curriculum for those students who wish to specialize in landscaping. This will enable them to finish the course, such as that offered at the University of California, Cornell University, Iowa State College, Washington State College and Oregon State College, in two years.

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Botany 1 .....	5	Botany 2 .....	5	Botany 3 .....	5
P.S.D. 5 .....	3	P.S.D. 6 .....	3	P.S.D. 7 .....	3
English 1 .....	5	English 2 .....	5	Economics 1 .....	5
Mathematics 54 .....	3	Mathematics 55 .....	3	Geology 1a .....	3
Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%	

## SECOND YEAR

Arch. 1 .....	2	Arch. 2 .....	2	Arch. 114 .....	2
Arch. 4 .....	4	Arch. 5 .....	4	G.E. 21 .....	3
Arch. 7 .....	1	Arch. 8 .....	1	Botany 90 .....	3
Arch. 112 .....	2	Arch. 113 .....	2	Botany 101 .....	5
B.A. 54 .....	3	G.E. 7 .....	3	Elective .....	2
English 40 .....	5	Geology 1b .....	2	Mil. Sci. or Phys. Ed.. 1%	
Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%			

## COURSES OF STUDY

For description of courses see Department of Instruction section.

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General Note: Each student is to be held either for the admission and graduation requirements of the catalogue under which he enters, or for those of the catalogue under which he graduates.

## 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, 119, 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 afford 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 35 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*—Because of 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 of (a) 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 Supervised 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 supervised teaching under the direction of the regular teachers of the school and the university professors in charge of that work. Thus students have an opportunity to gain valuable experience under exceptionally favorable conditions.

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

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

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

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

*Library Science*—Many schools that cannot afford trained librarians have libraries that must be administered by some member of the teaching staff. The Library School offers a 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, 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 drill must be completed.

Sophomores who have earned 65 hours of credit may enroll in course 119, Secondary Education.

*Admission of Normal School Graduates to Advanced Standing*—Advanced credit for work taken in approved normal schools by students previously graduated from an accredited four-year secondary school, will be allowed at the rate of 45 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 advanced credit must earn in the University a sufficient number of credits to bring the total up to 180 credits plus ten credits of required courses in physical education or military 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:

	<i>Credits</i>		<i>Credits</i>
119. Secondary Education .....	3	150. Educational Measurements .....	3
140. Intro. High School Procedure...	5	160. Teachers' Course in Spec. Sub..	2
145. Cadet Teaching .....	5-7 ½	Educational Electives .....	4 ½-7

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):

	<i>Credits</i>		<i>Credits</i>
119. Secondary Education .....	3	160. Teachers' Course in Spec. Sub..	2
150. Educational Measurements .....	3	Educational Electives .....	12

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 119, 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.

DISTRIBUTION OF COURSES IN EDUCATION IN PREPARATION FOR SPECIAL  
TYPES OF POSITIONS, LEADING TO MASTER'S DEGREE

Requirements in Education for Bachelor of Arts in Education, or Bachelor of Science in Education.

High School Principal <i>*Credits</i>	Grade School Principal <i>*Credits</i>	Village Superintendent <i>*Credits</i>	City Superintendent <i>*Credits</i>
Secondary Educ.. 3	Secondary Educ.. 3	Secondary Educ.. 3	Secondary Educ.. 3
Int. H.S. Proced. 5	Int. H.S. Proced. 5	Int. H.S. Proced. 5	Int. H.S. Proced. 5
Teachers' Course	Teachers' Course	Teachers' Course	Teachers' Course
in Spec. Subj.. 2	in Spec. Subj.. 2	in Spec. Subj.. 2	in Spec. Subj.. 2
Cadet Teaching 5-7 ½	Cadet Teaching 5-7 ½	Cadet Teaching 5-7 ½	Cadet Teaching 5-7 ½
Educ. Measure... 3	Educ. Measure... 3	Educ. Measure... 3	Educ. Measure... 3
Elect. in Edu. 4 ½-7	Elect. in Edu. 4 ½-7	Elect. in Edu. 4 ½-7	Elect. in Edu. 4 ½-7
25	25	25	25

\*Quarter hours.

## Additional requirements in Education for Master's Degree

Junior High School 2	Junior High School 2	Educational Sociology ..... 3	Junior High School 2
High School Organization .... 2	Intelligence and its measurement... 6	Psych. of Elementary School Subjects ..... 3	Intelligence and its measurement... 6
Psych. of High School Subjects 3	Psych. of Elementary School Subjects ..... 3	Educational Administration... 6	Psych. of Elementary School Subjects ..... 3
Educational Administration... 6	Educational Administration... 6	Electives ..... 10	Educational Administration... 6
Electives ..... 0	Electives ..... 5	Thesis ..... 6	Electives ..... 5
Thesis ..... 6	Thesis ..... 6		Thesis ..... 6
28	28	28	28

## REQUIREMENTS IN EDUCATION FOR SPECIAL POSITIONS AND FOR DEGREE OF DOCTOR OF PHILOSOPHY

In addition to the requirements for the bachelor's degree in education elect 60 hours from the following and such other approved graduate courses as may be offered in the summer quarter.

	<i>Credits</i>		<i>Credits</i>
151. Educational Sociology ..... 3		192. Administration City ..... 4	
154. Junior High School ..... 2		195. School Supervision ..... 4	
155. Child Study ..... 3		198-197-198. Intell. and its Meas. .... 6	
156. High School Organization ..... 2		201-202-203. Prob. in Mod. Meth. .... 9	
157. Extra-Class & Intramural Act. .... 3		205. Org. & Adm. of Superv. Tchg. .... 3	
159. High School Principal ..... 3		206. Educ. Statistics ..... 5	
162A, 162B, 162C. Hist. of Educ. .... 9		210-211. Meth. Educ. Research. .... 0	
164. History of Secondary Education. 3		212-213. Comparative Education ..... 4	
165. Problem Children ..... 5		215. Junior College ..... 3	
167. Meth. & Proceed. H.S. Instruc. .... 3		222. Sem. in Soc. Sur. of Sch. Mat. .... 5	
168. Secondary School Curricula ..... 3		232. Adv. Educ. Psychology ..... 3	
169A-169B. Techn. of Curr. Making. .... 6		235. Review Rec. Educ. Lit. .... 3	
170. Educational Psychology ..... 5		245. Technique Objective Superv. .... 3	
171A-171B. Mod. Psych. & Education. .... 6		250. New Educ. Exp. in Eur. & Amer. .... 4	
172. Psych. of Elem. School Subjects 3		251-252-253. Sem. Psych. H.S. Sub. .... 9	
173. Psych. of High School Subjects. 3		257-258. Superv. Sec. Sch. Subj. .... 6	
174. Psych. Prob. of Vocational Ed. 3		261-262. Sem. Educ. Soc. .... 10	
176. Educ. and Vocational Guidance. .... 3		271-272-273. Sem. Educ. Surveys. .... 6	
179. Health Education Movement. .... 3		275-276-277. Sem. Sec. Educ. .... 6	
181. Prob. of Adolescence ..... 5		281. Sem. Character Education. .... 2	
183. Phil. of Education ..... 5		282-283-284. Sem. Phil. of Educ. .... 9	
185. Admin. & Superv. of Jr. H.S. .... 3		285-286-287. Sem. in Educ. Meas. .... 6	
186. Elem. School Curriculum ..... 4		291. Sem. Admin. (Legislation) ..... 4	
190. Elem. School Principal ..... 4		292. Sem. Admin. (Sch. Bldgs.) ..... 2	
191. Admin. State and County ..... 4		293. Sem. Admin. (Finance) ..... 4	

## 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:

	<i>Credits</i>		<i>Credits</i>
119. Secondary Education ..... 3		160. Teachers' Course in Spec. Sub. .... 2	
140. Introduction to H.S. Procedure. 5		Electives in Education ..... 2½-5	
145. *Cadet Teaching ..... 5-7½			

\*Students shall take 7½ hours in course 145, 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. The credits shall be distributed as follows unless equivalent courses have already been pursued:

	<i>Credits</i>		<i>Credits</i>
119. Secondary Education .....	8	100. Teachers' Course in Spec. Subj. 2	
150. Educational Measurements ....	8	Electives in Education.....	12

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	Geography	Physical Education
Botany	Geology	for Women
Chemistry	German	Physics
Civics	History	Political Science
Commercial	Home Economics	Public School Art
Teaching	Journalism	Public School Music
Dramatic Art	Latin	Sociology
Economics	Mathematics	Spanish
English, including	Physical Education	Zoology
Public Speaking	for Men	
French		

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 35 quarter hours in education which must include educational psychology

(course 170 or course 232 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 145 (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, Elensburg, Everett, Ferndale, Hoquiam, Kelso, Kennewick, Kent, Longview, Monroe, Montesano, Mt. Vernon, Olympia, Pasco, Pomeroy, Prosser, Pullman, Raymond, Rosalia, Seattle, Sedro-Woolley, Snohomish, Spokane, Sprague, Sunnyside, Tacoma, Vancouver, Walla Walla, Waterville, Yakima.

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

##### BACTERIOLOGY

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

##### BOTANY

<i>Major</i>		<i>Credits</i>	<i>Minor</i>		<i>Credits</i>
1.	Elementary Botany .....	5	1.	Elementary Botany .....	5
2.	Elementary Botany .....	5	2.	Elementary Botany .....	5
105,106,107.	Morph. and Evol.....	15	105,106,107.	Morph. and Evol.....	15
140,141,142.	General Fungi } .....	15			
or					
143,144,145.	Plant Physiology }	15		Minimum total.....	25
Minimum total.....		40			

## CHEMISTRY

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

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

## CIVICS

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1. Comparative Government ..... 5		1. Comparative Government ..... 5	
1. General Economics ..... 5		1. General Economics } or 1. Introductory Sociology }	..... 5
1. Introductory Sociology ..... 5		Elective in Political Science.....	10
Elective in Political Science..... 15			
Elective in Econom. or Sociology.... 5		Minimum total.....	20
Minimum total.....	35		

## COMMERCIAL TEACHING

Following are the specific requirements for the academic major and minor in the School of Education and for major and minor recommendations for the normal diploma in commercial teaching. Both major and minor requirements are based upon the general pre-business curriculum of the first two years of the College of Business Administration.

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
Pre-business (First two years).....	90	Pre-business (First two years).....	90
B.A. 81-82. Secretarial Training.....	10	81-82. Secretarial Training ..... 10	
83. Office Training and Practice... 3		102. Office Management ..... 5	
102. Office Management ..... 5		115. Business Correspondence ..... 5	
103. Money and Banking ..... 5		Education ..... 25	
105. Business Organization ..... 5		Approved Major (minimum).....	35
115. Business Correspondence ..... 5		Electives ..... 10	
Education ..... 25			
Approved Minor (minimum).....	20		
Approved Electives ..... 12			

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

	<i>Credits</i>		<i>Credits</i>
B.A. 15-16. Typewriting ..... 0		7. Geog. Background of Industry.....	5
18,19. Shorthand ..... 0		62,63,64. Principles of Accounting... 15	
1,2. General Economics ..... 10		81,82. Secretarial Training ..... 10	

Grades of B must be earned in 62, 63, 64, 81, 82.

## DRAMATIC ART

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
5. Phonetics, Elementary Course.....	5	5. Phonetics, Elementary Course..	5
107-108. Phonetics, Advanced .....	10	107. Phonetics, Advanced .....	5
61-62. Dramatic Interpretation .....	10	61. Dramatic Interpretation .....	5
101-102. Play-acting .....	6	101-102. Play-acting .....	6
104-105-106. Theatre Workshop .....	12	104-105. Theater Workshop .....	8
114-115. Advanced Theatre Workshop ..	4	127. History of Theatre Art.....	5
127. History of Theatre Art.....	5	153. Representative Plays .....	3
131, 132 or 133. Staging of Shakesp. 3			
153. Representative Plays .....	3	Minimum total.....	37
Minimum total.....	58		

For a major the student having advanced credit from other institutions must take at least one-half of the required 58 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 37 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, and at least 30 additional credits chosen from the following list; an academic minor in economics must include B.A. 1, 2, 160, and 5 additional credits selected from the following list:

<i>Credits</i>	<i>Credits</i>
B.A. 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. Land Econ. and Real Estate..	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	Minor	Credits
131. Chaucer .....	3	64,65,66. Literary Backgrounds.....	9
170,171. Shakespeare .....	6	170. Shakespeare .....	3
127. Milton } .....	3	162 or 163. American Literature.....	3
or		174 or 175. 19th Cent. Poetry.....	3
144. Classic Period } .....	3	148. The English Novel.....	3
162 or 163. American Literature.....	3	189. Interpretative Reading .....	3
174,175. 19th Cent. Poetry.....	6	38. Argumentation } .....	3 or 4
148,149. The English Novel.....	6	51-56. Advanced Comp. } .....	3 or 4
137. Victorian Prose .....	3	117-119. Hlst. of Eng. Lang. } .....	3 or 4
189. Interpretative Reading .....	3		
38. Argumentation } .....	3 or 4	Minimum total.....	27 or 28
51-56. Advanced Comp. } .....	3 or 4		
117-119. Hlst. of Eng. Lang. } .....	3 or 4		
Minimum total.....	36 or 37		

1. Note that the above courses are recommended. Substitutions in this list are allowed, however, if approved in writing by the department of English. English 1 and 2 cannot be offered for either a major or a minor. Among the recognized substitutions in these lists are English 67, 68, 69 for 163; 70, 71, 72, for 170, 171; 83 for 174; 84 for 175; and 81 or 136 for 137.

2. Senior Examination: As preparation for this examination English 191, 192, 193, major conference, is usually necessary.

3. All students taking an academic major in English will be given an examination in composition on entrance into Education 160E. Those who fail in the examination will be required to take Educ. 160C before entering Education 160E, Teachers' Course in English. For a normal diploma, the student must pass Educ. 160E or Educ. 160EC and 160 EL.

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

## GEOGRAPHY

Major	Credits	Minor	Credits
1. Principles of Econ. Geog.....	5	1. Prin. of Econ. Geog.....	5
1a, 1b. General Geology.....	5	1a, 1b. General Geology.....	5
11. Weather and Climate.....	5	100. Econ. Geog. of N. America... 5	
100. Econ. Geog. of N. America... 5		101. Indus. & Pol. Geog. of Europe } .....	5
101. Indus. & Pol. Geog. of Europe. 5		or	
103. Pol. & Econ. Geog. of Asia... 5		103. Pol. & Social Geog. of Asia... }	
175. Prob. in Pol. Geog. } .....	5	Minimum total.....	20
or			
Geography Thesis (100) } .....	5		
Minimum total.....	35		

## GEOLOGY

Major	Credits	Minor	Credits
1a, 1b. General Geology.....	5	1a, 1b. General Geology.....	5
2. General Geology .....	5	2. General Geology .....	5
21. Mineralogy .....	5	21. Mineralogy .....	5
120. Petrology .....	3	Geography Elective .....	5
123. Optical Mineralogy .....	3	Minimum total.....	20
124. Petrography .....	4		
126. Economic Geology .....	3		
131. General Paleontology .....	5		
Geography Elective .....	5		
Minimum total.....	38		



Major	Credits	Minor	Credits
1. Required: a total of 38 credits.		1-2. Medieval and Mod. Eur. Hist.. 10	
1-2. Medieval and Modern..... 10		143,144,145. Advanced U.S..... 9	
5-6. English History ..... 10		or	
57-58-59. United States		71-72-73. Ancient History ..... 9	
or		or	
143-144-145. United States	9	131. Europe Since 1870..... 5	
2. Preferential group: 10 additional		Electives ..... 1-5	
credits, of which 5 and not more		Minimum total..... 20	
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 ..... 5			
or			
130. Europe, 1814-1870			
or			
131. Europe Since 1870 Hist..... 9			
71-72-73 Ancient Hist..... 9			
Minimum total..... 48 or 49			

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

#### MAJOR IN ALL FIELDS IN HOME ECONOMICS

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

	Credits		Credits
4. Food Preparation ..... 3		111. Child Care ..... 3	
5. Food Selection and Preparation. 5		112-113. Costume Design and Const.. 10	
7. H.E. Survey ..... 2		116. Food Selection and Prep..... 5	
8. Clothing ..... 3		143. Home Furnishing ..... 3	
25. Textiles ..... 5		144-145. Household Management..... 4	
43. Home Sanitation ..... 3		148. Home Management House..... 2	
107-108. Dietetics ..... 10		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	Minor	Credits
25. Textiles ..... 5		25. Textiles ..... 5	
109. Elem. of Home Economics.... 5		112-113. Costume Des. and Construc. 10	
112-113. Costume Des. and Construc. 10		143. Home Furnishing ..... 3	
130-131. Com. Clothing Construc... 6		Home Econ. Electives..... 2	
133. Clothing, Costume Design..... 5		Minimum total..... 20	
135. Millinery ..... 3			
143. Home Furnishing ..... 3			
148. Home Management House..... 2			
Minimum total..... 39			

Prerequisites for either major or minor:

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

Students should have had at least one year of high school clothing.

The above shall be considered as comprising a teaching major or a minor.

#### JOURNALISM

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
51. News Writing .....	5	51. News Writing .....	5
101. Reporting .....	5	101. Reporting .....	5
120. Copy Reading .....	5	120. Copy Reading .....	5
150. Editorial Writing .....	3	150. Editorial Writing .....	3
		Electives .....	2
Elect 17 credits from any of the following:		Minimum total.....	20
115. 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. 160K. News. for Teachers....	2		
250. Research .....	3-5		
Minimum total.....			35

#### LATIN

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1-2. Elementary Greek.....	10	Twenty credits selected from the following:	
Twenty-five credits selected from the following:			
21. Cicero: De Senectute; Latin Literature (MacKall) .....	5	21. Cicero: De Senectute; Latin Literature (MacKall) .....	5
22. Catullus, Latin Lit. (MacKall)	5	22. Catullus, Latin Lit. (MacKall)	5
23. Vergil: Georgics and Bucolles; Latin Lit. (MacKall).....	5	23. Vergil: Georgics and Bucolles; Latin Lit. (MacKall).....	5
24. Sallust: Catiline and Jugurtha; Latin Lit. (MacKall).....	5	24. Sallust: Catiline and Jugurtha; Latin Lit. (MacKall).....	5
25. Ovid .....	5	25. Ovid .....	5
100. Livy .....	5	100. Livy .....	5
101. Horace .....	5	101. Horace .....	5
102. Tacitus .....	5	102. Tacitus .....	5
103. Plautus and Terence.....	5	103. Plautus and Terence.....	5
106. Syntax and Prose Comp.....	3	106. Syntax and Prose Comp.....	3
107. The Age of Cicero.....	3	107. The Age of Cicero.....	3
108. Vergil's Aeneid. Books VII-XII.	3	108. Vergil's Aeneid. Books VII-XII.	3
109. Pliny's Letters: Tacitus Germania.....	3	109. Pliny's Letters: Tacitus Germania.....	3
113. Roman Home Life and Religion	3	113. Roman Home Life and Religion	3
The senior Examination.....		An examination planned to test the student's knowledge of the Latin ordinarily taught in a standard four-year high school.	
Minimum total.....	35	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.

Courses 1-2, 3, 4, 5, 6 do not count toward a major or a minor.

## MATHEMATICS

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
4. Plane Trigonometry .....	5	4. Plane Trigonometry .....	5
5. College Algebra .....	5	5. College Algebra .....	5
6. Analytical Geometry .....	5	6. Analytical Geometry .....	5
107,108,109. Diff. and Integral Calc..	15	Electives in Mathematics.....	5
Electives in Mathematics.....	6		
Minimum total.....	36	Minimum total.....	20

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.

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
6. Music History .....	5	(In Theoretical and Applied Music for Music Majors.)	
13. Music Appreciation .....	5	109. Counterpoint .....	5
16. Ear Training and Melody Writ.	5	112. Music Forms .....	5
51. Elementary Harmony .....	5	117. Elementary Composition .....	5
53. Intermediate Harmony .....	5	18,19,20. Applied Music	}..... 9
56. School Music .....	5	68,69,70. Applied Music	
101. Advanced Harmony .....	5	118,119,120. Applied Music	
113,114. Music Education.....	4		
154,155,156. Music Supervision.....	6		
Minimum total.....	45	Minimum total.....	24

The following courses may be selected as a minor by any student whose major lies in some field other than music:

13. Music Appreciation .....	5
16. Ear Training and Melody Writ.	5
51. Elementary Harmony .....	5
53. Intermediate Harmony .....	5
56. School Music .....	5
113,114. Music Education .....	4
or	
Applied Music .....	6
Minimum total.....	29 or 31

## PHYSICAL EDUCATION FOR MEN

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
80. Intro. to Physical Education..	2	80. Intro. to Physical Education..	2
90. Personal and General Hygiene.	2	90. Personal and General Hygiene.	2
110. Athletic Tr. and First Aid....	2	110. Athletic Tr. and First Aid....	2
131. Kinesiology .....	3	141. Physical Education Methods....	3
132. Individual Gymnastics .....	3	142. Physical Education Methods....	3
133. Individual Gymnastics .....	3	143. Physical Education Methods....	3
141. Physical Education Methods....	3	Physical Education Electives.....	5
142. Physical Education Methods....	3	Two courses of which must be of	
143. Physical Education Methods....	3	the Ath. Coaching Methods.	
145. Principles of Physical Educ...	3		
150. Phys. Educ. and Administration	3	Minimum total.....	20
153. Meth. in Health Education....	2		
Physical Education Electives.....	3		
Minimum total.....	35		



## PHYSICAL EDUCATION FOR WOMEN

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
101-102. Survey of Gym.....	6	111. Rhythms and Dramatic Games..	3
111. Rhythms and Dramatic Games..	3	112. Elem. Athletic Games.....	3
112. Elem. Athletic Games.....	3	162-163-164. Meth. in P.E.....	15
118. Org. & Admin. of Playgrounds..	3		
122. Kinesiology .....	3	Minimum total.....	21
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. Campercraft .....	2		
Minimum total.....	48		

Required supplementary sciences:

Anatomy 101, 110-111-112 .....	6
Physiology 53-54-55 .....	15

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 145, 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

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1-2,3. General Physics } .....	15	1-2,3. General Physics } .....	15
4-5,6. General Physics } .....	5	4-5,6. General Physics } .....	5
101. Introd. to Mod. Theories.....	5	Physics Electives* .....	5
Physics Electives* (restricted).....	15	Minimum total.....	20
Minimum total.....	35		

\*Courses numbered below 200.

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

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1. Comparative Government .....	5	1. Comparative Government .....	5
101. Constitutional Govt. in the U.S. and in State of Washington..	2	101. Constitutional Govt. in the U.S. and in State of Washington..	2
151. American National Government..	5	151. American National Government..	5
161. Municipal Government .....	5	161. Municipal Government .....	5
Electives in Political Science.....	18	Electives .....	3
Minimum total.....	35	Minimum total.....	20

## PUBLIC SCHOOL ART

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

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
5,6,7. Drawing .....	9	Applied Arts.	
9,10,11. Art Structure.....	9	For Majors in Public School Art only.	
53. Art Structure.....	3	54,55. Art Structure.....	6
56,57,58. Drawing and Painting....	9	151. Illustration .....	3
160. Life .....	3	160. Stage Design .....	3
116. Illustration .....	3	105,106. Art Structure .....	6
101,102. Public School Art.....	4	103,104. Pottery, or	
126,127,128. History of Art.....	3	157,158. Metal Work .....	6
Minimum total.....	43	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

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
41. Phonetics .....	3	41. Phonetics .....	3
101,102,103. Composition and Conver.	9	101,102,103. Composition and Conver.	9
158,159. Advanced Syntax .....	4	158,159. Advanced Syntax .....	4
Educ. 160T. Teachers' Course in French .....	2	Educ. 160T. Teachers' Course in French .....	2
Nine or ten credits from any of the following:		Nine or ten credits from any of the following:	
34-35-36 or 134-135-136. General Romanic Literature .....	9	34-35-36 or 134-135-136. General Romanic Literature .....	9
118,119,120. Survey of French Lit..	9	118,119,120. Survey of French Lit..	9
*121,122,123. French Novel .....	9	*121,122,123. French Novel .....	9
*124,125,126. The Short Story.....	9	*124,125,126. The Short Story.....	9
*131,132,133. Lyric Poetry .....	6	*131,132,133. Lyric Poetry .....	6
*141,142,143. The French Drama....	9	*141,142,143. The French Drama....	9
*151,152,153. Hist. of the French. Lit. of the 19th Century.....	9	*151,152,153. Hist. of the French. Lit. of the 19th Century.....	9
154,155,156. Contemp. French. Lit..	9	154,155,156. Contemp. French. Lit..	9
*161,162,163. 18th Century Lit....	6	*161,162,163. 18th Century Lit....	6
*171,172,173. 17th Century Lit....	6	*171,172,173. 17th Century Lit....	6
Minimum total.....	27	Minimum total.....	27

\*Conducted in French.

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

## SPANISH

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
101,102,103. Adv. Composition .....	9	101,102,103. Adv. Composition .....	9
159. Advanced Syntax .....	3	159. Advanced Syntax .....	3
Educ. 160U. Teach. Course in Span..	2	Educ. 160U. Teach. Course in Span..	2
Nine credits from any of the following:		Nine credits from any of the following:	
34-35-36 or 134-135-136. General		34-35-36 or 134-135-136. General	
Romanic Literature .....	9	Romanic Literature .....	9
118,119,120. Survey of Span. Lit...	6	118,119,120. Survey of Span. Lit...	6
121,122,123. The Novel .....	9	121,122,123. The Novel .....	9
141,142,143. Spanish Drama .....	9	141,142,143. Spanish Drama .....	9
184,185,186. Spanish American Lit...	9	184,185,186. Spanish American Lit...	9
Minimum total.....	23	Minimum total.....	23

## SOCIOLOGY

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1. Introductory Sociology } or 150. General Sociology } 55. Human Ecology } or 61. The Small Town } or 65. The City } 66. Group Behaviour	..... 5        ..... 5  ..... 5	1. Introductory Sociology } or 150. General Sociology } 55. Human Ecology } or 61. The Small Town } or 65. The City } 66. Group Behaviour	..... 5        ..... 5  ..... 5
Electives from courses offered in the department after consultation regarding the special field of interest.....		Electives from courses offered in the department after consultation regarding the special field of interest.....	
20		10	
Minimum total.....	35	Minimum total.....	25

## ZOOLOGY

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1-2. Elements of Zoology.....	10	1-2. Elements of Zoology.....	10
or		or	
53-54-55. Physiology .....	15	53-54-55. Physiology .....	15
Zoology Electives .....	20 to 25	Zoology Electives .....	5-10
Minimum total.....	35	Minimum total.....	20

## COURSES OF STUDY

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

## 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.

### ADMISSION

Admission 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 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.

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.

### EXPENSES

Consult the General Information section (page 60) for tuition fees. 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, 195) 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.

#### ADVISORY SUGGESTIONS

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.

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.

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.

# Curricula

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## FIRST YEAR

Credits		Credits	
English †1-2. Composition.....	10	Music 13. Appreciation.....	5
70, 71, 72. Shakespeare .....	9	*Mod. Lang. †1-2-3. French or Germ..	15
64, 65, 66. Lit. Backgrounds.....	9	Psychology †1. General.....	5
*History 1-2. Medieval and Modern...	10	Lib. Arts †1. Intro. to Mod. Thought	5
5-6. Eng. Pol. and Social.....	10	Arch. 3. Appreciation.....	2
*Science. Bot., Geol. or Zool.....	10	*Latin †11, 13. Rom. Civ. and Lit....	10

## SECOND YEAR

Credits		Credits	
*Mod. Lang. †Fourth qr. of foreign language previously taken.....	5	*Pol. Sci. †1. Comparative Gov't....	5
Begin other lang. required by Library School .....	10	*Sociology †1. Introduction.....	5
*History †57-58-59. United States....	9	62. Play and Leisure Time.....	3
*Greek †15-16. Civilization.....	10	*Econ. †1. Introduction.....	5
Anthropology 51. Evol. of Civ.....	5	7. Geog. Background of Industry..	5
Zoology 16. Evolution .....	2	61. Social and Econ. Standards....	5
17. Eugenics .....	2	Lib. Arts. †11. Intro. to Fine Arts..	5
		*Oriental Studies 50, 51, 52. Orient. Lit. ....	10

## THIRD YEAR

Credits		Credits	
*Mod. Lang. Complete Library School Requirement .....	10	Oriental Studies 114, 115, 116. Hist. of Religion .....	9
Phil. †1, 2 or 3. Introduction.....	5	120. Prob. Eastern Asia and Pac... 5	
History. 125. Turkey and Near East..	5	English †134. Reformation in Eng... 3	
†130. Europe, 1814-1870 .....	5	†137. 19th Cent. Prose.....	3
†131. Europe Since 1870.....	5	†164, 165, 166. Am. Lit. from 1870	9
Pol. Sci. 122. Foreign Affairs.....	3	174, 175. 19th Cent. Poetry.....	6
123. Intern. Relations.....	3	*Sci. Phys. 1-2 or Chem. 1-2.....	10
156. European Gov. & Pol. Insts....	3	German †106, 108. Ger. Lit. in Tr... 5	
161, 162, 163. Governments .....	15	Rom. Lang. †118, 119, 120. Survey Fr. Lit. ....	9
†101. Constitutional Gov. in U.S. and Washington .....	2	†181, 182, 184. Ital. Lit. in Tr... 6	
		Scand. Lit. 109, 110, 111. Mod. Auth. 3	
		180, 181, 182. Recent Lit.....	6

## FOURTH YEAR

Autumn Quarter		Winter Quarter		Spring Quarter	
Credits		Credits		Credits	
175. Classif. & Cat....	4	184. Classif. & Cat....	3	191. Classif. & Cat....	4
177. Reference.....	2	185. Reference .....	2	193. Reference .....	2
178. Hist. of Books.....	2	187. Libr. Organization. 2		197. Libr. Admin. ....	2
179. Book Selection....	3	188. Book Selection....	2	196. Book Selection....	2
189. Children's work ...	3	*183. Lit. for Children.. 2		*194. Subj. Bibliography. 2	
		**180. Story Telling .... 1		*190. Lit. for Children.. 2	
		*181. Adv. Children's Wk. 1		*180. Story Telling..... 1	
		**182. School work..... 1		*189. Adv. Children's Wk. 1	
		*186. Practice .....	(3-5)	*182. School Work .... 1	
		102. Library Economy.. 2		195. Practice .....	3
				198. Special Lectures .. 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.

<sup>1</sup> 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.

<sup>2</sup> These requirements may be satisfied in high school or in college.

<sup>3</sup> The Library School requires 20 hours each of two modern foreign languages, French and German, in either high school or college.

<sup>4</sup> Students who have taken, or plan to take three or more years of ancient language may omit this requirement. Classical language requirement may be satisfied by either Latin or Greek.

\* Electives.

° Consult Instructor.

*Library School*

## FIRST YEAR

	<i>Credits</i>		<i>Credits</i>
Mod. Lang. ‡1, 2, 3. French or Ger.	15	Zoology ‡1, 2. Elementary	10
Astronomy 1. General	5	Lib. Arts. 1, Intro. to Mod. Thought	5
Psychology ‡1. Introduction	5	Chem. ‡1-2. General	10

## SECOND YEAR

	<i>Credits</i>		<i>Credits</i>
Mod. Lang. ‡Fourth quarter of foreign language previously taken	5	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, 2. General	10
		Music 13. Appreciation	5

## THIRD YEAR

	<i>Credits</i>		<i>Credits</i>
Mod. Lang. ‡Complete Library School Requirement	10	Physics ‡89-90. Physics of the Home	10
Botany ‡1, 2. General	10	History 130. Europe, 1814-1870	5
Lib. Arts. 11. Intro. to Fine Arts	5	131. Europe, since 1870	5
Pol. Sci. ‡101. Const. Gov. in U.S. and Washington	2	English 136, 137, 19th Cent. Prose	6

## 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 Departments of Instruction should be consulted.

<sup>‡</sup> The Library School requires 20 hours each of two modern foreign languages, French and German, in either high school or college.

## 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, 59, 60.

### 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 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

	<i>Credits</i>
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
*Physics (10 hours) or Chemistry (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 .....	20

#### 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 excep-

\*Students majoring in maritime commerce are required to take B.A. 40 (Ship Operation) and B.A. 63 (Navigation). This satisfies the requirement and they are therefore not required to take 10 hours of physics, chemistry, 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.

tions can be granted to students whose maturity and extended experience in economic affairs of a suitable nature make it just and reasonable. Proof of these experiences and qualifications will be passed on by the dean of the College of Business Administration and the committee on graduation.

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

#### MAJORS IN ECONOMICS IN THE COLLEGE OF LIBERAL ARTS

Students in the College of Liberal Arts choosing economics as their major, or in the School of Education choosing economics as their minor, should consult with the head of the department of economics or the professor in charge of advanced economics with regard to a proper selection of courses. A major in economics must include B.A. 1, 2, 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:

	<i>Credits</i>		<i>Credits</i>
B.A. 60. Labor in Industry.....	5	B.A. 129. Taxation .....	5
61. Social and Economic Standards of Living .....	3	131. Economics of Public Utilities... 5	
103. Money and Banking.....	5	159. Advanced Money and Banking... 5	
104. Economics of Transportation... 5		161. Labor Economics .....	5
106. Economics of Marketing and Advertising .....	5	162. European Labor Problems..... 5	
108. Risk and Risk Bearing.....	5	164. Land Economics and Real Est... 5	
121. Corporation Finance .....	5	165. Labor Legislation .....	3
122. Principles of Investment.....	5	166. Women in Industry.....	2
124. Public Finance .....	5	168. Development of Econ. Thought.. 5	
		171. Modern Trends and Criticism... 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 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 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 course 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 courses suggested for majors are in the following fields:

- |   |   |
|---|---|
| (a) Economics                                       | (g) Insurance                                   |
| (b) Accounting                                      | (h) Marketing, Merchandising<br>and Advertising |
| (c) Business Finance                                | (i) Transportation                              |
| (d) Commercial Teaching and<br>Secretarial Training | (j) Maritime Commerce                           |
| (e) Foreign Trade and Con-<br>sular Service         | (k) Labor                                       |
| (f) Management                                      | (l) Public Utilities                            |
|   | (m) Statistics                                  |

Students majoring in these fields must:

1. Satisfy the general requirements of the University and the College of Business Administration outlined on page 144.
2. Take certain required fundamental courses in the major field unless otherwise indicated below;
3. Take a minimum of 25 upper division credit hours in the major field;
4. Have their selection of courses approved by their major professor.

The following outlines of work in the several major fields are suggestive only. With the exception of the specifically required courses, arrangements may be made to suit individual needs. The electives should be chosen after consultation with the major professor.

#### (A) ECONOMICS

Students in the College of Business Administration selecting economics as their major must elect 25 hours from the following list:

<i>Credits</i>		<i>Credits</i>	
B.A. 01. Social and Economic Standards of Living .....	3	B.A. 131. Economics of Public Utilities ..	5
*103. Money and Banking .....	5	159. Advanced Money and Banking ..	5
104. Economics of Transportation .....	5	161. Labor Economics .....	5
*106. Economics of Marketing and Advertising .....	5	162. European Labor Problems .....	5
*108. Risk and Risk Bearing .....	5	164. Land Economics and Real Est. ..	5
121. Corporation Finance .....	5	165. Labor Legislation .....	3
122. Principles of Investment .....	5	166. Women in Industry .....	2
124. Public Finance .....	5	168. Development of Econ. Thought ..	5
129. Taxation .....	5	171. Modern Trends and Criticism ..	5
		181. Economics of Consumption .....	5

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

There are no specifically required courses other than those listed in the general requirements of the College (page 144).

## (B) ACCOUNTING

Three groups of courses are offered in accounting to fit the student for business positions. The first group consisting of B.A. 62, 63, and 64, required of all majors in business administration, is devised for the purpose of training the prospective business man in the fundamentals of accounting principles as well as in the interpretation of the ordinary accounts and financial statements. The second group consists of B.A. 110, 111 and 112, which are desirable pre-professional courses that prepare the student in the fundamentals of practical technique. The third group consists of B.A. 154, 155, 156, 157, 184 and 191 which are professional in nature, devised to fit the student for examination for the certificate as a public accountant and for general accounting practice. For students in other colleges a general survey course, B.A. 65, is offered.

A major is required to take 25 hours selected from upper division courses in accounting.

The following courses are suggested as electives:

	<i>Credits</i>		<i>Credits</i>
Math. 13. Elementary Statistics .....	5	B.A. 126. Commercial Credits .....	5
B.A. 59. Graphic and Tabular Analysis .....	5	130. Industrial Analysis and Control .....	5
102. Office Management .....	5	138. Market Analysis .....	5
107. Traffic Management .....	5	163. Industrial Management .....	5
120. Business Organization .....	5	169. Principles of Real Estate .....	5
121. Corporation Finance .....	5	172. Executive Technique .....	5
122. Principles of Investment .....	5	196. Research in Management .....	2-5
124. Public Finance .....	5	Law 187-8. Law of Private Corporations .....	6

## (C) BUSINESS FINANCE

A major in Business Finance:

(a) Should take Mathematics 11 and 13, either to satisfy the freshman requirement in mathematics, or as electives.

(b) Must take B.A. 103, Money and Banking (5), to be taken preferably either in the third quarter sophomore year or first quarter junior year, and B. A. 121, Corporation Finance (5).

(c) Must take at least 20 additional hours of upper division courses selected from the following list:

	<i>Credits</i>		<i>Credits</i>
B.A. 120. Business Organization .....	5	B.A. 159. Advanced Money and Banking .....	5
122. Principles of Investment .....	5	175. The Business Cycle .....	5
124. Public Finance .....	5	176. Investment Analysis .....	5
125. Banking Organization and Adm. .....	5	189. Bank Credit Administration .....	3
126. Commercial Credits .....	5	197. Research in Finance .....	5
127. Foreign Exchange .....	5	Law 137. Negotiable Instruments .....	3

(d) May select other courses from the following preferred list:

	<i>Credits</i>		<i>Credits</i>
B.A. 59. Graphic and Tabular Analysis .....	5	B.A. 108. Risk and Risk Bearing .....	5
104. Economics of Transportation .....	5	110,111,112. Advanced Accounting .....	15
106. Economics of Marketing and Advertising .....	5	181. Economics of Public Utilities .....	5
		164. Land Economics and Real Est. .....	5

## (D) COMMERCIAL TEACHING AND SECRETARIAL TRAINING

## 1. Secretarial Training

For students registered in the College of Business Administration, and majoring in secretarial training, the following schedule of courses should

be followed after the requirements of the first two years have been fulfilled:

	<i>Credits</i>		<i>Credits</i>
B.A. 81. Secretarial Training I.....	5	B.A. 120. Business Organization.....	5
82. Secretarial Training II.....	5	107. Employment Management.....	5
83. Office Training and Practice....	3	English (5 hours). In addition to work	
102. Office Management .....	5	required of all students in the College of	
115. Business Correspondence .....	5	Business Administration.	

## 2. Commercial Teaching

Following are the specific requirements for major and minor recommendations for the normal diploma in commercial teaching. Both major and minor requirements are based upon the general pre-business curriculum of the first two years of the College of Business Administration.

### (Major)

	<i>Credits</i>		<i>Credits</i>
Pre-Business (First two years).....	90	Edu. 119. Secondary Education.....	3
B.A. 81-82. Secretarial Training I, II....	10	140. Psychology of Methods.....	5
83. Office Training and Practice....	3	145. Practice Teaching .....	7½
102. Office Management .....	5	160D. Com. Teachers' Course; or	
103. Money and Banking.....	5	160DD. Shorthand and Typewriting... 5	
115. Business Correspondence .....	5	Approved Minor (Minimum).....	20
120. Business Organization .....	5	Approved Electives .....	14
		Edu. Electives .....	2½

### (Minor)

	<i>Credits</i>		<i>Credits</i>
Pre-Business (First two years).....	90	Edu. 145. Practice Teaching.....	7½
B.A. 81-82. Secretarial Training.....	10	160D. Com. Teachers' Course; or	
102. Office Management .....	5	160DD. Shorthand and Typewriting... 5	
115. Business Correspondence .....	5	Approved Major (Minimum).....	35
Edu. 119. Secondary Education .....	3	Approved Electives .....	12
140. Psychology of Methods.....	5	Edu. Electives .....	2½

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

	<i>Credits</i>		<i>Credits</i>
B.A. 15,16. Typewriting.....	0	B.A. 7. Geog. Background of Industry.. 5	
18,19. Shorthand .....	0	62,63,64. Principles of Accounting....15	
1,2. General Economics .....	10	81-82. Secretarial Training .....	10

Grades of B must be earned in 62, 63, 64, 81, 82.

## (E) FOREIGN TRADE AND CONSULAR SERVICE

### 1. Foreign Trade

A student majoring in foreign trade:

(a) Must take the following twenty-five hours of upper division courses:

	<i>Credits</i>		<i>Credits</i>
B.A. 117-118. Exporting and Importing..	10	B.A. 144. Trade of Europe.....	5
143. Trade of the Far and Near East 5		145. Trade of the Americas.....	5

(b) Should elect as many as possible of the following essential courses:

	<i>Credits</i>		<i>Credits</i>
B.A. 104. Economics of Transportation..	5	B.A. 149. Marine Insurance.....	5
119. Intro. to Water Transportation..	5	161. Rail and Marine Rates.....	5
127. Foreign Exchange .....	5	173. International Commercial Policies 5	
135. Marketing of Food Products....	5	195. Research in Foreign Trade.....	2-5
136. Market Analysis .....	5		

(c) Should choose some of the following recommended courses if he has time and inclination to pursue them:

<i>Credits</i>		<i>Credits</i>	
B.A. 113. Ports and Terminals.....	3	Pol. Sci. 121. Foreign Relations of the	
152. Shipping and Consular Reg.....	3	U.S. ....	3
159. Advanced Money and Banking... 5		122. Administration of American	
Law 165. Admiralty Law .....	3	Foreign Affairs .....	3
184-185. International Law.....	6	123. International Relations .....	3

(d) Should take some modern foreign language; twenty hours, if possible, or ten hours if he has had two years of language work in high school.

## 2. Consular and Government Trade Service

A student majoring in this department:

(a) Must take the following twenty-five hours of upper division courses:

<i>Credits</i>		<i>Credits</i>	
B.A. 117-118. Exporting and Importing..10		B.A. 144. Trade of Europe.....	5
143. Trade of the Far and Near East 5		145. Trade of the Americas.....	5

(b) Should elect as many as possible of the following essential courses:

<i>Credits</i>		<i>Credits</i>	
B.A. 127. Foreign Exchange .....	5	Pol. Sci. 121. Foreign Relations of the	
152. Shipping and Consular Reg.....	3	United States .....	3
173. Commercial Policies .....	5	122. Admin. of Foreign Affairs.....	3
Law 184-185. International Law.....	6	123. International Relations .....	3

(c) Should choose some of the following recommended courses if he has time and inclination to pursue them:

<i>Credits</i>		<i>Credits</i>	
B.A. 104. Economics of Transportation.. 5		Pol. Sci. 128. International Relations of	
113. Ports and Terminals.....	3	the Far East .....	3
119. Intro. to Water Transportation.. 5		Law. 165. Admiralty Law .....	3
136. Market Analysis .....	5	Hist. 1-2. Medieval and Mod. Europe...10	
149. Marine Insurance .....	5	75-76. History of China.....10	
151. Rail and Marine Rates.....	5	78-79. History of Japan.....10	
159. Adv. Money and Banking.....	5	157-158-159. Hist. of Amer. Diplomacy 6	

(d) Should take at least thirty hours of university work in a modern foreign language or twenty in case he has had two years of language work in high school.

## (F) MANAGEMENT

A management major:

(a) Is required to take Mathematics 11 and 13, either as fulfilling the requirement of the College of Business Administration in mathematics, or as electives, and

<i>Credits</i>		<i>Credits</i>	
B.A. 130. Industrial Analysis and Control 5		B.A. 172. Executive Technique .....	5
163. Industrial Management .....	5	M.E. 140. Time Study and Job Anal.... 5	
167. Employment Management .....	5		

(b) Should select electives from the following preferred list:

	<i>Credits</i>		<i>Credits</i>
B.A. 59. Graphic and Tabular Analysis.	5	B.A. 161. Labor Economics	5
102. Office Management	5	162. European Labor Problems	5
104. Economics of Transportation	5	168. Development of Econ. Thought	5
106. Economics of Marketing and Advertising	5	175. The Business Cycle	5
107. Traffic Management	5	176. Investment Analysis	5
120. Business Organization	5	196. Research in Management	2-5
121. Corporation Finance	5	Psych. 1. General Psychology	5
126. Commercial Credits	5	121. Applied Psychology	5
128. Human Waste in Industry	3	Chem. 1-2. Gen. Inorganic Chemistry	10
132. Management of Pub. Utilities	5	111. Quantitative Analysis	5
136. Market Analysis	5	121. Industrial Chemistry	5
139. Industrial Relations	3	122. Industrial Chemistry	5
154, 155. Cost Accounting	10	123. Industrial Chemistry	5
168. Managerial Accounting	5	Physics 1-2, 3. General Physics	15
		G.E. 7. Engineering Drawing	3
		11. Engineering Problems	3

#### (G) INSURANCE

(a) All majors in insurance must take B.A. 108, Risk and Risk Bearing (5).

(b) Majors should take:

	<i>Credits</i>		<i>Credits</i>
B.A. 141. Fire Insurance	5	B.A. 149. Marine Insurance	5
142. Life Insurance	5	170. Casualty Insurance	5

(c) It is advisable that a large proportion of the electives should be selected from the following list of courses:

	<i>Credits</i>		<i>Credits</i>
B.A. 67. Paper Work in Shipping	5	B.A. 145. Trade of the Americas	5
102. Office Management	5	152. Shipping and Consular Reg.	3
119. Intro. to Water Transportation	5	161. Labor Economics	5
121. Corporation Finance	5	166. Women in Industry	2
122. Principles of Investment	5	Law. 100. Agency	5
127. Foreign Exchange	5	103-104. Contracts	10
138. Sales Management	5	133. Insurance	3
143. Trade of the Far and Near East	5	Soc. 155. Social Legislation	3
144. Trade of Europe	5		

The courses selected should depend upon the field in insurance in which the student has particular interest—fire, life, marine or casualty.

#### (H) MARKETING, MERCHANDISING AND ADVERTISING

##### 1. Marketing

Students majoring in marketing:

(a) Must take B.A. 106, Economics of Marketing and Advertising (5), preferably in the third quarter of the sophomore year or the first quarter of the junior year, and

	<i>Credits</i>		<i>Credits</i>
B.A. 134. Marketing Problems	5	B.A. 136. Market Analysis	5
135. Marketing Northwest Products	5	140. The Co-operative Movement	5

(b) Should choose electives from the following preferred list:

	<i>Credits</i>		<i>Credits</i>
B.A. 59. Graphic and Tabular Anal.	5	B.A. 146. Retail Sales	5
103. Money and Banking	5	147. Retail Buying	5
104. Economics of Transportation	5	148. Store Organization	5
108. Risk and Risk Bearing	5	172. Executive Technique	5
117-118. Exporting and Importing	10	175. The Business Cycle	5
137. Advertising Campaigns	5	177. Business Forecasting	5
138. Sales Management	5		

## 2. Merchandising

Students majoring in merchandising:

(a) Must take B.A. 106, Economics of Marketing and Advertising (5), preferably in the third quarter of the sophomore year or the first quarter of the junior year, and

	<i>Credits</i>		<i>Credits</i>
B.A. 146. Retail Sales Problems.....	5	B.A. 148. Store Organization.....	5
147. Retail Buying Problems.....	5	188. Apprenticeship or Research.....	3-6

(b) Should choose electives from the following preferred list:

	<i>Credits</i>		<i>Credits</i>
B.A. 59. Graphic and Tabular Analysis..	5	Jour. 130. Fundamentals of Advertising..	5
103. Money and Banking.....	5	131. Display Advertising .....	5
109. Advertising Principles and Prac.	5	Psych. 1. General Psychology .....	5
126. Commercial Credits .....	5	121. Applied Psychology .....	5
136. Market Analysis .....	5	H.E. 25. Textiles .....	5
188. Sales Management .....	5	127. Non-Textiles .....	3

## 3. Advertising

Students majoring in advertising:

(a) Must take B.A. 106, Economics of Marketing and Advertising (5), preferably in the third quarter of the sophomore year or the first quarter of the junior year, and:

	<i>Credits</i>		<i>Credits</i>
B.A. 100. Advertising Principles and Practice .....	5	B.A. 137. Advertising Campaigns.....	5
136. Market Analysis .....	5	188. Sales Management .....	5

(b) Should choose electives from the following preferred list:

	<i>Credits</i>		<i>Credits</i>
B.A. 59. Graphic and Tabular Analysis..	5	Jour. 131. Display Advertising.....	5
103. Money and Banking.....	5	133. Advertising Typography .....	5
134. Marketing Problems .....	5	135. Publicity .....	2
135. Marketing Northwest Products..	5	P.S.&D. 5,6,7. Drawing .....	9
140. The Co-operative Movement.....	5	9,10,11. Art Structure .....	9
Eng. 51. Advanced Composition .....	2	113. Commercial Art .....	2
Jour. 51. News Writing.....	5	Psych. 1. General Psychology.....	5
130. Fundamentals of Advertising....	5	121. Applied Psychology .....	5

## (I) TRANSPORTATION

The major should:

(a) Have Mathematics 11 and 13, or an equivalent giving a fundamental knowledge of statistics.

(b) Elect as many as possible of the following essential courses:

	<i>Credits</i>		<i>Credits</i>
B.A. 67. Paper Work in Shipping.....	5	B.A. 113. Ports and Terminals.....	3
104. Economics of Transportation....	5	150. Railroad Finance and Admin... 5	
107. Traffic Management .....	5	151. Rail and Marine Rates.....	5
119. Intro. to Water Transportation..	5	152. Shipping and Consular Reg.....	3



(c) Choose other electives from the following preferred list:

	<i>Credits</i>		<i>Credits</i>
B.A. 49. Ship Operation.....	5	B.A. 162. European Labor Problems....	5
53. Navigation .....	5	103. Industrial Management .....	5
59. Graphic and Tabular Analysis..	5	107. Employment Management .....	5
103. Money and Banking.....	5	175. The Business Cycle.....	5
100. Economics of Marketing and		177. Business Forecasting .....	5
Advertising .....	5	195. Research in Transportation and	
108. Risk and Risk Bearing.....	5	Foreign Trade .....	2-5
120. Business Organization .....	5	C.B. 120. Transportation Engineering....	2
121. Corporation Finance .....	5	121. Transportation Engineering .....	4
122. Principles of Investment.....	5	122. Transportation Engineering .....	3
130. Industrial Analysis and Control.	5	124. Highways .....	4
131. Economics of Public Utilities....	5	125. Railways .....	3
132. Management of Public Util.....	5	127. Yards and Terminals.....	3
133. Control of Public Utilities.....	5	Aero. 101-102. Aerodynamics .....	6
143. Trade of the Far and Near East	5	111, 112. Aeronautical Design.....	6
144. Trade of Europe.....	5	121. Airships .....	3
145. Trade of the Americas.....	5	141, 142. Aerial Propellers.....	6
149. Marine Insurance .....	5	161. Aerial Transportation .....	3
161. Labor Economics .....	5		

#### (J) MARITIME COMMERCE

(a) The major is required to take 25 hours selected from upper division courses in the following list. The lower division courses in the list will give the desired preliminary training. The course in Introduction to Water Transportation should be taken first. The preferred order of courses in the preliminary training is B.A. 119, 49, 42, 67, 53, 104.

(b) Electives for major students:

	<i>Credits</i>		<i>Credits</i>
B.A. 49. Ship Operation.....	5	B.A. 119. Intro. to Water Transp.....	5
42. Wharf Management .....	5	127. Foreign Exchange .....	5
53. Navigation .....	5	149. Marine Insurance .....	5
67. Paper Work in Shipping.....	5	151. Rail and Marine Rates.....	5
104. Economics of Transportation....	5	152. Shipping and Consular Reg.....	3
107. Traffic Management .....	5	105. Research .....	5
113. Ports and Terminals.....	3		

<sup>1</sup>Preferably during the first year.

<sup>2</sup>Preferably during the second year.

#### (K) LABOR

The major (a) Must take:

	<i>Credits</i>		<i>Credits</i>
B.A. 161. Labor Economics.....	5	B.A. 165. Labor Legislation .....	3
162. European Labor Problems.....	5	167. Employment Management .....	5

(b) Should elect from the following preferred list:

	<i>Credits</i>		<i>Credits</i>
B.A. 61. Social and Economic Standards		Math. 13. Statistical Methods .....	5
of Living .....	3	Zool. 16. Evolution .....	2
104. Economics and Transportation..	5	17. Eugenics .....	2
124. Public Finance .....	5	Hist. 5-6. Eng. Pol. & Soc. Hist.....	10
128. Human Waste in Industry.....	3	8. U.S. Westward Movement to	
139. Industrial Relations .....	3	1812.....	2
106. Women in Industry.....	2	9. U.S. Westward Movement	
168. Development of Econ. Thought..	5	1812-1860.....	2
171. Modern Trends and Criticism..	5	10. Agrarian Crusade in the U.S.	
175. The Business Cycle.....	5	1860-1924.....	2
177. Business Forecasting .....	5	145. U.S., 1846-1860 .....	3
181. Economics of Consumption.....	5	147. U.S. Civil War.....	3
Psych. 1. General Psychology.....	5	148. U.S. Reconstruction .....	5
121. Applied Psychology .....	5	149. U.S. National Development....	5
Soc. 1. Introduction .....	5	Eng. 161, 162, 163. American Culture	
66. Group Behavior .....	5	from 1620.....	9
67. Urban Attitudes .....	5	Phil. 2. Introduction to Social Ethics...	5
68. National Traits .....	5	3. Introduction to Ethics.....	5
131. Social Statistics .....	5		

## (L) PUBLIC UTILITIES

A typical arrangement of courses for a student majoring in public utilities would be as follows:

(a) Mathematics 11 and 13, either as fulfilling the requirement of the College of Business Administration in mathematics, or as electives.

(b) The following essential courses if possible:

	<i>Credits</i>		<i>Credits</i>
B.A. 131. Econ. of Public Utilities.....	5	B.A. 133. Control of Public Utilities....	5
132. Management of Public Utilities.	5		

(c) Electives from the following preferred list:

	<i>Credits</i>		<i>Credits</i>
B.A. 59. Graphic and Tabular Analysis..	5	B.A. 124. Public Finance .....	5
104. Economics of Transportation....	5	130. Industrial Analysis and Control.	5
106. Economics of Marketing and		134. Market Organization .....	5
Advertising.....	5	136. Market Analysis .....	5
110,111,112. Advanced Accounting.....	15	138. Sales Management .....	5
120. Business Organization .....	5	158. Managerial Accounting .....	5
121. Corporation Finance .....	5	167. Employment Management .....	5
122. Principles of Investment.....	5	170. Investment Analysis .....	5

## (M) STATISTICS

The major (a) Must take:

	<i>Credits</i>		<i>Credits</i>
B.A. 59. Graphic and Tabular Analysis.	5	Math. 11. Theory of Investments.....	5
175. The Business Cycle .....	5	13. Elem. of Statistical Method.....	5
177. Business Forecasting .....	5	G.E. 1. Engineering Drawing .....	3

(b) Should elect as many as possible of the following essential courses:

	<i>Credits</i>		<i>Credits</i>
B.A. 103. Money and Banking.....	5	B.A. 108. Risk and Risk Bearing.....	5
104. Economics of Transportation....	5	120. Business Organization .....	5
106. Econ. of Marketing and Adv....	5		

(c) May elect other courses from the following preferred list:

	<i>Credits</i>		<i>Credits</i>
B.A. 110,111,112. Adv. Accounting.....	15	B.A. 154, 155. Cost Accounting.....	10
121. Corporation Finance .....	5	158. Managerial Accounting .....	5
124. Public Finance .....	5	172. Executive Technique .....	5
130. Industrial Analysis and Control.	5	Soc. 131. Social Statistics.....	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 or consultation fees are asked in all courses. The service rendered is necessary and valuable. With the exception of three secretarial training courses, B.A. 81, 82, 83, at \$5, this fee has been fixed at \$.50 a course. A fee of \$10 will be asked for any one quarter of instruction in shorthand or typewriting, as these are not a part of the regular curriculum and must finance themselves.

*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, a 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 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 Science and Physical Education*—The University requirements in military science, physical education and hygiene are satisfied as follows:

*Men Students*—Freshmen and sophomores, five hours of military 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.

*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 section.

## SCHOOL OF JOURNALISM

### THE SCHOOL AND ITS EQUIPMENT

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

The professional courses in the School of Journalism and those prescribed in the Colleges of Liberal Arts and Science are planned with two aims in view—to offer instruction and practice in the fundamentals of newspaper work in both the business and editorial sides, and to provide such studies as are best adapted to give the broad training necessary for successful pursuit of journalism as a profession. In the first the courses include reporting, copy reading, editorial writing, magazine 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*—Four 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*—On successful completion of 90 plus 10 credits of prescribed and elective work at the University of Washington, or an equivalent amount from another institution of accredited standing, students are granted upper division standing, which admits to the School of Journalism. (See College of Liberal Arts section, page 98.) 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 toward purchase of student materials, community typewriters—of which the school has fifteen—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 1929-30 the maximum laboratory fees in journalism, in addition to the regular University fees, will not be more than \$2.50 a quarter for any student, regardless of the number of courses taken.

For information on other general University fees and expenses, applicable to all students, see page 60.

*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. Registration of pre-journalism majors is held in the dean's office. 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 159) 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.

*Minor in Journalism*—Students wishing to minor in journalism must include the following courses in their minor: Journalism 51 (News Writ-

ing), 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. Typewriting is required for graduation. Prospective students may save themselves much time, however, by learning typing before entering the University. Tests are given quarterly. Those passing the tests successfully are excused from the University course.

*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 science. Fifty of these credits must be in journalism, with an average class grade of 86 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 science and physical education must be met in addition to those noted below.

# General Information

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## FIRST YEAR

	Credits		Credits
Arch. 3. Appreciation.....	2	Jour. 1. †Journ. as a Profession.....	3
Econ. 1. †Gen. Econ.....	5	Lib. Arts 1. †Intro. to Mod. Thought.....	5
15. †Typewriting.....	0	Latin 11. †Roman Civ. <sup>1</sup> .....	5
English 1. †Comp.....	5	†Mil. Sci. or Phys. Ed.....	5
64, 65, 66. †Lit. Backgrounds.....	9	Pol. Sci. 1. †Comparative Gov't.....	5
Greek 11. †Greek Civ. <sup>1</sup> .....	5	†Science <sup>2</sup> .....	10
Hist. 5-6. †Eng. Pol. & Soc. Hist....	10	Soc. 1. †Intro. Sociology.....	5

## 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. Stand'ds of Liv. 5	5	†Mil. Sci. or Phys. Ed.....	5
106. †Econ. of Mkts. and Adv.....	5	Music 13. Appreciation.....	5
18, 19. †Shorthand <sup>3</sup> .....	0	6. Hist. of Music.....	5
Eng. 67, 68, 69. †Great Am. Writers..	6	Phil. 5. †Intro. to Logic.....	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

## THIRD YEAR

	Credits		Credits
Arch. 101-102-103. Hist. of Arch.....	6	Jour. 130 †Fundamentals of Adv.....	5
Astronomy 1. Gen. Astronomy.....	5	131. †Display Advertising.....	5
Dram. Art 101-102-03. Play Acting... 9	9	133. Adv. Typography.....	5
111, 112, 113. Play Writing.....	15	136. †Comparative Journalism.....	3
Econ. 10.. Econ. of Transportation... 5	5	138. †History of Journalism.....	5
106. Business Organization.....	5	140. †Business Office <sup>4</sup> .....	5
138. Sales Management.....	5	Ori. Studies 114, 115, 116. Hist of Religion.....	9
English 40. †Essentials of Speaking... 5	5	Phil. 101-102-103. Hist of Phil.....	9
70, 71. †Shakespeare.....	6	Pol. Sci. 111. Hist. of Pol. Theory... 3	3
97, 98, 99. The Bible as Lit.....	6	112. Amer. Political Theory.....	3
104, 105, 106. †Contemp. Lit.....	9	113. Contemp. Political Thought.... 3	3
137. Prose of the Victorian Per.... 3	3	121. For. Relations of the U.S.... 3	3
Foreign Language.....	10	122. †American Foreign Affairs.... 3	3
History 130. Europe, 1814-1870.... 5	5	123. †International Relations.....	3
131. †Europe Since 1870.....	5	Psychology 100. Mental Tests.....	3
147. Civil War Period.....	3	111. Hist. of Psych.....	2
148. Reconstruction Period.....	3	126. Abnormal Psych.....	3
149. National Development.....	3	Romanic Lang. and Lit. 118, 119, 120. Survey of French Lit.....	9
Journalism 101. †Reporting.....	5	Science.....	9
104. †Newspaper Administration.....	2	Sociology 130. The Social Survey... 5	5
115. †Elements of Publishing.....	3	131. Social Statistics.....	6
120. †Copy Reading.....	5		
125. †Prin. of H.S. Journ. <sup>5</sup> .....	5		

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Journalism 140, to be taken in the third year, may be substituted for this requirement.

<sup>4</sup> Philosophy 1 or Philosophy 3 may be substituted for this requirement.

<sup>5</sup> Journalism 125, 5 credits, plus Economics 18 and 10, no credit, may be substituted for Journalism 140.



## FOURTH YEAR

	Credits		Credits
Econ. 54. ‡ Business Law.....	3	Pol. Sci. 152. ‡Amer. Pol. Parties.....	5
55, 56. †Business Law .....	6	161. Municipal Government .....	5
121. Corporation Finance .....	5	162. Municipal Administration .....	5
150. Railroad Finance .....	5	160K. News Writ. for Teachers.....	2
161. Labor Econ. ....	5	English 161, 162, 163. Hist of	
168. †Devel. of Econ. Thought.....	5	American Culture.....	9
198. †Marketing and Adv.....	5	164, 165, 166. †Am. Lit. Since 1870	9
Education 119. Secondary Educ.....	3	174, 175. 19th Cent. Eng. Poetry...	6
161. Hist. of Educ. ....	5	Foreign Language .....	10
163. American Educ. ....	5	History 153. †Pacific Rim.....	3
Journ. 135. †Publicity.....	2	163-164-165. Northwest Hist.....	6
142. †Specialized Reporting .....	3	163. State Government .....	5
145. †Law of the Press.....	3	Science .....	15
150. †Editorial Writing .....	3	Sociology 155. Soc. Legislation.....	3
160. Trade Journalism .....	5	156. Criminology .....	3
171-172. Mag. Feature Writing....	4	201. †Public Opinion <sup>a</sup> .....	2
173, 174-175. Short Story Writing...	9		

*Advertising*—Students expecting to make advertising a profession should elect the following courses from those scheduled above: Architecture 112, 113 (Freehand Drawing); Economics 106 (Economics of Markets); Economics 175 (Business Statistics); Economics 145 (Trade of the Americas); Journalism 130 (Fundamentals of Advertising); Journalism 131 (Display Advertising); Journalism 133 (Advertising Typography); Journalism 160 (Trade Journalism). All these will be found of particular 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 101, 102, 103 (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).

## COURSES OF STUDY

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

<sup>a</sup> 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 164) 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 hydro-electric power plants, electric transmission and distribution systems and the development of the state's vast water power resources, offer unexcelled opportunities for the study of power engineering. Airplane factories, flying fields, iron and steel works, wood-pulp and lumber mills, ship building yards, docks, waterways, steam and electric railways, bridges, buildings, and a great variety of industrial plants, give students in all fields abundant opportunities to study and observe the application of fundamental engineering principles.

### GENERAL ENGINEERING

The freshman work is identical for all the curricula in the Colleges of Engineering and Mines and is given by the department of general engineering. The aim is to give the student an early contact with engineering situations in which he can make application of the fundamentals of mathematics and physics, and to assist him in the formation of good habits of work and study so that he may obtain maximum return on his investment in an engineering education. To assist in realizing these ideas individual work is insisted upon in all courses and the student is given much personal coaching by his instructors. As a part of the courses the various fields of engineering are discussed enabling the student to make a more intelligent choice of his particular line of work. The choice is made at the beginning of his sophomore year. Engineering problems (G.E. 11, 12, 13) 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 student. This phase of the work is done by the freshman advisor 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, planned to be ready for operation in the autumn of the year 1929, 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 process 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.

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 and power plants; structural materials; heating and ventilation; gas engineering; refrigeration; automobiles; commercial engineering; naval architecture and marine engineering.

## ENGINEERING LABORATORIES

For description of laboratories, see page 40.

## 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, 59, 60.

## 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 bachelor of science (B.S.) is scheduled under commercial engineering, and should be followed by a year of graduate work which, under the university regulations for advanced degrees, leads to the degree of master of science (M.S.).

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

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

*Advanced Degrees*—The degrees of master of science in aeronautical engineering (M.S. in A.E.), master of science in civil engineering (M.S. in C.E.), master of science in electrical engineering (M.S. in E.E.), master of science in mechanical engineering (M.S. in M.E.), and master of science in chemical engineering (M.S. in Ch.E.), respectively, will be conferred on graduates of this college, or other engineering colleges of recognized standing who complete a year (45 credit hours), of 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 FIRST YEAR IN ALL DEPARTMENTS

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Trig.—Math. 51 .....	4	Alg.—Math. 52 .....	4	Anal. Geom.—Math. 53. 4	
Engr. Prob.—G.E. 11... 3		Engr. Prob.—G.E. 12... 3		Engr. Prob.—G.E. 13... 3	
Gen. Chem. 1 or 21... 5		Gen. Chem. 2 or 22... 5		Gen. Chem. 23..... 5	
Drawing—G.E. 1 .....	3	Drawing—G.E. 2 .....	3	Surveying—G.E. 21 ... 3	
Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%	

## IN AERONAUTICAL ENGINEERING

## FIRST YEAR

(The same for all curricula. See above.)

## SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 97 .....	4	Physics 98 .....	5	Physics 99 .....	5
Math. 61 .....	3	Math. 62 .....	3	Math. 63 .....	3
M.E. 81 .....	3	C.E. 131 .....	3	C.E. 132 .....	3
M.E. 82 .....	3	Pol. Sci. 101..... 2		B.A. 3 .....	3
Shop 52 .....	1	Shop 53 and 54..... 2		Shop 55 .....	1
Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%		Mil. Sci. or Phys. Ed.. 1%	

## THIRD YEAR

Aerodynamics—A.E. 101. 3	Propulsion—A.E. 141 ... 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. An.—C.E. 171... 3	Str. An.—C.E. 172... 3	Str. An.—C.E. 173... 3
Mach. Des.—M.E. 111... 3	Mach. Des.—M.E. 112... 3	Str. Mat.—M.E. 167... 3
Engl. 100 ..... 3	Non-Fer. Met.—Shop 104 1	

## FOURTH YEAR

Adv. Ae. Dyn.—A.E. 102 3	Aer. Des.—A.E. 112... 3	Airships—A.E. 121 ... 3
Adv. Str. An.—C.E. 181... 3	Gas. Eng.—M.E. 198... 3	Performance—A.E. 113... 3
Thermo-Dyn.—M.E. 183 5	English 102 ..... 3	Air Transp.—A.E. 161. 3
Electives ..... 5	Electives ..... 7	Electives ..... 7

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

The following electives in the respective divisions of Aeronautical Engineering are offered, subject to sufficient call:

## Design

	<i>Credits</i>
Advanced Propulsion—A.E. 142 .....	3
Advanced Transportation—A.E. 162 .....	3
Special Aeronautical Designs—A.E. 151 .....	3
Structural Design—C.E. 175-176-177 .....	11
Advanced Structural Analysis—C.E. 182 .....	3
Advanced Structural Design—C.E. 185 .....	4

## Transportation

Aerial Navigation—A.E. 171 .....	3
Survey Office Practice—C.E. 58 .....	3
Transportation Engineering—C.E. 120 .....	2
Transportation Engineering—C.E. 121 .....	4
Illumination—E.E. 141 .....	3
Radio Communication—E.E. 181 .....	5
Business Law—B.A. 54 .....	3

## Research

Modern Languages (German, French) .....	8
Chemistry of Varnishes, Preservatives, etc.—Chem. 118 .....	3
Industrial Chemistry—Chem. 119 .....	3
Theory of Gases—Phys. 226 .....	3
Differential Equations—Math. 114-115 .....	6
Metallurgy 162 .....	2
Research . . . . .	2-5

## IN CHEMICAL ENGINEERING

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

## FIRST YEAR

(The same for all curricula. See above.)

## SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 97 .....	5	Physics 98 .....	5	Physics 99 .....	5
Dif. Cal.—Math. 61... 3		Int. Cal.—Math. 62... 3		Qual. Chem. 101..... 5	
Quant. Chem. 109..... 5		Quant. Chem. 110..... 5		Chem. Tech.—Chem. 52. 3	
Pol. Science 101..... 2		Mech.—M.E. 81 ..... 3		Steam Eng.—M.E. 82... 3	
Mil. Sci. or Phys. Ed.. 1% 1		Mil. Sci. or Phys. Ed.. 1% 1		Mil. Sci. or Phys. Ed.. 1% 1	

## THIRD YEAR

Ind. Chem. 121..... 5	Indus. Chem. 122..... 5	Indus. Chem. 123..... 5
Steam Lab.—M.E. 83... 3	Org. Chem. 128..... 5	Org. Chem. 129..... 5
Dir. Cur.—E.E. 101... 4	Mechanics—C.E. 181... 3	Alt. Cur.—E.E. 121.... 4
Dir. Cur. Lab.—E.E. 102 .. 2	English 100 ..... 3	Alt. Cur. Lab.—E.E. 122. 2
Shop 55 ..... 1		

## College of Engineering

## FOURTH YEAR

Phys. Chem. 181..... 5	Phys. Chem. 182..... 5	Chem. Eng. 173..... 3
Chem. Engr. 171..... 5	Chem. Engr. 172..... 5	Electives .....13
Chem. Eng. Thesis 176. 2	Chem. Eng. Thesis 177.. 3	
Mach. Des.—M.E. 111.. 3	Electives ..... 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.

## FIRST YEAR

(The same for all curricula. See above.)

## SECOND YEAR

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	Econ.—B.A. 3 .....	3
St. Eng.—M.E. 82.... 3		Mech.—C.E. 131 .....	3	Mech.—C.E. 132 .....	3
Curves & Ethw.—C.E. 57 4		Surv. Off. Prac.—C.E. 58 2		Adv. Surv.—C.E. 59.... 4	
Mil. Sci. or Phys. Ed.. 1%		Pol. Sci. 101..... 2		Mil. Sci. or Phys. Ed.. 1%	
		Mil. Sci. or Phys. Ed.. 1%			

## THIRD YEAR

Hydr.—C.E. 142 .....	5	Hydr. Engr.—C.E. 143. 5	Sanit. Engr.—C.E. 150. 3
St. An.—R.C.—C.E. 171 3		Str. An.—St. I.—C.E. 172. 3	Str. Anal.—Tmbr.—
Maths.—Conc.—C.E. 162 3		Maths. Tmbr. & St 1—	C.E. 173 .....
Bus. Law—B.A. 54.... 3		C.E. 163 .....	3
Trans. Eng.—C.E. 120.. 2		English 100 .....	3
		Plant Des.—C.E. 100... 2	Dir. Cur.—B.E. 101-2.. 6
			Trans. Engr.—C.E. 121. 4

## FOURTH YEAR

Str. Des.—R.C.—C.E. 175 4	Ind. Chem. 119..... 3	Engr. Rel.—C.E. 199... 3
Reclam.—C.E. 157 .... 3	English ..... 3	Geology 105 ..... 5
Trans. Engr.—C.E. 123. 3	Elective .....10	Electives ..... 7
Elective .....	6	

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

The following electives in the respective divisions of civil engineering are offered, subject to sufficient call:

## Hydraulic and Sanitary Division

	Credits
Hydraulic Machinery—C.E. 146.....	3
Hydraulic Power—C.E. 147.....	3
Water Supply Problems—C.E. 155.....	3
Sewerage and Sewage Treatment—C.E. 158.....	3
Drainage, Waterways and Flood Control—C.E. 159.....	2

## Structural Division

Structural Design—R.C.—C.E. 175.....	4
Structural Design—Timber—C.E. 177.....	3
Advanced Structural Anal.—C.E. 181-2-3.....	3 (each)
Advanced Structural Design—C.E. 185-6-7.....	4 (each)

## Transportation Division

Highways—C.E. 124 .....	4
Railways—C.E. 125 .....	3
Yards and Terminals—C.E. 127.....	3
Transportation Administration—C.E. 128.....	3

## IN ELECTRICAL ENGINEERING

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

## FIRST YEAR

(The same for all curricula. See above.)

## SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 97 .....	5	Physics 98 .....	5	Physics 99 .....	5
Dif. Calc.—Math. 61...	3	Int. Calc.—Math. 62...	3	Int. Calc.—Math. 63...	3
Mechanism—M.E. 81 ..	3	El. Steam Lab.—M.E. 83	3	Mechanics—C.E. 131 ..	3
El. Steam—M.E. 82...	3	Pol. Science 101.....	2	Economics—B.A. 3 ....	3
Shop 53 .....	1	Shop 54 .....	1	Shop 55 .....	1
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½

## THIRD YEAR

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	English 102 .....	3
English 100 .....	3	Mach. Des.—M.E. 111..	3	Mach. Des.—M.E. 112..	3
Materials—M.E. 167 ...	3				

## FOURTH YEAR

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	Mach. Des.—E.E. 152..	3	Thesis or electives.....	4
Physics 154 .....	3	Thesis or electives.....	4	Electives .....	10
Electives .....	4	Electives .....	5		

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

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

	<i>Credits</i>
Electrical Communication—E.E. 131.....	4
Telephone Transmission—E.E. 132.....	3
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, 194.....	4 (each)

## IN MECHANICAL ENGINEERING

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

## FIRST YEAR

(The same for all curricula. See above.)

## SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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	Gen. Econ.—B.A. 3 ....	3
El. Steam—M.E. 82...	3	Pol. Sci. 101.....	2	Mechanics—C.E. 131 ..	3
Shop 53 .....	1	Shop 54 .....	1	Shop 55 .....	1
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½



## THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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 100 .....	3
Exp. Engr.—M.E. 151....	3	Exp. Engr.—M.E. 152..	3	Exp. Engr.—M.E. 153..	3
Eng. & Boll.—M.E. 123	3	Eng. & Boll.—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		

## FOURTH YEAR

Bus. Law—B.A. 54....	3	Gas Eng.—M.E. 108... 3	Power Plants—M.E. 184 3	
Thermo. & Ref.—M.E.183	5	Heat. & Vent.—M.E.182 3	St. Turb.—M.E. 179... 3	
Mach. Des.—M.E. 118..	3	Mach. Des.—M.E. 114.. 3	Mach.Des.—M.E.115or190 3	
English 102 .....	3	Engr. Mat.—M.E. 167.. 3	Thesis—M.E. 195 .... 3	
Electives .....	3	Electives .....	5	
			Electives .....	4

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

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

	<i>Credits</i>
Time Study and Job Analysis—M.E. 140.....	5
Naval Architecture—M.E. 185, 186, 187.....	3 (each)
Ship Design—M.E. 188 and 189.....	2 (each)
Marine Engineering—M.E. 190 .....	3
Research—M.E. 191, 192 and 193.....	2 to 5 (each)
Seminar—M.E. 194 .....	2

## IN NAVAL ARCHITECTURE AND MARINE ENGINEERING

Leading to the degree of Bachelor of Science in Naval Architecture and Marine Engineering.

## FIRST YEAR

(The same for all curricula. See above.)

## SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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	Gen. Econ.—B.A. 3....	3
El. Steam—M.E. 82... 3		Pol. Sci. 101.....	2	Mechanics—C.E. 131 ...	3
Shop 53 .....	1	Shop 54 .....	1	Shop 55 .....	1
Mil. Sci. or Phys. Ed.. 1½		Mil. Sci. or Phys. Ed.. 1½		Mil. Sci. or Phys. Ed.. 1½	

## THIRD YEAR

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	Exp. Engr.—M.E. 153..	3
Exp. Engr.—M.E. 151..	3	Exp. Engr.—M.E. 152..	3	Nav. Arch.—M.E. 187..	3
Nav. Arch.—M.E. 185..	3	Nav. Arch.—M.E. 186..	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		

## FOURTH YEAR

Bus. Law—B.A. 54....	3	Gas Eng.—M.E. 198... 3	Mar. Eng.—M.E. 190... 3
Thermo. & Ref.—M.E.183.	5	Heat. & Vent.—M.E. 182. 3	St. Turb.—M.E. 179... 3
Ship Des.—M.E. 188... 2		Ship Des.—M.E. 189... 2	Mach. Des.—M.E. 115. 3
English 100 .....	3	Engr. Mat.—M.E. 167.. 3	Thesis—M.E. 195 .... 4
Electives .....	3	Electives .....	5

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

## IN COMMERCIAL ENGINEERING

Leading to the degree of Bachelor of Science.

The student must register in the aeronautical, chemical, civil, electrical of mechanical department of the College of Engineering.

	<i>Credits</i>
Business Administration 3, 60, 62, 63, 54, 55, 106.....	29
Chemistry 1-2, or 21-22, and 23.....	15
Civil Engineering 131, 132, 142.....	11
Electrical Engineering 101, 102 and 121, 122 or 161, 162.....	12
Engineering Shops 115 .....	3
English 100, 102 .....	6
General Engineering 1, 2, 11, 12, 13, 21.....	18
Mathematics 51, 52, 53, 61, 62, 63.....	21
Mechanical Engineering 81, 82, 83, 111, 112.....	15
Military Science or Physical Education.....	10
Physics 97, 98, 99.....	15
Political Science 101 .....	2
Technical Electives (department in which student is registered).....	21
General Electives .....	20
Total.....	198

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 48.

## COLLEGE OF FINE ARTS

### GENERAL INFORMATION

This college comprises the departments of architecture, music, painting, sculpture, design and dramatic art. 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. The department of dramatic art offers major courses in the study of the drama and dramatic interpretation, leading to the degrees of bachelor of arts in dramatic art and bachelor of fine arts with a major in dramatic art.

*Normal Diploma*—In addition to their bachelor 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 either voice, piano, violoncello or organ.

At the beginning of the fall term, a private tryout will be held before the committee of judges, which will be composed of three Mu Phi Epsilon members and two members of the faculty of the music department. The award will be made according to talent, personality, 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 the scholarship award, if won by (a) a senior, shall be paid back three years after the time of the award. (b) A junior, shall be paid back four years after the time of the award. (c) A sophomore, shall be paid back five years after the time of the award, in order to perpetuate and establish a permanent scholarship fund.

(3) 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.

The Ladies' Musical Club of Seattle, for the year 1929-30, 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, 59, 60.

#### SPECIAL REQUIREMENTS FOR DEPARTMENT 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, twenty hours of which are provided in the curriculum. The romance language, particularly French, should be chosen, though freedom of choice is allowed.

*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 de-

sign 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 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.

#### SPECIAL REQUIREMENTS FOR DEPARTMENT OF MUSIC

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 smaller sonatas of Haydn, Mozart and Beethoven, and easier compositions representative of the best literature for the piano.

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 Registrar 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 piano study, (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 section, page 214.

### 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

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Music 9 Sight Singing..	5	Music 13 Apprec.....	5	Music 6 History.....	5
18 Applied .....	3	19 Applied .....	3	20 Applied .....	3
L.A. 11 or Elect.....	5	English 2 .....	3	English 3 .....	3
English 1 .....	3	For. Lang. ....	5	For. Lang. ....	5
Phys. Ed. or Mil. Sci..	1½	Phys. Ed. or Mil. Sci..	1½	Phys. Ed. or Mil. Sci..	1½

##### SECOND YEAR

Music 10 Cho. or Elect. 1	*Mus. 11 Cho. or Elect. 1	*Mus. 12 Cho. or Elect. 1
16 Ear Training .... 5	51 Harmony .... 5	53 Harmony .... 5
68 Applied .... 3	69 Applied .... 3	70 Applied .... 3
Ec., Pol. Sci. or Soc... 5	For. Lang. .... 5	For. Lang. .... 5
Phys. Ed. or Mil. Sci.. 1½	Phys. Ed. or Mil. Sci.. 1½	Phys. Ed. or Mil. Sci.. 1½

## THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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		108 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. Appr... 2	Music 153 Adv. Appr... 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 ..... 6
		Pol. Sci. 101..... 2

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

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Lib. Arts 11 or Elect.. 5		Mus. 13 Apprec..... 5		Mus. 9 Sight Singing.. 5	
Mus. 18 Applied ..... 3		19 Applied ..... 3		20 Applied ..... 3	
10 Chorus or Elect... 1		*11 Chorus or El. .... 1		*12 Chorus or El. .... 1	
English 1 Composition.. 3		English 2 Composition.. 3		English 3 Composition.. 3	
Elective ..... 3		Elective ..... 3		Mus. 6 History ..... 5	
Phys. Ed. or Mil. Sci.. 1½		Phys. Ed. or Mil. Sci.. 1½		Phys. Ed. or Mil. Sci.. 1½	

## SECOND YEAR

Mus. 10 or El..... 1	*Mus. 11 Cho. or El.. 1	*Mus. 12 Cho. or El.. 1
16 Ear Train..... 5	51 Harmony ..... 5	53 Harmony ..... 5
Econ. or Pol.Sci. or Soc. 5	Physics 50 Sound .... 5	56 School Music..... 5
For. Lang. .... 5	For. Lang. .... 5	Physics 51 Sound..... 5
Phys. Ed. or Mil. Sci.. 1½	Phys. Ed. or Mil. Sci.. 1½	Phys. Ed. or Mil. Sci.. 1½

## THIRD YEAR

Mus. 68 Applied ..... 3	Mus. 69 Applied ..... 3	Mus. 70 Applied ..... 3
101 Harmony ..... 5	114 Mus. Educ..... 2	112 Forms ..... 5
113 Mus. Educ. .... 2	Educ. 119 ..... 3	Educ. 100N ..... 2
For. Lang. .... 5	Educ. Elective ..... 2	Educ. 140 ..... 5
	For. Lang. .... 5	

## FOURTH YEAR

Music 151 Adv. Appre.. 2	Music 152 Adv. Appre.. 2	Music 153 Adv. Appre.. 2
154 Mus. Supervis... 2	155 Music Supervis... 2	156 Music Supervis... 2
Phil. 129 Aesthetics... 5	117 Composition .... 5	109 Counterpoint .... 5
Educ. 145-A ..... 5	Pol. Sci. 101..... 2	Elective ..... 5
	Educ. 145-B ..... 2½	
	Educ. 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 BACHELOR OF MUSIC DEGREE WITH A MAJOR IN COMPOSITION

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Lib. Arts 11 or El... 5		Music 13 Apprec..... 5		Music 9 Sight Singing.. 5	
For. Lang. .... 5		10 Applied ..... 3		6 Mus. History..... 5	
Music 18 Applied..... 3		For. Lang. .... 5		20 Applied ..... 3	
English 1 ..... 3		English 2 ..... 3		English 3 ..... 3	
Phys. Ed. or Mil. Sci.. 1½		Phys. Ed. or Mil. Sci.. 1½		Phys. Ed. or Mil. Sci.. 1½	

## SECOND YEAR

Music 10 Cho. or El... 1		*Music 11 Cho. or El... 1		*Music 12 Cho. or El... 1	
16 Ear Training..... 5		51 Harmony ..... 5		53 Harmony ..... 5	
For. Lang. .... 5		For. Lang. .... 5		Elective ..... 3	
Econ. or Pol. Sci. or Soc. 5		Physics 50 Sound..... 5		Physics 51 Sound..... 5	
Phys. Ed. or Mil. Sci.. 1½		Phys. Ed. or Mil. Sci.. 1½		Phys. Ed. or Mil. Sci.. 1½	

## 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 Composition ..... 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. Counterpoint 5		157 Composition ..... 5		197 Adv. Comp..... 5	
Phil. 129 Aesth..... 5		173 Orchestration ... 5		Elective ..... 5	
Elective ..... 3		Elective ..... 3		Pol. Sci. 101..... 2	

## FOR THE DEGREE OF BACHELOR OF ARTS IN MUSIC

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
**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	
Phys. Ed. or Mil. Sci.. 1½		Phys. Ed. or Mil. Sci.. 1½		Phys. Ed. or Mil. Sci.. 1½	

## 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 Language ..... 5	
Phys. Ed. or Mil. Sci.. 1½		Phys. Ed. or Mil. Sci.. 1½		Phys. Ed. or Mil. Sci.. 1½	

## 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..... 8		‡Lib. Arts elective.....10	
Free elective ..... 5		Pol. Sci. 101..... 2			

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

\*\* (1) Among the music courses indicated above the following are required: 6, 9, 13, 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.



# CURRICULUM IN ARCHITECTURE LEADING TO THE DEGREE OF BACHELOR OF ARCHITECTURE

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Arch. 1 Arch. Apprec....	2	Arch. 2 Arch. Apprec....	2	Arch. 3 Arch. Apprec....	2
4 El. of Design....	4	5 El. of Design....	4	6 El. of Design....	4
7 Graphics .....	1	8 Graphics .....	1	9 Graphics .....	1
47 El. Bldg. 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	Phys. Ed. or Mil. Sci....	1½
Phys. Ed. or Mil. Sci....	1½	Phys. Ed. or Mil. Sci....	1½		

## 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
Phys. Ed. or Mil. Sci....	1½	Phys. Ed. or Mil. Sci....	1½	PSD 34 Draw. & Sculp.	3
				Phys. Ed. or Mil. Sci....	1½

## THIRD YEAR

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 Theo. Con....	3	41 Water Color....	2	42 Water Color ....	2
Pol. Sci. 101.....	2	125 Pencil Sketch... 1		126 Pencil Sketch.... 1	

## FOURTH YEAR

Arch. 107 Design Gr. II	5	Arch. 154 Design Gr. III	5	Arch. 155 Des. Gr. III.	5
112 Freehand Draw... 2		113 Freehand Draw... 2		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 Accous&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 Theo. of Arch.... 2		153 Arch. Materials.. 2		159 Spec. & Of. Pr.. 2	
PSD 161 Life..... 5		PSD 162 Life .....	3	Electives .....	5
Electives .....	5	Arch. 170 Sen. Mechan. 2			
		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

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
P.S.D. 5 Drawing.....	3	P.S.D. 6 Drawing.....	3	P.S.D. 7 Drawing.....	3
9 Art Structure.....	3	10 Art Struc.....	3	11 Art Struc.....	3
English Composition ...	3	English Composition ...	3	English Composition ...	3
Foreign Language .....	5	Foreign Language .....	5	Foreign Language .....	5
Phys. Ed. or Mil. Sci....	1½	Phys. Ed. or Mil. Sci....	1½	Phys. Ed. or Mil. Sci....	1½

## SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
P.S.D. 53 Art Struc... 3		P.S.D. 54 Art Struc... 3		P.S.D. 55 Art Struc... 3	
56 Drwg. and Ptg... 3		57 Drawing and Ptg... 3		58 Drawing and Ptg... 3	
Foreign Language ..... 5		Phys. Ed. or Mil. Sci... 1½		Phys. Ed. or Mil. Sci... 1½	
Phys. Ed. or Mil. Sci... 1½		Electives ..... 0		Electives ..... 2	
Electives ..... 4				Lib. Arts 11 or Elec... 5	
				P.S.D. 20 ..... 2	

## 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 Sci ..... 5	
Pol. Sci., Econ., or Soc. 5		Laboratory Sci. .... 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		Pol. Sci. 101..... 2		P.S.D. Electives ..... 6	
Electives ..... 7		P.S.D. Electives ..... 6		Electives ..... 7	
		Electives ..... 5			

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

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
P.S.D. 5 Drawing..... 3		P.S.D. 6 Drawing..... 3		P.S.D. 7 Drawing..... 3	
9 Art Structure..... 3		10 Art Structure... 3		11 Art Struc..... 3	
English Composition ... 3		English Composition ... 3		English Composition ... 3	
Foreign Language ..... 5		Foreign Language ..... 5		Foreign Language ..... 5	
Phys. Ed. or Mil. Sci... 1½		Phys. Ed. or Mil. Sci... 1½		Phys. Ed. or Mil. Sci... 1½	

## 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		Pol. Sci. Ec., or Soc... 5		Phys. Ed. or Mil. Sci... 1½	
Phys. Ed. or Mil. Sci... 1½		Phys. Ed. or Mil. Sci... 1½		Electives ..... 4	
Electives ..... 3		Electives ..... 3		Lib. Arts 11 or Elec... 5	

## 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		20 Sculp. Apprec.... 2	
103 Pottery or		158 Jewelry ..... 3		Educ. electives ..... 3	
157 Metalwork ..... 3		Laboratory Sci. .... 5		Laboratory Science .... 5	
Educ. 110 ..... 2		Electives ..... 7		Electives ..... 5	
Educ. Electives ..... 2					
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 Struc. .... 3		Educ. 145-A ..... 5	
Philosophy 129 ..... 5		102 Pub. Sch. Art... 2		Pol. Sci. 101 ..... 2	
Electives ..... 4		Educ. 140 ..... 5		Electives ..... 6	
Educ. 160P ..... 2		Educ. 145-B ..... 2½			

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

**FIRST YEAR**

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
P.S.D. 5 Drawing.....	3	P.S.D. 6 Drawing.....	3	P.S.D. 7 Drawing.....	3
9 Art Struc.....	3	10 Art Struc.....	3	11 Art Struc.....	3
English Composition ...	3	English Composition ...	3	English Composition ...	3
Foreign Language .....	5	Foreign Language .....	5	Foreign Language .....	5
Phys. Ed. or Mil. Sci..	1½	Phys. Ed. or Mil. Sci..	1½	Phys. Ed. or Mil. Sci..	1½

**SECOND YEAR**

Arch. 1 Appreciation... 2	Arch. 2 Arch. Apprec.. 2	Arch. 3 Arch. Apprec.. 2
4 Elem. of Des..... 4	5 Elem. of Arch..... 4	6 Elem. of Arch..... 4
7 Graphics .....	8 Graphics .....	9 Graphics .....
P.S.D. 80 Furn. Des... 3	P.S.D. 81 Furn. Des... 3	P.S.D. 82 Furn. Des... 3
Foreign Language .....	Foreign Language .....	Electives .....
Electives .....	Elective .....	Phys. Ed. or Mil. Sci.. 1½
Phys. Ed. or Mil. Sci.. 1½	Phys. Ed. or Mil. Sci.. 1½	

**THIRD YEAR**

P.S.D. 110 Int. Des... 3	P.S.D. 111 Int. Des... 3	P.S.D. 112 Int. Des... 3
Arch. 101 History..... 2	Arch. 102 History..... 2	Arch. 103 History..... 2
Pol. Sci., Soc. or Ec... 5	Lab. Science .....	Lab. Science .....
Lib. Arts 11 or elect... 5	Electives .....	H.E. 25 Textiles..... 5

**FOURTH YEAR**

P.S.D. 172 Int. Des... 5	P.S.D. 173 Int. Des... 5	P.S.D. 20 Sculp. Apprec. 2
126 Hist. of Ptg..... 1	127 Hist. of Ptg.... 1	174 Int. Des..... 5
H.E. 143 House Furn... 3	Electives .....	128 Hist. of Ptg.... 1
Electives .....		Pol. Sci. 101..... 2
		Electives .....

**MAJOR IN PAINTING OR SCULPTURE**

**FIRST YEAR**

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
P.S.D. 5 Drawing.....	3	P.S.D. 6 Drawing.....	3	P.S.D. 7 Drawing.....	3
9 Art 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
Phys. Ed. or Mil. Sci..	1½	Phys. Ed. or Mil. Sci..	1½	Phys. Ed. or Mil. Sci..	1½

**SECOND YEAR**

P.S.D. 56 Painting..... 3	P.S.D. 57 Painting .... 3	P.S.D. 58 Painting..... 3
65 Drawing and Ptg. or *72 Sculpture.... 3	66 Draw. and Ptg. or *73 Sculpture .... 3	67 Drawing and Ptg. or *74 Sculpture.... 3
Foreign Language .....	Electives .....	Lib. Arts 11 or elective 5
Phys. Ed. or Mil. Sci.. 1½	Phys. Ed. or Mil. Sci.. 1½	Electives .....
Electives .....		Phys. Ed. or Mil. Sci.. 1½

**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 .....	108 Portrait .....	P.S.D. 106 Art Struc.. 3
126 Hist. of Ptg.... 1	127 Hist. of Ptg.... 1	109 Portrait .....
Pol. Sci. Ec., or Soc... 5	Laboratory Science ... 5	128 Hist. of Ptg.... 1
Electives .....	Electives .....	Laboratory Science ... 5
		Electives .....

**Group II—Sculpture**

P.S.D. 122 Sculpture... 3	P.S.D. 123 Sculpture... 3	Arch. 3 Arch. Apprec.. 2
103 Pottery .....	104 Pottery .....	P.S.D. 124 Sculpture... 3
126 Hist. of Ptg.... 1	127 Hist. of Ptg.... 1	20 Sculp. Apprec... 2
Pol. Sci., Eco., or Soc... 5	Laboratory Science ... 5	128 Hist. of Ptg.... 1
Electives .....	Electives .....	Laboratory Science ... 5
		Electives .....

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

## FOURTH YEAR

## Group I—Painting

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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 Comp. ....	3
Electives .....	10	Electives .....	10	Electives .....	8
				Pol. Sci. 101.....	2

## Group II—Sculpture

P.S.D. 132 Sculpture... 3	P.S.D. 133 Sculpture... 3	P.S.D. 134 Sculp..... 3
136 Sculp. Comp. ... 3	137 Sculp. Comp. ... 3	138 Sculp. Comp.... 3
160 Life .....	161 Life .....	162 Life .....
Electives .....	Arch. 115 Modeling.... 2	Pol. Sci. 101..... 2
	Electives .....	Electives .....

Preferred electives—Architectural design and history of ornament.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF ARTS  
IN DRAMATIC ART

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Dram. Art 9 .....	2	Dram. Art 107.....	5	English 3 Composition... 3	
English 1 Comp.....	3	English 2 Composition..	3	*Foreign Language .... 5	
Dram. Art 5.....	5	§Chem., Bot. or Zool... 5		Electives .....	7
§Chem., Bot. or Zool... 5		Phys. Ed. or Mil. Sci.. 1½		Phys. Ed. or Mil. Sci.. 1½	
Phys. Ed. or Mil. Sci.. 1½		Dram. Art 10.....	2		

## SECOND YEAR

Dramatic Art 61..... 5	Dram. Art 62..... 5	Dramatic Art 63..... 5
*Foreign Language .... 5	Psychology 1 .....	Pol. Sci. Soc., or Econ. 5
Lib. Arts 11 or elect.. 5	Foreign Language .... 5	Foreign Language .... 5
Phys. Ed. or Mil. Sci.. 1½	Phys. Ed. or Mil. Sci.. 1½	Phys. Ed. or Mil. Sci.. 1½

## THIRD YEAR

Electives .....	6	Electives .....	6	Electives .....	6
Dramatic Art 104..... 4		Dram. Art 105..... 4		Dramatic Art 106..... 4	
127 .....	5	‡Lib. Arts Electives.... 5		‡Lib. Arts Electives.... 5	

## FOURTH YEAR

Dram. Art 101 Play Act. 3	Dram. Art 102 Play Act. 3	Dram. Art 103 Play Act. 3
151 Rep. Plays .....	152 Rep. Plays .....	153 Rep. Plays .....
‡Lib. Arts Electives.... 7	‡Lib. Arts Electives.... 7	Education 160L .....
Electives .....	Electives .....	‡Lib. Arts Electives.... 3
		Pol. Sci. 101..... 2
		Electives .....

‡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.

\*At least 10 credits in foreign language should be in French.

**CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF FINE ARTS  
WITH A MAJOR IN DRAMATIC ART**

**FIRST YEAR**

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Dram. Art 9.....	2	Dram. Art 107.....	5	English 3 Composition..	3
English 1 Composition..	3	English 2 Composition..	3	*Foreign Language ....	5
Dram. Art 5.....	5	Chem., Bot. or Zool....	5	Electives .....	2
Chem., Bot. or Zool....	5	Phys. Ed. or Mil. Sci..	1½	Phys. Ed. or Mil. Sci..	1½
Phys. Ed. or Mil. Sci..	1½	Dramatic Art 10.....	2	Dramatic Art 108.....	5

**SECOND YEAR**

Dram. Art 61.....	5	Dramatic Art 62.....	5	Dramatic Art 63.....	5
*Foreign Language ....	5	Psychology 1 .....	5	Pol. Sci., Soc., or Econ.	5
Lib. Arts 11 or electives	5	Foreign Language ....	5	Foreign Language ....	5
Phys. Ed. or Mil. Sci..	1½	Phys. Ed. or Mil. Sci..	1½	Phys. Ed. or Mil. Sci..	1½

**THIRD YEAR**

Dram. Art Electives....	5	Dramatic Art Electives.	5	Dramatic Art Electives.	5
127 .....	5	105 .....	4	106 .....	4
104 .....	4	Electives .....	6	Electives .....	6
Electives .....	1				

**FOURTH YEAR**

Dramatic Art 101.....	3	Dramatic Art 102.....	3	Dramatic Art 103.....	3
151 .....	3	152 .....	3	153 .....	3
114 .....	2	115 .....	2	116 .....	2
Phil. 129 (Aesthetics)..	5	Electives .....	7	Education 160L .....	2
Electives .....	2			Electives .....	3
				Pol. Sci. 101.....	2

**COURSES OF STUDY**

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

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\* At least 10 credits in foreign language should be in French.

## COLLEGE OF FISHERIES

### GENERAL STATEMENT

The College of Fisheries was established in 1919. It has a two-fold purpose: First, to afford instruction in the principles and practice of fishery; second, to promote the interest of fisheries in the state of Washington and in the United States by encouraging the right use of fishery resources.

The location of the college has exceptional advantages. The University campus is situated on the shores of Lakes Washington and Union, which are connected with each other and with Puget Sound by canals. Extensive commercial fisheries for fishes, oysters, clams and crabs are conducted in Puget Sound, while fleets of vessels with headquarters at Seattle and nearby cities carry on extensive fisheries in the ocean adjacent to the Washington coast, and on the fishing banks of Alaska. Numerous canneries, smoke-houses, cold storage plants and fertilizer plants are to be found in Seattle and other places on the Sound. A number of fish hatcheries are owned and operated in the state of Washington by the federal, state and county governments. At Friday Harbor the University owns and operates an excellent marine biological station. These many advantages present unrivaled opportunities for study of fisheries, aquatic life and fish culture.

### DEGREES

The four-year curricula in the College of Fisheries lead to the degree of bachelor of science (B.S.) in fisheries.

The degree of master of science (M.S.) in fisheries will be conferred on any graduate of the four-year curricula who has completed at least one year of graduate work and presented a satisfactory thesis with the grade of A or B. A graduate of any similar institution of equal rank will be given full graduate standing, but he must have a satisfactory knowledge of zoology, chemistry, bacteriology, and botany. Selection of work for this degree must be approved by the director of the college. 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, who shall determine the student's fitness for such work and confer with him upon his proposed course of study.

### 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, 59, 60.

### 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, page 214.

### LABORATORIES

For description of laboratories, see page 42.

## AQUARIUM

The aquarium is equipped with a number of tanks for live fishes, and with balanced and other aquaria for study of aquarium management. Here students are taught to make accurate observations, record data, note habits, and to study reactions and the life history of fishes.

## FISH HATCHERY

The fish hatchery occupies about fourteen hundred square feet of floor space. It is furnished with hatching troughs, baskets, and other essential equipment for care of 2,000,000 salmon or trout eggs. A complete equipment consisting of batteries of open-top jars is provided for care of several million semi-buoyant eggs, such as those of the shad, whitefish and yellow perch. A tidal box is also available for handling eggs of saltwater species. Feeding tanks and aquaria are provided in which experimental work in fish culture may be carried on. A number of cement lined ponds are available in the college grounds for rearing of various species of aquatic animals.

Within easy reach of the University are state and federal fish hatcheries where a study may be made of the actual conditions under which fish culture is carried on.

An arrangement has been effected with the United States Bureau of Fisheries under the terms of which the most promising seniors in fish culture will be afforded opportunity to spend five or six months at some one of the bureau's eighteen hatcheries in Washington, Oregon, and Alaska, half of this period to be during the summer vacation. They will be given opportunity to familiarize themselves with building and repair of hatcheries; setting fish traps, stripping spawning fish, fertilizing and the care of eggs until the young are hatched out. While so engaged, students will be paid wages current for this class of work. At the expiration of this period the students will return to the University to complete their course. After passing the regular civil service examination, as many of these students as there is room for will be appointed to the positions of fish culturists.

## COMMERCIAL OPERATIONS

In or near Seattle and available for study are plants for the canning of fish, crabs, shrimps and clams; the mild-curing of salmon; the pickling of salmon, herring, and sablefish; the freezing and cold storage of fish and oysters; the dehydration of fish; the smoking of fish, and the preparation of oil, fish meal and fertilizer from the waste. Two large can-making establishments, several plants manufacturing canning machinery, and a number of others supplying various machines and supplies for the industry, are also located in Seattle. Such of these industries as are not in Seattle are conveniently situated nearby, and the transportation costs to them are low.

*Shellfish Culture*—On Puget Sound and in Hood Canal are numerous private oyster beds where cultivation has been practised for some years. The state owns certain oyster reserves which are utilized for experimental purposes. These are all within reasonable distance of Seattle and are available for study purposes by the students of the college.

*Fishery Operations*—Trap netting, purse and haul-seining, gill netting, trolling, hand and long-line fishing, oyster gathering, clam digging, kelp harvesting and other forms of commercial fishing are carried on either in the harbor of Seattle, or waters adjacent, during the proper seasons, and can be observed and studied on the ground.

## FIELD EXCURSIONS

Much of the instruction in fish culture and fisheries technology is given in the field, necessitating frequent excursions to nearby hatcheries, fishing camps, oyster beds, and industrial plants. The varied fishery apparatus owned by the college is used in nearby waters. The expense of such excursions will be comparatively small.

## SUMMER WORK

Students of fisheries and food preservation are advised to spend their summer vacations in some line of practical work connected with the fishery and food preservation industries. As the college is convenient to the more important fish, fruit and vegetable canneries and dehydrating plants, ample opportunity is afforded for summer employment. Students not only acquire valuable experience in this way, but earn a considerable portion of their university expenses.

## FISHERY CLUB

The Fishery Club is an organization open to all students of the College of Fisheries. It aims: (1) to promote acquaintance and good fellowship among students and instructors; (2) to keep in touch with everyday problems in fisheries and with men who are doing things worth while in this industry, and (3) to interest the public in the College of Fisheries and in the fishery preservation problems of the state and nation.

## OUTLINE FOR CURRICULA

*Choice of Electives*—In the election of studies, students should follow the sequence of subjects as outlined in the curricula. Deviations from the prescribed order will not be allowed by class advisers unless such deviation is imperative. All electives must have the approval of class advisers.

Attention of the students is directed to the following courses as desirable electives, those to be selected depending on the curriculum followed: B.A. 7, Geographic Background of Industry; B.A. 60, Labor in Industry; B.A. 65, Accounting Survey; B.A. 103, Money and Banking; B.A. 104, Economics of Transportation; B.A. 105, Business Organization; B.A. 106, Economics of Markets and Advertising; B.A. 115, Business Correspondence; B.A. 167, Employment Management; Bact. 103, Public Hygiene; Bact. 107, Sanitation; Chem. 104, Food Analysis; Chem. 123, Industrial Chemistry; Chem. 144, Physiological; Chem. 155, Chemistry of Water; Chem. 165, Chemistry of Nutrition; English 40, Essentials of Speaking; M.E. 82, 198, Mechanical Engineering; modern language (Spanish or German preferred); Physics 1, 2, General Physics; Zool. 127, 128, Comparative Anatomy; Zool. 101, Cytology; Zool. 121, Microscopic Technique; Physiology 7, Elementary Physiology.

## I. FISH BIOLOGY

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Fisheries 1 .....	2	Fisheries 2 .....	2	Fisheries 6 .....	2
Zoology 1 .....	5	Zoology 2 .....	5	Zoology 5 .....	5
Chemistry 1 or 21.....	5	Chemistry 2 or 22.....	5	Chemistry 23 .....	5
English 4 .....	3	English 5 .....	3	Gen. Engineering 7 ....	3
Mat. Sci. or Phys. Ed..	1½	Mat. Sci. or Phys. Ed..	1½	Mat. Sci. or Phys. Ed..	1½



## College of Fisheries

## SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Fisheries 53 .....	5	Fisheries 54 .....	5	Zoology 108 .....	5
Bacteriology 101 .....	5	Bacteriology 102 .....	5	Botany 53 .....	5
Zoology 106 .....	5	Mathematics 13 .....	5	Fisheries 60 .....	3
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½	Political Science 101...	2
				Mil. Sci. or Phys. Ed..	1½

## THIRD YEAR

Fisheries 101 .....	5	Fisheries 102 .....	5	Fisheries 103 .....	5
Fisheries 140 .....	5	Fisheries 104 .....	5	Fisheries 105 .....	5
Approved Electives ....	5	Approved Electives ....	5	Approved Electives ....	5

## FOURTH YEAR

Fisheries 150 .....	5	Fisheries 151 .....	5	Fisheries 152 .....	5
Fisheries 154 .....	5	Fisheries 196 .....	2	Fisheries 197 .....	2
Fisheries 115 .....	3	Approved Electives ....	8	B.A. 3 .....	3
Fisheries 195 .....	2			Approved Electives ....	5

## II. FISHERIES TECHNOLOGY

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Fisheries 1 .....	2	Fisheries 2 .....	2	Fisheries 6 .....	2
Zoology 1 .....	5	Zoology 2 .....	5	B.A. 3 .....	3
Chemistry 1 or 21.....	5	Chemistry 2 or 22.....	5	Chemistry 23 .....	5
English 4 .....	3	English 5 .....	3	Gen. Engineering 7.....	3
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½	Approved Electives ....	2
				Mil. Sci. or Phys. Ed..	1½

## SECOND YEAR

Fisheries 53 .....	5	Fisheries 54 .....	5	Fisheries 60 .....	3
Bacteriology 101 .....	5	Bacteriology 102 .....	5	Fisheries 65 .....	2
Chem. 131 or 128.....	5	Chem. 132 or 120.....	5	Chemistry 111 .....	5
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½	Approved Electives ....	5
				Mil. Sci. or Phys. Ed..	1½

## THIRD YEAR

Fisheries 110 .....	5	Fisheries 104 .....	5	Fisheries 105 .....	5
Fisheries 120 .....	5	Fisheries 111 .....	5	Fisheries 122 .....	5
Mathematics 13 .....	5	Fisheries 121 .....	5	Fisheries 101 .....	5
				Pol. Sci. 101.....	2

## FOURTH YEAR

Fisheries 150 .....	5	Fisheries 147 .....	3	Fisheries 152 .....	5
Fisheries 115 .....	3	Fisheries 151 .....	5	Fisheries 197 .....	2
Fisheries 195 .....	2	Fisheries 196 .....	2	B.A. 55 .....	3
B.A. 54 .....	3	Approved Electives ....	5	Approved Electives ....	5
Approved Electives ....	2				

Unless a student has presented one year of high school physics as an entrance requirement, he will be required to take Physics 1, 2 and 3 in the University with credit.

## GRADUATE

Fisheries 201....Research*	Fisheries 202....Research*	Fisheries 203....Research*
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## COURSES OF STUDY

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

\* Time and credit to be arranged.

## COLLEGE OF FORESTRY

### GENERAL INFORMATION

The College of Forestry was established in 1907. Its location has exceptional advantages. The University campus comprises 582 acres, forty of which are in timber, offering splendid opportunities for field work in silviculture and forest measurements. 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

The Forest Club is comprised of all students in the College of Forestry. It aims: To promote acquaintance and good fellowship among students and instructors; to keep in touch with everyday 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 1928-1929 are: President, H. Phil Brandner; vice-president, Whitney S. Wilson; secretary-treasurer, W. G. Morris; editor, George C. Flanagan.

### FIELD INSTRUCTION AND SUMMER WORK

Much of the instruction in technical forestry and lumbering is given in the field, in nearby forests, logging camps, saw mills, woodworking plants, and plants that manufacture equipment. 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 cooperates 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 page 43.

#### 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, 59, 60.

#### SPECIAL REQUIREMENTS OF THE COLLEGE OF FORESTRY

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

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

*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. A candidate for the degree must present credits in one of the following advanced courses: Forestry 184, 187, 190 or 196. 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 section, page 214.

#### 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.

#### 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 freshman or 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 service and state work, and the management of private forest holding; (2) logging engineering; (3) forest products; (4) milling and marketing of lumber. Upon beginning work in the upper division students must elect to follow one of these specialties.

Arrangements may also be made for specialization in forest pathology, forest entomology, recreation or any other lines into which a broad training in forestry enters. This may be done by substituting courses in other departments for some of the required courses in forestry. All such substitutions require the sanction of the dean and the University graduation committee.

*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 the advanced subjects who has not had the necessary prerequisites given with the course prescriptions below.

## LOWER DIVISION

The lower division courses aim to give students who cannot go farther than the end of the second year, preparation for forest ranger service and training as assistants to logging engineers. On approval of the dean they will be allowed to substitute certain subjects of the junior year for some of the required freshman and sophomore work.

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 1. Dend.*..... 5		Bot. 11. Foresters..... 5		Bot. 12. Foresters..... 5	
2. Intro. to Forestry. 3		For. 3. Intro.to For.... 3		Math. 56. Foresters.... 3	
5. Woodcraft ..... 2		Math. 52. Coll. Alg... 4		For. 4. Protection†.... 3	
Math. 51. Trig..... 4		G.E. 7. Drawing..... 3		C.E. 56. For. Survey... 5	
English 4. Comp..... 3		C.E. 55. For. Survey... 2		Phys. Ed. or Mil. Sci... 1½	
Phys. Ed. or Mil. Sci... 1½		Phys. Ed. or Mil. Sci... 1½			

## SECOND YEAR

For. 57. Silvics..... 5		Chem. 2. Gen. Chem... 5		For. 51. Mensuration... 5	
7. Protection ..... 3		For. 58. Silvicult..... 5		52. Mensuration .... 5	
Chem. 1. Gen. Chem... 5		53. Construction .... 3		59. Silviculture ..... 6	
Pol. Sci. 101..... 2		English 5. Comp..... 3		Phys. Ed. or Mil. Sci... 1½	
Phys. Ed. or Mil. Sci... 1½		Phys. Ed. or Mil. Sci... 1½			

*Suggested Electives*

Geol. 1a. Materials..... 3	Eng. Shop 53. Foundry. 1	Eng. Shop 54. Forge... 1
1b. Topography ..... 2		

## 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.)

## THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 101. Technol..... 5		For. 105. Preservation.. 3		For. 158. Util..... 5	
Physics 1. General..... 5		Physics 2. General..... 5		Physics 3. General..... 5	
		For. 104. Tim. Tests... 5		Econ. 3. General..... 3	

*Suggested Electives*

M.E. 82. Steam Engr... 3	B.A. 65. Accounting.... 5	B.A. 56. Bus. Law.... 3
C.E. 22. Log. R.R.... 4	55. Bus. Law..... 3	Chem. 111. Quant. Anal. 5
B.A. 54. Bus. Law.... 3	M.E. 83. Steam Engr.	H.E. 104. Nutrition.... 2
Bot. 111. Pathology.... 5	Lab. .... 3	Chem. 101. Qual. Anal. 5
		Chem. 55. For. Prod... 3

## FOURTH YEAR

For. 151. For. Finance. 3	For. 126. Econ..... 3	All elective.
153. Gen. Lbr..... 5	152. For. Organ..... 3	

*Suggested Electives*

For. 185. Log. Engr... 4	For. 184. Mfg. Prob... 3	For. 187. Log. Engr...16
183. Milling ..... 5	186. Log. Engr. .... 4	189. Wood Pulp .... 5
119. Admin. .... 3	188. Theory & Prac.	160-162. Invest'n ...1-5
193. Seminar ..... 3	of Kiln Drying.... 5	190. Adv. Pres. .... 3
	194. Seminar ..... 3	196. For. Mgmt. .... 8

## GRADUATE

The following subjects are primarily for graduate students. Seniors will be allowed to elect them only on recommendation of the dean and the

\*Also offered in spring quarter.

†Also offered in winter quarter.

instructor concerned. With the exception of the thesis none of the subjects, strictly speaking, is required, but the student will elect all those belonging to one specialty as determined on consultation with his faculty adviser. A sufficient number will have to be taken to fulfill the requirements for the master's degree. Nine credits only will be allowed for total thesis credit.

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 202. Thesis.....	3-6	For. 202. Thesis.....	3-6	For. 202. Thesis.....	3-6
201. For. Geog. ....	3	200. Seminar .....	3	223. Adv. Mgmt. ...	8
208. Seminar .....	3	214. Research .....	1-5	224. Adv. Milling and	
221. History .....	3	Elective .....	10	Marketing .....	5
213. Research .....	1-5			215. Research .....	1-5

#### 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 53,428 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 197,147 volumes. It is especially strong in reference works.

The Seattle public library, containing about 422,599 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, and register in accordance with the rules of the State Board of Law Examiners.

*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 60.

#### 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 Bulletin, page 92). 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 Bulletin, page 112). 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.

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 Administration and Law*—It is possible to obtain the degrees of bachelor of arts or bachelor of science, or bachelor of business administration and bachelor of laws, in six years. The requirements of this plan are fully explained hereafter under the three-year pre-law curriculum. (See page 197).

*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-fourth 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, page 99). 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 year's work) and completed the requirements prescribed for the attainment of junior standing in the College of Science. (See College of Science section, page 108).

*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.	English 51, 52, 53.
Astronomy 1.	English 54, 55, 56.
Liberal Arts 1, 11.	English 64, 65, 66.
Latin 1-2, 3, 4, 5, 6.	English 73, 74, 75.
Business Administration 1, 2.	Political Science 1.
Business Administration 15, 16.	Political Science 118.
Business Administration 65.	Political Science 119, 120.
Sociology 1.	History 105, 106, 107.
English 40.	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 University, he must take two quarters (10 credits) in ancient life and literature. These courses are given under the titles of Greek and Latin, but in fact, are courses in the English language dealing with Greek and Latin life and literature. They are therefore required of all students who have had only a modern language and should also be taken by students who have had two years only of Greek and Latin and feel that they have lost touch with same. Otherwise the latter are advised to continue with their Greek or Latin and in the event they have taken Latin 1, 2, and 3, they are urged to continue with Latin 4, 5, and 6.

As to the subjects required in the first two years of the University: they are divided into four groups. Physical education or military 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-years 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 sections relating to 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 General Information section, will be cheerfully given upon request. Communications addressed at any time to the Dean of the Law School, University of Washington, Seattle, Washington, will receive prompt attention.

## COURSES OF STUDY

For a description of courses offered by the 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 Co., numerous foundries, and plants engaged in electro-metallurgical work.

*Instruction for Coal Mining Men*—Miners taking the rescue training also receive instruction in the College of Mines on the subjects of mine gases, explosions, and the origin and distribution of Pacific Coast and Alaska coals. Laboratory experiments are carried on to show the methods of analyzing coals and determining the uses to which they can be put. The methods of testing for permissible explosives at the Pittsburgh station and the safe methods of charging, tamping, and firing are explained. Coal men interested in the washing of coals are given full practice with the several types of apparatus used for this purpose.

## 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.

## LABORATORIES

For a description of mining, metallurgical and ceramic laboratories, see page 40.

## 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 1929-1930 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.

2. Non-Metallic Materials. (a) Purification: Washing of kaolin and ochres; (b) Problems in drying certain non-metallics; (c) Efficiency studies in kiln-heating.

*Arthur A. Denny Fellowship*—To encourage graduate work a fellowship of \$500 annual value is open to students in the College of Mines who are residents of the state of Washington. It is awarded for scholastic excellence and general merit, but only to students who need financial assistance. Applications must be made to the Dean of the College before March 15 preceding the academic year for which the fellowship is to be granted.

*Investigations of Problems*—Under certain conditions, the University will permit mining, metallurgical, and ceramic companies who have special problems for solution, to detail a representative to work on such problems, or to meet the expense of engaging a man to do so. Experiments which can be carried on as readily in commercial laboratories and which do not require direction from the College's experts are not undertaken. The research is done under the direction of the department, and complete records of all the data obtained are filed with the department, which reserves the right to publish this information for the benefit of the mining, metallurgical and ceramic industries.

#### 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.

#### MINING SOCIETY

The Mining 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, 59, 60.

*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.

## SPECIAL REQUIREMENTS FOR THE COLLEGE OF MINES

In addition to the three units of English and the two units of mathematics required for admission to all colleges of the University all students expecting to enter the College of Mines should offer the following subjects for entrance:

Advanced algebra .....	$\frac{1}{2}$ unit
Plane geometry .....	1 unit
Solid geometry .....	$\frac{1}{2}$ 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.

## CURRICULA OF THE COLLEGE OF MINES

## MINING ENGINEERING (OPTION I)

## FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mathematics 51 .....	4	Mathematics 52 .....	4	Mathematics 53 .....	4
Gen. Engineering 1.....	3	Gen. Engineering 2.....	3	Gen. Engineering 13.....	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
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½

## 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	Chemistry 111 .....	5
Geology 21 .....	5	Geology 1a .....	3	English 100 .....	3
Mil. Sci. or Phys. Ed..	1½	Geology 1b .....	2	Mil. Sci. or Phys. Ed..	1½
		Mil. Sci. or Phys. Ed..	1½		

## 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

## College of Mines

## FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 151 .....	3	Mining 192 .....	2	Mining 107 .....	1
Mining 191 .....	2	Mining 162 .....	4	Mining 152 .....	5
Metallurgy 155 .....	3	Geology 127 .....	5	Mining 193 .....	1
Metallurgy 162 .....	2	Mining 103 .....	1	Mining 182 .....	3
Electives .....	3	Electives .....	3	Electives .....	4
Pol. Sci. 101.....	2				

## GEOLOGY AND MINING (OPTION II)

## FIRST YEAR

(Same as for Option I)

## SECOND YEAR

(Same as for Option I)

## THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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 4 .....	3
Geology 123 .....	3	Geology 124 .....	3	Geology 125 .....	3
Mech. Engineering 54..	1	Electives .....	2	Electives .....	6

## FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 151 .....	3	Mining 192 .....	2	Mining 107 .....	1
Mining 191 .....	2	Mining 162 .....	4	Mining 152 .....	5
Metallurgy 162 .....	2	Geology 127 .....	5	Mining 193 .....	1
Geology 126 .....	3	Mining 103 .....	1	Electives .....	7
Geology 140 .....	3	Electives .....	3		
Pol. Sci. 101.....	2				

## METALLURGICAL ENGINEERING (OPTION III)

## FIRST YEAR

(Same as for Option I)

## SECOND YEAR

(Same as for Option I)

## THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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	Pol. Sci. 101.....	2
				Electives .....	4

## FOURTH YEAR

Mining 151 .....	3	Mining 192 .....	2	Mining 107 .....	1
Mining 191 .....	2	Metallurgy 163 .....	3	Mining 152 .....	5
Metallurgy 104 .....	5	Metallurgy 165 .....	3	Mining 193 .....	1
Metallurgy 155 .....	3	Geology 127 .....	5	Metallurgy 166 .....	3
Metallurgy 162 .....	2	Mining 103 .....	1	Electives .....	5

## COAL MINING ENGINEERING (OPTION IV)

## FIRST YEAR

(Same as for Option I)

## SECOND YEAR

(Same as for Option I)

## Curricula

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### THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 101 .....	3	Mining 122 .....	3	Mining 106 .....	1
Civil Engineering 131...	3	Metallurgy 103 .....	4	Metallurgy 102 .....	2
Geology 123 .....	3	Civil Engineering 132...	3	Geology 4 .....	3
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 192 .....	2	Mining 107 .....	1
Mining 191 .....	2	Mining 171 .....	3	Mining 193 .....	1
Metallurgy 155 .....	3	Mining 176 .....	5	Mining 182 .....	3
Mining 170 .....	3	Mining 103 .....	2	Mining 178 .....	2
Mech. Engineering 54...	1	Electives .....	3	Electives .....	7
Electives .....	1				
Pol. Sci. 101.....	2				

### CERAMIC ENGINEERING (OPTION V)

#### FIRST YEAR (Same as for Option I)

#### SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 51 .....	3	Civil Engineering 53...	3	Ceramics 90 .....	3
Physics 97 .....	5	Physics 98 .....	5	Physics 99 .....	5
Mathematics 61 .....	3	Mathematics 62 .....	3	Metallurgy 53 .....	3
Geology 21 .....	5	Geology 1a .....	3	Chemistry 111 .....	5
Mil. Sci. or Phys. Ed..	1½	Geology 1b .....	2	Mil. Sci. or Phys. Ed..	1½
		Mil. Sci. or Phys. Ed..	1½		

#### THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 101 .....	3	Metallurgy 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 .....	3
Geology 123 .....	3	Electives .....	3	English 100 .....	3
				Electives .....	4

Ceramic practice in summer vacation.

#### FOURTH YEAR

Mining 101 .....	3	Mining 192 .....	3	Mining 193 .....	2
Ceramics 121 .....	5	Mining 103 .....	1	Mining 107 .....	1
Pol. Sci. 101.....	2	Metallurgy 103 .....	4	Ceramics 123 .....	5
Chemistry 181 .....	3	Ceramics 122 .....	5	Electives .....	7
Electives .....	2	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

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### SPECIAL ANNOUNCEMENT

#### Discontinuance of Three-Year Course in 1930

In the interest of better trained pharmacists in the State of Washington, the University of Washington College of Pharmacy has decided to discontinue the three-year course for students entering the college year of 1930-31. The last opportunity, therefore, to enter as a candidate for the three-year degree of pharmaceutical chemist will be the spring quarter of the college year 1929-30. The other colleges of the Pacific Northwest join with the University of Washington in making this change. A number of other colleges of the United States have either discontinued the three-year course or will do so by 1930. All colleges of the United States holding membership in the American Association of Colleges of Pharmacy have agreed to make four years the minimum course of instruction for students entering in 1932. Three four-year courses will be offered at the University of Washington, namely:

1. Pharmacy combined with business training for the retail pharmacist.
2. Scientific course with some liberal arts training.
3. Preparation for entrance to schools of medicine.

#### ORGANIZATION AND EQUIPMENT

The College of Pharmacy was organized in 1894 to provide opportunity for young men and women to become well trained practical pharmacists. The work of the original two-year course has been extended to three, four and five-year courses. In the three-year course training is offered in technical and commercial pharmacy; in the four-year course an opportunity is offered for training in more advanced scientific pharmacy with a liberal training in other sciences and arts. A four-year course is also offered which combines scientific training in pharmacy with business administration. The five-year or graduate course offers opportunity for more advanced training in scientific pharmacy and allied sciences and research in one of the most fertile fields of modern science. Graduate work may also be extended in courses leading to the doctorate degree.

#### REGISTRATION AS A PHARMACIST IN THE STATE OF WASHINGTON

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 of 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.

*Higher Standards in Pharmacy*—The minimum course of study in the College of Pharmacy is *Three Years*. (See special announcement page 206). The aim of the course is to give thorough scientific training for retail pharmacists; if the student desires, he may elect certain studies in the College of Business Administration that will better fit him for the business side of retail pharmacy.

Retail pharmacy is recognized both as a profession and a business. The College of Pharmacy desires to meet these two conditions as far as possible. Special attention is given to a thorough scientific training for the compounding and dispensing of drugs and medicines. Such business training will be included as time will permit in the three-year course. Students desiring further business training can complete in one year more, the four-year combined scientific and business course. In this four-year course the student receives training in economics, psychology, business law, accounting, advertising, salesmanship and business management, useful in the every day life of the retail pharmacist.



Students desiring more extensive training in scientific pharmacy may complete the three-year course by including advanced work in prescriptions, manufacturing pharmacy, toxicology, physiological chemistry and bacteriology. Graduates of this course are trained for positions in strictly prescription stores and for work in clinical diagnosis.

Graduates of the four-year scientific courses are trained for positions as expert laboratory workers in State and Federal laboratories, bacteriologists for physicians, city boards of health, and for State and Federal laboratories, manufacturing pharmacists for large pharmaceutical houses, and as teachers in colleges of pharmacy.

It should be noted that the college sets a high standard for pharmaceutical training and that a number of opportunities are open to graduates who take the time to prepare themselves thoroughly for responsible positions.

*Preparation for Medicine*—Students desiring training that will give them clear entrance to colleges of medicine and also professional training in pharmacy should refer to curriculum number 4, page 13 of this bulletin. Students completing this course receive both the Ph.C. and B.S. degrees at the end of the four-year course. Pharmaceutical training is an excellent preparation for medicine. It gives the student a knowledge of drugs and medicines that can be obtained in no other way and the graduate in pharmacy who completes medicine has the benefit of the two professions.

*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.

#### GENERAL INFORMATION

*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.

*Food and Drug Analysis*—Enactment of the Food and Drug Act by Congress, and of similar legislation by most of the states (Washington included), has given great importance to pharmaceutical education. It is at once apparent that knowledge of drugs is equally important with chemistry in the administration and enforcement of this legislation. The graduate in chemistry is not wholly qualified to act as a food and drug inspection chemist for the government, states, private individuals, and corporations, if he is not trained in those subjects included in the collective name of pharmacy. These allied subjects are: Theory and practice of pharmacy, manufacturing pharmacy, drug assaying, pharmaceutical botany, study of

the United States Pharmacopoeia and National Formulary, pharmacognosy, materia medica and therapeutics, etc. A great many pharmaceutical chemists are needed to carry out the analytical processes involved in the enforcement of this legislation, but the number of men adequately trained is very limited. Students with high school training are urged to consider these opportunities and to prepare themselves for such positions. The dean of the College of Pharmacy is chemist for the Washington State Department of Agriculture and is in close touch with government food and drug work. Courses are offered fitting the student for this line of work.

*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 side 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.

*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 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.

*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. Among places visited in 1928-29 were Stewart & Holmes Drug Company, branch houses of Parke, Davis & Co., H. K. Mulford Company and some of the leading prescription and commercial pharmacies of the city, and to the hydrastis and ginseng farm of Mr. C. E. Thorpe near the University campus.

*Laboratories*—For description of pharmacy, materia medica and chemistry laboratories, see page 47.

*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, 59, 60.

*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.

## GRADUATE STANDING

*Admission to the Five-year Course Leading to the Degree of Master of Science in Pharmacy*—Candidates for the degree of master of science 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 pharmaceutical chemist (Ph.C.) will be conferred upon any student who has complied with the entrance conditions and completed the three-year course.

2. 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. This degree with honors may be conferred upon a student in the College of Pharmacy if recommended for this distinction by the pharmacy faculty.

3. 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.

4. The degree of doctor of philosophy (Ph.D.) with major and thesis in the pharmaceutical field may be taken by meeting all requirements of the graduate school. The Graduate School section, page 214, should be consulted for information concerning graduate degrees.

## CURRICULA REQUIRED FOR GRADUATION

1. A three-year course which prepares its graduates for responsible positions as practical pharmacists. The first two years of all courses are the same. At the beginning of the third year the student must select the type of training he wishes for the next one or two years. Opportunity is given to specialize in advanced prescription and manufacturing pharmacy, business courses including economics, business law, accounting, business report writing, advertising, salesmanship, income tax problems, etc., food chemistry, advanced materia medica and medicinal plant cultivation, advanced pharmaceutical chemistry, toxicology and clinical diagnosis, bacteriology, and other pre-medical subjects.

2. A four-year scientific course which offers well-rounded scientific and liberal training. Graduates of this course are prepared for positions as (a) practical and manufacturing pharmacists; (b) teachers in colleges of pharmacy; (c) food and drug inspection chemists and bacteriologists in the United States Civil Service; (d) pharmaceutical journalism.

3. A four-year combined scientific and business course which includes the regular pharmacy work of the three-year course together with advanced training in pharmacy, and courses in the College of Business Administration and Schools of Journalism and Law which insure the student a thorough business training. Special attention will be given to courses in business law, advertising, accounting, salesmanship, insurance, money and banking and business organization. This course is designed to produce well trained men for either retail or wholesale pharmacy.

4. A four-year pharmacy course which includes all of the required work of the three-year course in pharmacy and such subjects as will give the graduate clear entrance to medical schools. A student completing this course and a course in medicine has the benefit of training in the two professions. The two degrees Ph.C. and B.S. are given at the completion of this course.

5. A five-year course offers opportunity to the four-year graduate to do graduate and research work in some line of scientific pharmacy and graduate work in some branch of allied science. Graduates of this course are prepared for responsible positions in many different lines of work.

### 1. WITH DEGREE OF PHARMACEUTICAL CHEMIST. (Three-Year Course.)

#### FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Pharmacy 1 .....	5	Pharmacy 2 .....	5	Pharmacy 3 .....	5
Chemistry 8 .....	5	Chemistry 9 .....	5	Chemistry 10 .....	5
Botany 13 .....	5	Botany 14 .....	4	Physiology 6 .....	5
Mil. Sci. or Phys. Ed..	1½	Pharmacy 4 .....	2	Mil. Sci. or Phys. Ed..	1½
		Mil. Sci. or Phys. Ed..	1½		

#### SECOND YEAR

Chemistry 37 .....	5	Chemistry 38 .....	5	Chemistry 39 .....	5
Pharmacy 5 .....	5	Pharmacy 6 .....	5	Pharmacy 7 .....	4
Pharmacy 9 .....	3	Pharmacy 10 .....	3	Pharmacy 11 .....	3
Pharmacy 12 .....	3	Pharmacy 13 .....	3	Pharmacy 15 .....	1
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½	English 4 .....	3
				Mil. Sci. or Phys. Ed..	1½

#### THIRD YEAR

Pharmacy 101 .....	2	Pharmacy 102 .....	2	Pharmacy 103 .....	2
Pharmacy 117 .....	2	Pharmacy 118 .....	2	Pharmacy 119 .....	2
Bacteriology 101 .....	5	Approved Elective .....	11	Approved Elective .....	0
Approved Elective .....	6			Pol. Sci. 101 .....	2

Total scholastic hours for graduation—135 plus 10 hours of military or physical education. Electives in junior year may be arranged to meet requirements of any one of the four-year courses.

### 2. WITH DEGREE OF BACHELOR OF SCIENCE. (Four-Year Scientific Course.)

#### FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Pharmacy 1 .....	5	Pharmacy 2 .....	5	Pharmacy 3 .....	5
Chemistry 8 .....	5	Chemistry 9 .....	5	Chemistry 10 .....	5
Botany 13 .....	5	Botany 14 .....	4	Physiology 6 .....	5
Mil. Sci. or Phys. Ed..	1½	Pharmacy 4 .....	2	Mil. Sci. or Phys. Ed..	1½
		Mil. Sci. or Phys. Ed..	1½		

#### SECOND YEAR

Chemistry 37 .....	5	Chemistry 38 .....	5	Chemistry 39 .....	5
Pharmacy 5 .....	5	Pharmacy 6 .....	5	Pharmacy 7 .....	4
Pharmacy 9 .....	3	Pharmacy 10 .....	3	Pharmacy 11 .....	3
Pharmacy 12 .....	3	Pharmacy 13 .....	3	Pharmacy 15 .....	1
Mil. Sci. or Phys. Ed..	1½	Mil. Sci. or Phys. Ed..	1½	English 4 .....	3
				Mil. Sci. or Phys. Ed..	1½

## THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Pharmacy 101 .....	2	Pharmacy 102 .....	2	Pharmacy 103 .....	2
Pharmacy 117 .....	2	Pharmacy 118 .....	2	Pharmacy 110 .....	2
Pharmacy 125 .....	1	Pharmacy 126 .....	1	Pharmacy 127 .....	1
Pharmacy 113 .....	5	Pharmacy 114 .....	5	Pharmacy 115 .....	5
Bacteriology 101 .....	5	Approved Elective .....	5	Pharmacy 112 .....	3
				Approved Elective .....	2

## FOURTH YEAR

Physics 1 .....	5	Physics 2 .....	5	Pol. Sci. 101.....	2
Pharmacy 195 .....	5	Pharmacy 196 .....	5	Pharmacy 197 .....	5
Approved Elective .....	5	Approved Elective .....	5	Approved Elective .....	8

Total scholastic hours for graduation—180 plus 10 hours in military science or physical education.

### 3. WITH DEGREE OF BACHELOR OF SCIENCE. (Four-Year Combined Scientific and Business Course.)

## FIRST YEAR

(Same as for Curriculum 2)

## SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chemistry 37 .....	5	Chemistry 38 .....	5	Chemistry 39 .....	5
Pharmacy 5 .....	5	Pharmacy 6 .....	5	Pharmacy 7 .....	4
Pharmacy 9 .....	3	Pharmacy 10 .....	3	Pharmacy 11 .....	3
Pharmacy 12 .....	3	Pharmacy 13 .....	3	Pharmacy 15 .....	1
Mil. Sci. or Phys. Ed.. 1½		Mil. Sci. or Phys. Ed.. 1½		English 4 .....	3
				Mil. Sci. or Phys. Ed.. 1½	

## THIRD YEAR

Bus. Admin. 54 (Law). 3	Bus. Admin. 55 (Law). 3	Bus. Admin. 56 (Law). 3
Pharmacy 101 .....	Pharmacy 102 .....	Pharmacy 103 .....
Pharmacy 117 .....	Pharmacy 118 .....	Pharmacy 110 .....
Pharmacy 125 .....	Pharmacy 126 .....	Pharmacy 127 .....
Pharmacy 113 .....	Pharmacy 114 .....	Pharmacy 115 .....
Bacteriology 101 .....	Psychology 1 .....	Pharmacy 112 .....

## FOURTH YEAR

Bus. Adm. 62 (Acc'tg). 5	Bus. Adm. 63 (Acc'tg). 5	Bus. Adm. 3 (Econom.) 3
Bus. Admin. 146 .....	Bus. Admin. 147..... 5	Approved Elective .....
Pharmacy 195 .....	Pharmacy 196 .....	Pharmacy 197 .....
		Pol. Sci. 101..... 2

Total scholastic hours for graduation—180 plus 10 hours in military science or physical education.

### 4. WITH DEGREE OF BACHELOR OF SCIENCE. (Four-Year Pharmacy Course.)

## FIRST YEAR

(Same as for Curriculum 2)

## SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chemistry 37 .....	5	Chemistry 38 .....	5	Chemistry 39 .....	5
Pharmacy 5 .....	5	Pharmacy 6 .....	5	Pharmacy 7 .....	4
Pharmacy 9 .....	3	Pharmacy 10 .....	3	Pharmacy 11 .....	3
Pharmacy 12 .....	3	Pharmacy 13 .....	3	Pharmacy 15 .....	1
Mil. Sci. or Phys. Ed.. 1½		Mil. Sci. or Phys. Ed.. 1½		Elective .....	3
				Mil. Sci. or Phys. Ed.. 1½	

## THIRD YEAR

Physics 1 .....	5	Physics 2 .....	5	Physics 3 .....	5
Bacteriology 101 .....	5	English 1 .....	5	English 2 .....	5
Foreign Language .....	5	Foreign Language .....	5	Foreign Language .....	5

## FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Pharmacy 101 .....	2	Pharmacy 102 .....	2	Pharmacy 103 .....	2
Pharmacy 117 .....	2	Pharmacy 118 .....	2	Pharmacy 119 .....	2
Pharmacy 125 .....	1	Pharmacy 126 .....	1	Pharmacy 127 .....	1
Zoology 3 .....	5	Zoology 4 .....	5	Approved Elective .....	8
Approved Elective .....	5	Approved Elective .....	5	Pol. Sci. 101.....	2
Total scholastic hours for graduation—180 plus 10 hours in military science or physical education.					

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### 5. 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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### 6. WITH DEGREE OF DOCTOR OF PHILOSOPHY.

The degree of doctor of philosophy (Ph.D.) with major and thesis in the pharmaceutical field may be taken by meeting all requirements of the graduate school. The Graduate School section, page 214, 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 Biological Station.

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 190,414 volumes, and receives virtually all of the publications of learned societies. The law library contains approximately 53,563 volumes. The Seattle public library, containing around 412,000 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 of 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.

*Puget Sound Biological Station*—The Puget Sound Biological Station, open during the summer quarter for classes and to research workers by special arrangement at other times, is located at Friday Harbor in San Juan County. This region is unsurpassed in natural advantages for a marine biological laboratory, perhaps the most fortunate in the country. The very varied conditions result in the presence of a very diverse flora and fauna. The protected shores make it easy and comparatively safe to get about.

The sea life embraces a great abundance of the following animal forms: hydroids, echinoderms, shore crabs, worms, bivalves, gastropods, nudibranchs, star fish, sea urchins, anemones, sea-cucumbers and barnacles, medusae and jelly fish, and a hundred species of other fish. Water fowl nest on rocky cliffs.

All of the four groups of algae are abundantly represented, between 75 and 100 species being found, exclusive of microscopic forms. Among the brown algae, the kelps predominate, *Nereocystis* being the most abundant, though the other species of kelp are common. *Fucus* is the most prevalent of the rock weeds. Among the red algae are *Polysiphonia*, *Gigartina*, *Porphyra* and *Ampiroa*; among the green algae, *Ulva*, *Enteromorpha* and *Codium*; and among the blue-green algae, *Nostoc* and *Dermocarpa*. Diatoms of many forms abound.

Which this rich fauna and flora, some of which are available in shore work and others brought up by the dredge, there are large opportunities for work in taxonomy, morphology, cytology, ecology and physiology. Since the region is still somewhat new scientifically, there is much important work to be done in taxonomy and local distribution. As there are several forms of which the life history is not completely known, the morphological work is attractive. The problems in physiology, both in the field and in the laboratory, are numerous. The opportunities for work in ecology are excellent and many of them will have important economic bearing on fisheries problems. Thus among the important lines of investigation may be mentioned study on the diatoms, bacteria, and various fish parasites.

The University owns 484 acres with about two miles of shore line, and the state has made the whole county a marine preserve. Three new buildings have been erected within the past three years; two of them are permanent fireproof laboratory buildings. The station publishes a series, now in its sixth volume, known as the Publications of the Puget Sound Biological Station. There is a station library of about 2,800 volumes.



## 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 March 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 March 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 Effie I. Raitt Fellowship*—The Effie I. Raitt fellowship of \$600 is offered annually to a graduate student in home economics for research work in nutrition.

*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. A fair amount of credit toward the doctor's degree may also be earned in the summer quarter.

*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

*Doctors 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 train-

ing 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.

2. Completion of courses of study in a major and one or two minor subjects. This requirement as to the number of minors, however, may in exceptional cases be modified by action of the Graduate Council, making it possible for the candidate to offer more than two minors, or no minor at all. What subjects may be offered as minors shall be determined by the major department with approval of the Graduate Council. The passing grades for advanced degrees are *A* and *B*, *S* being used to indicate satisfactory work in a hyphenated course so far as the course has progressed, such work not to be counted toward a major or minor until the final examination.

These courses of study cover at least two years of work. The work of the first year is virtually identical with that for the master's degree, and normally the candidate will wish to take this degree incidentally; the work of the second year is of still more advanced character. Not earlier than the end of the second year and at least a year before the time when the candidate expects to take the degree, the major and minor departments supplemented by a representative from the graduate council, shall submit the candidate to a careful oral and written examination, 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 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 committee of the major department, of which the instructor in charge shall be a member. If the committee is divided in opinion, the case shall be decided by the graduate council, with right of appeal to the graduate faculty. At least two weeks before the date on which the candidate expects to take the degree, two copies of the thesis in typewritten form or printed form (or library hand, in case the thesis is of such a character that it cannot be typewritten) shall be deposited with the librarian for permanent preservation in the University archives. The thesis must meet the approval of the librarian as to form, and the cost of binding for one copy must be deposited with the thesis.

6. A statement certifying that all courses and examinations have been passed, and that the thesis has been accepted and properly filed in the library, shall be presented to the dean at least one week before graduation. This statement must bear the signatures of all instructors in charge of the student's work, 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 Fisheries.
- Master of Science in Pharmacy.
- Master of Science in Home Economics.
- Master of Arts in Music.
- Master of Arts in Business Administration.
- Master of Science in Physical 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.

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 upward 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 1929-1930.

Courses preceded by \*\* are given if a sufficient number of students elect them.

## DEPARTMENTS OF INSTRUCTION

### AERONAUTICAL ENGINEERING

Aeronautical Laboratory

*Professor Kirsten*

101. *Aerodynamics*—Study of air-flow phenomena and of the aerodynamical characteristics of air foils and air-foil combinations. Qualitative and quantitative wind-tunnel testing in two-foot and four-foot tunnels. Prerequisite, junior standing. Lab. fee, \$2. Three credits; autumn, winter, spring. Kirsten, \_\_\_\_\_.

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. Lab. fee, \$2. Three credits; autumn, winter, spring. \_\_\_\_\_.

111. *Airplane Design*—Design of an airplane for a given prescribed duty; co-ordination of its parts in assembly drawing; calculation of forces and their lines of action on the airplane structure for normal flight conditions. Prerequisite, A.E. 101. Three credits; autumn, winter, spring. Miller.

112. *Advanced Airplane Design*—Stress analysis of the structural parts of an airplane; performance calculations; making and testing of model in wind tunnel. Prerequisite, A.E. 111. Three credits; autumn, winter, spring. \_\_\_\_\_.

113. *Airplane Performance*—Calculation of performance for different types of airplanes with check calculations from wind tunnel tests. Prerequisite, A.E. 112. Lab. fee, \$2. Three credits; spring. \_\_\_\_\_.

121. *Airships*—Study of lighter-than-air craft, aerostatics and airship design. Prerequisite, A.E. 101. Lab. fee, \$2. Three credits; spring. Kirsten.

141. *Aerial Propulsion*—Study of several methods of screw propeller design; design of a standard screw propeller and performance calculations. Prerequisite, A.E. 101. Three credits; autumn, 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. Lab. fee, \$2. Three credits; winter. Kirsten.

151. *Special Aeronautical Designs*—Study of helicopters, cyclocopters, ornithopters and auto-gyros. Prerequisite, A.E. 102. Three credits; spring. Kirsten.

161. *Aerial Transportation*—Study of landing fields and air-craft terminals; study of economics in operation and maintenance of aerial transportation lines. Prerequisites, A.E. 111, 121, 141. Three credits; spring. Miller.

162. *Advanced Aerial Transportation*—Layout and design of landing fields. Study of traffic regulations, problems of air-way administration of transportation lines. Prerequisite, A.E. 161. Three credits. \_\_\_\_\_.



171. *Aerial Navigation*—Map reading and course plotting; determining position by longitude and latitude; study of compass; meteorology. Lab. fee, \$2. Three credits.

#### ENGINEERING ENGLISH

For courses in Engineering English, see Department of English, courses 7, 100, 102, 103.

#### ANATOMY

Anatomy Building

*Professor Worcester*

#### GROSS ANATOMY

25. *Anatomy*—For hospital students. Lab. fee, \$1. Three credits; autumn, winter, spring. Worcester.

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.

104. *Topographic Anatomy*—Cross and sagittal sections for correlation. Prerequisites, Anat. 101, 102, 103. Lab. fee, \$3. Four credits; autumn, winter, spring. Worcester.

108. *Special Dissections*—Designed for physicians or students who have completed the above courses in gross anatomy. Lab. fee, \$3. Credits to be arranged. Autumn, winter, spring. Worcester.

110, 111, 112. *Special Demonstrations*—Designed for physical education and bacteriology majors. Lab. fee, \$1. Credits and hours to be arranged; autumn, winter, spring. Worcester.

#### 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-med students but open to others. Lab. fee, \$3. Six credits a quarter; spring. Worcester.

200. *Research*—Graduate and research work in anatomy for those qualified. Credits and time arranged. Autumn, winter, spring. Worcester.

# ANTHROPOLOGY

Museum and Education Hall

*Professor Spier<sup>1</sup>; Associate Jacobs and Staff*

51. *General Introduction to Anthropology*—A survey of culture history and its processes of change and development; the origin and developments of arts and industries; human races; prehistory; primitive languages, religions, mythologies, oral literatures, customs and social life. Five credits; autumn, winter. Jacobs.

52. *Primitive Society*—Hypothetic origins, processes of change, and the customs and patterning of such aspects of society as morals, the family, class, rank, government, clan, religion and other associations. Five credits; spring. Staff.

101. *Cultures of the American Indians*—A survey of their material cultures, languages, societal institutions, governments, art, folklore and literatures, religions, philosophies. Prerequisite, Anthro. 51 or 52 or instructor's permission. Five credits; spring. Jacobs.

110. *Prehistory*—A survey of ancient cultures and peoples based upon knowledge of ruins, cave and ground excavations; ancient fossil remains and races; old world history before written records; theories and methods of archaeology. Five credits; spring. Staff.

111. *Northwest Pacific Coast of North America*—A survey of the cultures of the Indian tribes west of the Rockies from Oregon through Alaska with especial emphasis upon western Washington. Five credits; spring. Staff.

141. *Primitive Art and Literature*—Esthetic theories and the esthetic life of pre-literate peoples; their artistry in wood, bone, stone and metal; in basketry and weaving; their music, dance, ritual and religion, folklore, mythology, narrative, chants, poetry and philosophy. Five credits; spring. Staff.

163. *Racial History*—Race classifications; fossil remains of early races; physical anthropology and statistics; inheritance and growth of traits. Three credits; winter. Staff.

185. *Primitive Social and Political Institutions*—Theories of development. Instructor's permission necessary. Three credits; winter. Staff.

190, 191, 192. *Research*—Independent studies in field or on campus with seminars and conferences. Instructor's permission necessary. Credits and hours to be arranged. Autumn, winter, spring. Jacobs.

## COURSES FOR GRADUATES ONLY

204, 205. *Anthropological Methods and Theories*—Analysis of culture; historical and psychological methods; theories of culture growth. Three credits; winter, spring. Jacobs.

<sup>1</sup> Absent on leave 1929-30.

## ARCHITECTURE

## Architecture Building

*Professor Thomas; Associate Professor May; Assistant Professors Herrman, Gowen; Lecturer Alden; Instructors Pries, Pearce*

(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, twenty hours of which are provided in the curriculum. The romance languages, particularly French, should be chosen, though freedom of choice is allowed.

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.†

†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.

101-102-103. *History of Architecture*—The renaissance; a comparative study of the periods in European architecture. Illustrated lectures and library research. Prerequisite, Arch. 53. Two credits a quarter; autumn, winter, spring. Herrman.

104, 105, 106, 107. *Architectural Design, Grade II*—Advanced problems in design done under individual criticism. (B.A.I.D. Class B Projet). Lab. fee, \$7.50 for the year. Prerequisite, Arch. Design, Grade I. Five credits any quarter; autumn, winter, spring. Herrman.†

112, 113. *Freehand Drawing*—Studies of casts of the human figure. Charcoal, flat wash, and pencil. Lab. fee, \$1. Prerequisite, P.S.D. 34. Two 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 subject. 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.†

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.

†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, Herman.

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.†

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) navigators and engineers who need some knowledge of the science as part of their technical equipment.

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

### Science Hall

Professor Weinzirl, Assistant Professor Hoffstadt, Lecturer G. A. Magnusson, Associate Gerdeman 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 Canner's Association.
- W. E. Gibb, B.S., Director Virginia Mason Hospital.
- D. H. Nickson, M.D., Director Swedish Hospital.
- G. A. Magnusson, M.D., Director Physicians' Clinical.

Note—Fee for Design, Grades I, II, III, is \$7.50 for academic year unless the student has previously registered for preceding grade the same academic year.

†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.

The work in bacteriology provides training along the following lines: (a) As part of a liberal education; (b) as applied to medicine, nursing, pharmacy, fisheries, home economics, sanitary engineering, chemistry; (c) for the preparation of technicians and bacteriologists; (d) for advanced degrees.

101. *General Bacteriology*—Technique in growing and examining bacteria, identification of species, common disease bacteria. Prerequisite, Chem. 2. Prerequisite for advanced degrees. Lab. fee, \$4. Five credits; autumn, winter, spring, summer. Weinzirl and Staff.

102. *Sanitary Bacteriology*—Water supplies and sewage disposal; meat, milk and other foods; certain industrial applications. Prerequisite, Bact. 101. Lab. fee, \$4. Five credits; winter. Weinzirl and Hoffstadt.

103. *Public Hygiene*—Conservation of health; prevention of diseases; school hygiene; industrial hygiene, etc. 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*—Detailed 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. Magnusson and 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 inflammation, degeneration and tumors. Prerequisite, Anat. 105. Lab. fee, \$5. Five credits; autumn, winter, spring. Hoffstadt.

120, 121, 122. *Applied Bacteriology*—Work in practical laboratories, 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. Weinzirl.

126, 127, 128. *Journal Survey*—One credit; autumn, winter, spring. Hoffstadt.

#### COURSES FOR GRADUATES ONLY

204, 205, 206. *Advanced Bacteriology*—Work on assigned topics. Under this head nearly all types of work can be provided. Time and credit to be arranged. Autumn, winter, spring, summer. Weinzirl.

207, 208, 209. *Seminar*—Two credits; autumn, tuberculosis; winter, filterable viruses; spring, public health administration. Weinzirl, Hoffstadt.

210, 211, 212. *Research*—Investigation of assigned problems. Open to qualified students after consultation. Credits to be arranged; autumn, winter, spring, summer. Weinzirl and staff.

## 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. 160A, Bot. 140, 141, 142, 143, 144, 145, are suggested.

For pharmacy students: 13, 14.

For forestry students: 11, 12, 101, 111, 140, 141, 142.

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, 12. *Foresters' Botany*—Types of plants illustrating the advance in complexity. For forestry students. Lab fee, \$2. Five credits a quarter; winter and spring. 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, winter; four credits, spring. 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 or spring. Hotson, Metzger.

101. *Landscape Gardening*—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 unless courses 11 and 12 are taken in the freshman year. 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; autumn. 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.

120. *History of Botany*—The great ideas from the dawn of history to date. Three 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. 160A.

#### 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. 12 or 107, 145. Lab. fee, \$3. Five credits; any quarter. Rigg.

281. *Physiology of the Fungi*—Prerequisites, Bot. 142, 145, 280. Lab. fee, \$3. Five credits; any quarter. Rigg.



## CERAMICS

Mines Hall

See Mining, Metallurgy and Ceramics.

## CHEMISTRY AND CHEMICAL ENGINEERING

Bagley Hall

*Professors Benson, Johnson, Dehn, Smith, Tartar; Associate Professors Thompson, Lynn; Assistant Professors Beuschlein, Powell, Norris; Instructor Sivertz; Associates Radford, Jackson, 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.

The fee for each laboratory course is \$6.50 a quarter. 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. 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. 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. 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. 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. Five credits a quarter; any quarter.

Smith, Tartar, Thompson, Powell, Sivertz.

37-38-39. *Organic Pharmaceutical Chemistry*—Organic chemicals of the U.S. Pharmacopoeia. Open only to pharmacy students. Prerequisite, Chem. 10 or its equivalent. Three lectures and two laboratory periods a week. Five credits a quarter; autumn, winter, spring. Johnson.

52. *Chemical Technology*—Application of mathematics, physics, and chemistry to unit chemical operations. No fee. Prerequisites Chem. 23, Physics 1 or 97 and Math. 61. Three lectures. Three credits; spring. Beuschlein.

55. *Forest Products*—Prerequisite, Chem. 2 or 22. Three credits; spring. Benson.

101. *Advanced Qualitative Analysis*—Two lectures and three laboratory periods a week. Prerequisite, Chem. 23 or its equivalent. 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. Four credits; spring. Norris.

109. *Quantitative Analysis*—Gravimetric analysis. Prerequisite, Chem. 23 or its equivalent. Two lectures and three laboratory periods a week. Five credits; autumn, winter. Thompson.

110. *Quantitative Analysis*—Volumetric analysis. Two lectures and three laboratory periods a week. Prerequisite, Chem. 109. 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. 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. 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. Three credits. Two lectures and one laboratory period. Winter. Benson.

121, 122, 123. *Industrial Chemistry*—Autumn—fuel, gases, cements, refractories, iron, steel, and alloys; winter—processes for manufacture of acids, alkalis; spring—organic industrial chemistry, oils, fats, paints, rubber, cellulose products. Three lectures and two laboratory periods a week. Prerequisite, Chem. 52, 111 or equivalent. 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. Five credits a quarter; winter, spring. Powell.

131, 132, 133. *Organic Chemistry*—For major students in chemistry and for students in the College of Science. Three lectures and two laboratory periods a week. Prerequisite, Chem. 23, or its equivalent. Five credits; autumn, winter, spring. Dehn.

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. 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. 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. 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. Five credits; spring.

Norris

#### 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 Water*—Study of natural waters with special emphasis upon sea water. Prerequisites, chem. 111 or equivalent. Three credits. Two lectures and one laboratory period. 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. 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. 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. 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. Three credits; autumn.

Norris.

166. *Biochemical Preparations*—Preparations of special substances involving biochemical methods. 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. 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. Five credits a quarter; autumn, winter, spring. Tartar, Sivertz.

190, 191. *History of Chemistry*—(Offered every other year, alternating with 205, 206, 207). Lectures and assigned readings. Prerequisite, Chem. 129, 182. No fee. Two credits; autumn, winter. Smith.

*Teachers' Course in Chemistry*—See Educ. 160B.

#### 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). Fundamental properties of substances in the colloidal state. Surface phenomena such as surface tension and absorption. Three lectures. No fee. Three credits; autumn. Tartar.

\*205, 206, 207. *Inorganic Preparations*—(Offered every other year alternating with 190, 191).

208, 209. *Advanced Quantitative Analysis*—Special methods of analytical chemistry. Either quarter may be taken independently. Prerequisite, Chem. 111 or its equivalent. One lecture and two laboratory periods. Three credits; autumn, winter. Thompson.

210, 211, 212. *Organic Preparations*—Preparation of special substances involving representative laboratory methods. Any quarter may be taken independently. \$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). Radioactivity, atomic structure, interrelation of the chemical elements, periodic system, energy exchange in atomic and molecular processes, activated molecules. Prerequisite, Chem. 182. Three lectures. No fee. Three credits; winter, spring. Tartar.

\*218, 219, 220. *Selected Topics in Industrial Chemistry*—An advanced course dealing with the application of fundamental chemical and economic principles to the materials, processes and products of typical industries. Lectures and written reports on journal literature. Prerequisite,

\*Not offered in 1929-30.

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.

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. Tartar.

241, 242, 243. *Advanced Chemical Engineering*—(Offered every other year, alternating with 244, 245, 246). A detailed study of basic unit operations. Flow of fluids, heat transfer, fuels, combustion, gas producers and filtration. Prerequisite, calculus and Chem. 171. No fee. Three credits a quarter; autumn, winter, spring. Beuschlein.

\*244, 245, 246. *Advanced Chemical Engineering*—(Offered every other year, alternating with 241, 242, 243). 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 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

Mines Hall

*Professors More, Harris; Associate Professors May, Wilcox; Assistant Professors Miller, Collier, Hamilton; Instructor Van Horn*

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.

\*Not offered in 1929-30.

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.

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. *Curves and Earthwork*—Complete survey, map, profile and estimate of a railroad or highway project. Field and office practice in the use of horizontal and vertical curves; the measurement and computation of earthwork. Prerequisite, G.E. 21 or C.E. 56. Lab. fee, \$2. Four credits; autumn. Hamilton, Hawthorn.

58. *Survey Office Practice*—Office practice in preparing completed drawings or surveys. Prerequisite, G.E. 21. Two credits; winter.

59. *Advanced Surveying*—Base line measurement and triangulation. Barometric, trigonometric and precise leveling. Astronomical determination of azimuth, latitude and time. Use of plane table. Hydrographic surveying. Prerequisite, G.E. 21. Lab. fee, \$2. Four credits; spring. Hamilton.

100. *Plant Design*—Layout of construction plants and the design of special equipment. Prerequisite, C.E. 132. Two credits; winter.

106. *Sanitation and Plumbing*—For architects. Two credits; winter. A. L. Miller. Hauan.

120. *Transportation Engineering*—An outline of the engineering features of the field of transportation. Prerequisite, C.E. 58. Two credits; autumn. J. W. Miller.

121. *Transportation Engineering*—Theory and practice in the location and design of highways and railways. Prerequisite, C.E. 120. Four credits; spring. J. W. Miller.

123. *Transportation Engineering*—Economics of railway and highway location and construction. Problems in location, operation and maintenance. Three credits; autumn. J. W. Miller.

124. *Highways*—Theory and practice in the design of highways and streets. Engineering considerations in the selection, improvement and maintenance of highway systems. Prerequisite, C. E. 121. Four credits; winter. Hawthorn.

125. *Railways*—The economic theory of railway location and operation. Gradient, curvature, distance, rise and fall. Prerequisite, C.E. 121. Three credits; winter. J. W. Miller.

127. *Yards and Terminals*—Design and operation of railway freight and passenger yards, air and bus terminals. Prerequisite, C. E. 121. Three credits; spring. J. W. Miller.

128. *Transportation Administration*—Highway and railway administration. Railway rates and valuations. Highway jurisprudence and administration. Prerequisite, C.E. 124, 125. Three credits; spring. J. W. Miller.

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. Elements of the design of water supply and sewerage systems and sewage disposal plants. Refuse collection and disposal. Industrial hygiene. Prerequisite, C.E. 142. Lab. fee, \$2. Three credits; spring.

Van Horn.

155. *Water Supply Problems*—Design, cost estimation, construction, operation and maintenance of water systems and purification plants. Prerequisite, C.E. 150. Lab. fee, \$2. Three credits; winter.

Van Horn.

157. *Reclamation*—Reclamation of land by drainage and diking. Elements of irrigation engineering. Prerequisite, C.E. 143. Three credits; autumn.

Van Horn.

158. *Sewerage and Sewage Treatment*—Design, construction, operation and maintenance of sewerage systems and sewage disposal plants. Prerequisite, C.E. 150. Lab. fee, \$2. Three credits; spring.

Van Horn.

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. Junior civil engineers. 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. Prerequisite, 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.*

Requirements for a major: at least 36 hours in the department, chosen from courses other than Greek 11, 13, 15-16, 17; Latin 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 specializing in Greek must take at least ten hours of Latin; one specializing in Latin must take at least ten hours of Greek. At the conclusion of the senior year all major students must take the senior examination. 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

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. Upper division students may earn upper division credit by special work under the direction of the instructor. Five credits; spring. Densmore.

\*12. *Advanced Greek Civilization.*

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*—Greek civilization from the founding of the Delian Confederacy to the death of Socrates. Readings, conferences, and reports. Prerequisite, Greek 5 or equivalent. Three credits a quarter; autumn, winter, spring. Densmore.

104, 105, 106. *Greek Poetry*—Lyric poetry, tragedy, and pastoral poetry. Prerequisite, Greek 5 or equivalent. 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.

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 from Thales to Plotinus. Two to five credits a quarter; autumn, winter, spring. Densmore.

## II. LATIN

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.

\*Not offered in 1929-30.

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 requirement 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.

\*8. *Law Latin and Selections from Roman Law.*

\*9. *Law Latin and Selections from Roman Law.*

\*10. *Law Latin and Selections from Roman Law.*

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 courses 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. Sidey, Read.

22. *Catullus, Latin Literature (Mackail)*—With some exercises in grammar and composition. Prerequisite, three and one-half years' high school Latin. Five credits; winter. Sidey, Read.

\*23. *Vergil: Georgics and Bucolics; Latin Literature (Mackail).*

24. *Sallust: Catiline and Jugurtha; Latin Literature (Mackail)*—With some exercises in grammar and composition. Prerequisite, three and a half years of high school Latin. Five credits; spring. Sidey, Read.

\*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*—Prerequisite, Latin 21, 24, 25 or special permission. Five credits; spring. Stone.

\*103. *Plautus and Terence*—Selected plays.

106. *Syntax and Prose Composition (Advanced)*—Students should, if possible, register for this course in combination with Education 160C, as the work of the two courses is closely correlated. Prerequisite, Latin 100 or 101 or 102 or equivalent. Three credits; autumn. Stone.

\*107. *The Age of Cicero*—Selected portions of Cicero's correspondence, with collateral reading.

108. *Vergil's Aeneid*—Books 7-12. Prerequisite Latin 100 or 101 or 102 or equivalent. Three credits; winter. Stone.

109. *Pliny's Letters*—Selections, with general survey of Latin epistolary literature. Three credits; spring. Stone.

\*Not offered in 1929-30.

\*113. *Roman Home Life and Religion.*

150. *Juvenal*—Selections, with general survey of Latin satire. Two to five credits; winter. Sidey.

\*151. *Cicero: Tusculan Disputations.*

\*152. *Quintilian: Book X and Horace: Ars Poetica.*

153. *Christian Latin*—Selections from Minucius Felix, Augustine, Lactantius and other early Christian writers. Open to graduates and advanced undergraduates. Two to five credits; autumn. Sidey.

155. *Cicero: De Oratore or Brutus and Pro Plancio*—A discussion of Cicero's conception of the art of oratory with some reference to his influence in modern times. 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.

#### COURSES FOR GRADUATES ONLY

210. *Lucretius: De Rerum Natura*—A general study of the poem with special attention to Books I, III, and V. Two to five credits; winter. Sidey.

211. *Latin Novel*—Selected portions of Petronius and Apuleius will be read and a study will be made of the development of Latin Romance. Two to five credits; spring. Sidey.

*Teachers' Course in Latin*—See Educ. 160C.

#### DRAMATIC ART

Denny Hall

*Assistant Professors Lovejoy, Hughes; Associates Crawford, Blanchard, Cecyl B. Lovejoy, Conway*

The work in this department is planned for two classes of students: (a) those who desire knowledge of dramatic art as a part of a liberal education; (b) those who need knowledge of dramatic art as a part of their professional and technical training.

For a major the department requires 73 to 89 credits in dramatic art. Two degrees are offered: (1) Bachelor of Arts in Dramatic Art; (2) Bachelor of Fine Arts, with a Major in Dramatic Art.

Courses 61-62-63, 101-102-103, 104-105-106, 107-108, 114-115-116, are hyphenated courses, and may be taken only in the printed order.

*Lower Division Students*—Lower division students in the department of dramatic art may register only for courses numbered under 100. The exception to this rule is in the case of 107-108, which may be taken in the order named after the student has taken Dramatic Art 5.

\*Not offered in 1929-30.

*Upper Division Students*—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.

*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.

*Students Transferring from other Institutions*—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 as a major 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 work.

5. *Phonetics, Elementary Course*—The sounds of spoken English analyzed as a basis for correcting racial, regional, class and individual defects. Articulation, pronunciation and ear training practice. Use of phonetic-dictionary, cultivation of the speaking voice. Five credits; autumn, winter, spring. Crawford, Cecyl B. Lovejoy.

9, 10. *Theatre Backgrounds*—A general introduction to the study of the modern theatre and drama. Two credits; autumn, winter. Lovejoy.

61-62-63. *Dramatic Interpretation*—Selected plays are used as exercises in dramatic delivery and for the study of effectiveness in the reading of lines. Five credits a quarter; autumn, winter, spring.

101-102-103. *Play-acting*—Practical course in the art of acting. Interpretation of standard and original plays. One lecture and two 2-hour laboratory periods a week. Prerequisite, Dram. Art. 5. Fee, \$1. Three credits a quarter; autumn, winter, spring. Lovejoy, Blanchard.

104-105-106. *Theatre Workshop*—Construction of model and actual stage settings, properties, costumes, masks, stage lighting, general mechanics of the theatre. Two hours lecture, and four hours laboratory. Lab. fee, \$3. Four credits a quarter; autumn, winter, spring. Conway.

107-108. *Advanced Phonetics*—A continuation of D.A. 5. Study of intonation. The oral study of literature. Mastery of foreign sounds. The purpose of this course is to make good speech natural and spontaneous in reading, speaking and acting. Prerequisite, Dram. Art 5. Five credits a quarter; winter, spring. Crawford.

111, 112, 113. *Play-writing*—Principles of dramatic composition, with experimental creative work. Five credits a quarter; autumn, winter, spring. (May receive credit in English.) Hughes.

114-115-116. *Advanced Theatre Workshop*—A continuation of Dram. Art. 104-105-106. Two credits; autumn, winter, spring. Fee, \$2. Conway.

127. *The History of Theatre Art*—Origin and development of theatre art. Physical structure of playhouses. Evolution of stage machinery and settings. Masks, marionettes. Realism, symbolism. Lectures and required readings. Five credits; autumn. (May receive credit in English.) Hughes.

132. *Staging of Shakespeare*—Designed to give the student a working knowledge of Shakespearean production. One play will be studied each quarter and entire plan of production covered. Cutting, interpretation, stage business, costuming, properties and scenery. Three credits; spring.

Lovejoy.

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. (May receive credit in English.)

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 majors 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.

Conway in charge.

*Teachers' Course in Dramatic Art*—See Educ. 160L.

## ECONOMICS AND BUSINESS ADMINISTRATION

### Commerce Hall

*Professors Cox, Gould, Preston, Dakan, Coon, Burd, Skinner; Associate Professors Smith, McMahon, Gregory, Demmery; Assistant Professor Ashley; Lecturers McConahey, Robertson, Davis, Draper, Truax, Foisie; Instructors Van de Walker, Hamack, Miller, Calhoun, Graves, Purdy; Associate Grant.*

*Economics*—Courses 1, 2, 3, 61, 124, 129, 160, 164, 166, 168, 169, 171, 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.

*Finance*—Courses 103, 120, 121, 122, 125, 126, 127, 159, 176, 189, 197.

*Foreign Trade and Consular Service*—Courses 7, 67, 117-118, 127, 143, 144, 145, 173, 195.

*Insurance*—Courses 108, 141, 142, 149, 170.

*Labor*—Courses 60, 128, 139, 161, 162, 165, 166, 167, 207.

*Management*—Courses 130, 163, 167, 172, 196.

*Maritime Commerce*—Courses 42, 49, 53, 67, 104, 107, 113, 119, 127, 149, 151, 152, 195.

*Marketing, Merchandising, and Advertising*—Courses 106, 109, 134, 135, 136, 137, 138, 140, 146, 147, 148, 188, 198.

*Public Utilities*—Courses 131, 132, 133.

*Secretarial Work and Commercial Teaching*—Courses 15, 16, 18, 19, 81, 82, 83, 102, Edu. 160D, Edu. 160DD.

*Statistics*—Courses 59, 175, 177.

*Transportation*—Courses 67, 104, 107, 113, 119, 150, 151, 152, 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. Fee, \$.50. Three credits; spring. Skinner.

7. *Geographic Backgrounds 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 not prerequisite.) Fee, \$.50. Five credits; autumn, winter, spring. Renner and assistants.

15. *Typewriting I*—Fundamental principles of typewriting (B.A. 1 not prerequisite). Fee, \$10. No credit; autumn, winter, spring. Hamack, Graham, Pelz.

16. *Typewriting II*—Devoted to increasing the speed of the student on the typewriter. (B.A. 1 not prerequisite). Fee, \$10. No credit; autumn, winter, spring. Hamack, Graham, Pelz.

18. *Shorthand I*—Fundamental principles of shorthand in the first twelve lessons of the manual. (B.A. 1 not prerequisite). Fee, \$10. No credit; autumn, winter. Hamack, Pelz.

19. *Shorthand II*—Advanced shorthand. Prerequisite, B.A. 18. Fee, \$10. No credit; winter, spring. Hamack.

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 not prerequisite.) Fee, \$.50. 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. Fee, \$.50. Five credits; autumn, winter. (B.A. 1 not prerequisite.) Gould.

50. *Navigation*—Navigational instruments; compass deviation; piloting; dead reckoning; great circle sailing; moon's phases and tidal effects. Prerequisite, Math. 4. Fee, \$.50. Three credits; autumn. Commander Rice and Staff.

51. *Navigation*—Sextants; chronometers; equinoctial system; sidereal, apparent and mean time; horizon system; corrections of sextant altitudes; observations of sun, moon, planets, and stars for latitude. Prerequisite, B. A. 50. Fee, \$.50. Three credits; winter. Commander Rice and Staff.

52. *Navigation*—Solution of the astronomical triangle; lines of position; navigator's work at sea (the day's work). Prerequisite, B.A. 51. Fee, \$.50. Three credits; spring. Commander Rice and Staff.

53. *Navigation*—A survey course. Correction of courses; the sailings, dead reckoning, piloting, latitude, longitude, azimuth, determinations of position at sea by methods of Marc Saint Hilaire and Aquino; compass adjusting. Prerequisite, B.A. 1. Fee, \$.50. Five credits; winter.

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. Fee, \$.50. Three credits; autumn, winter, spring. Ashley.

55. *Business Law*—Continuation of B.A. 54 as outlined. Prerequisite, B. A. 54. Fee, \$.50. Three credits; autumn, winter, spring. Ashley.

56. *Business Law*—Continuation of B.A. 55. Prerequisite, B.A. 54 and B.A. 55. Fee, \$.50. Three credits; autumn, winter, spring. Ashley.

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. Fee, \$.50. Five credits; autumn, winter, spring.

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. Fee, \$.50. 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. Fee, \$.50. Five credits; autumn, spring. McMahan.

61. *Social and Economic Standards of Living*—Their origin and development; class standards and their influence on industry. A comparative study of budgets. Fee, \$.50. Three credits; winter. McMahan.

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. Draper, Van de Walker 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. Draper, 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, Van de Walker 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 not prerequisite). Fee, \$.50. 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. Fee, \$.50. Five credits; autumn, winter, spring. Gould.

81-82. *Secretarial Training I and II*—For students who have a thorough knowledge of shorthand and typewriting, covering the responsibilities placed on the secretary in handling correspondence, letter writing. Prerequisites, B.A. 16 and 19. Fee, \$.5. Five credits; autumn, winter. Hamack.

83. *Office Training and Practice*—General principles of business conduct, ethics of the office, shipping, filing systems, and general handling of work to be assigned as nearly like actual office work as possible. Prerequisites, B.A. 81-82. Fee, \$.5. Three credits; spring. Hamack.

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. Fee, \$.50. Five credits; winter. Draper.

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. Fee, \$.50. Five credits; autumn, winter, spring. Preston.

104. *Economics of Transportation*—Relation of transportation to industry and society; development and present status of American transportation systems; organization of the service; traffic associations; classification territories; routes; traffic agreements; rates and regulations. Fee, \$.50. Five credits; autumn, spring.

106. *The Economics of Marketing and Advertising*—Development of economic principles in marketing and advertising; market processes and systems; the middlemen and their functions. Fee, \$.50. Five credits; autumn, winter, spring. Burd.

107. *Traffic Management*—A study of the traffic problems of American railroads, including classifications, the rate structures of the chief rate-making territories and such matters as import and export rates, reclassification and diversion, demurrage and claims. Fee, \$.50. Five credits; winter.

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. Fee, \$.50. Five credits; winter. Smith.

109. *Advertising Principles and Practice*—What advertising is and does; the advertising department; the advertising agency. Prerequisite, B.A. 106. Fee, \$.50. 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. Fee, \$.50. 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. Fee, \$.50. Prerequisite, B.A. 110. Five credits; autumn, winter, spring. Gregory.

112. *Advanced Accounting*—Bond and stock issue problems; premiums and discounts on securities; funds and reserves; mergers and consolida-



tions; graphs and comparative statements; estate accounting. Prerequisite, B.A. 111. Fee, \$.50. 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. Fee, \$.50. 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. 52. Fee, \$.50. Three credits; autumn.

115. *Business Correspondence*—Business letters; analysis of principles; development of judgment on points of business policy. Prerequisites, English 1 and junior standing. Fee, \$.50. Five credits; autumn, winter, spring. Commander Rice and staff. 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. Fee, \$.50. Five credits each; winter, spring. Skinner.

119. *Introduction to Water Transportation*—Economics of shipping with particular reference to organization and management; ship building and operating costs; rate practice and control, pools, agreements, conferences; ocean routes; shipping subsidies, etc. (B.A. 1 not prerequisite). Fee, \$.50. Five credits; autumn, winter.

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. Fee, \$.50. 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. Fee, \$.50. 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; investment market and its relation to the money market. Prerequisite, B.A. 103. Fee, \$.50. Five credits; spring. Dakan.

124. *Public Finance*—The growth of public expenditures in modern times, the sources of public revenue other than taxation, and the general principles underlying public credit; government ownership of industries, including public utilities, financial aspects of the public land policy, national subsidies to state projects, special assessments, budgetary procedure, and a brief study of some outstanding episodes in the financial history of the United States. Fee, \$.50. Five credits; autumn. Demmery.

125. *Bank Administration*—Methods and machinery of bank operations. Internal organization of the bank; relation of the different functions; accounting methods; finding costs for the bank; problems of bank administration. Prerequisites, B.A. 63, 103. Fee, \$.50. Five credits; winter. Dakan.

126. *Commercial Credit*—Extension of credit; the credit department; sources of information; credit analysis; credit insurance; practical problems. Prerequisite, B.A. 64, 103. Fee, \$.50. 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. Fee, \$.50. Five credits; autumn. Preston.

128. *Human Waste in Industry*—Unemployment; the labor surplus; regularization of employment; personal injuries and accident prevention; unrest and instability. Measurement of wastage; methods of elimination. Fee, \$.50. Three credits; spring. Foisie.

129. *Taxation*—The general principles of taxation followed by a somewhat detailed study of American tax methods, with chief emphasis upon the revenue problems of state and local governments. Consideration will be given to the aggregate burden of taxation in relation to national wealth and income, the respective merits of taxation and borrowing, constitutional limitations, administrative control of assessment methods, the single tax, etc. Fee, \$.50. Five credits; winter. Demmery.

130. *Industrial Analysis and Control*—Using cost statistics and reports as material, will deal with the development of policies for greater efficiency in management. Systems of accounting statistics with emphasis on manufacturing, selling, general administration and financial expenses with their significant ratios considered. Fee, \$.50. 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. Fee, \$.50. Five credits; autumn. Leib.

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. Fee, \$.50. Five credits; winter. Leib.

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. Fee, \$.50. Five credits; spring. Leib.

134. *Marketing Problems*—Application of principles to problems in wholesale and retail distribution, price policies and sales. An advanced course in marketing. Prerequisite, B.A. 106. Fee, \$.50. Five credits; autumn. Burd.

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. Fee, \$.50. Five credits; autumn. Miller.

136. *Market Analysis*—Product analysis; price policies and sales strategy; sales promotion methods. Prerequisite, B. A. 106. Fee, \$.50. Five credits; winter. Burd.

137. *Advertising Campaigns*—Advertising appeals and their presentation; advertising media and their selection; appropriations; campaign plans. Prerequisite, B.A. 106. Fee, \$.50. Five credits; spring. Burd.

\*138. *Sales Management.*

139. *Industrial Relations*—Analysis of modern labor conditions; changing relationships of labor, management, investor group, and the public. Appraisal of methods used to enlarge common interest and diminish conflict between groups. Fee, \$.50. Not open to students who have credit for B.A. 120. Three credits; autumn. Foisie.

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. Fee, \$.50. Five credits; winter. Miller.

141. *Fire Insurance*—Theory and practice of fire insurance; study of the clauses in standard fire policies; apportionment of losses; rate making; fire prevention. Prerequisite, B.A. 108. Fee, \$.50. Five credits. Smith.

142. *Life Insurance*—Functions of life insurance; premiums; reserves; kinds of companies and policies; dividends; lapses. Disability, group and industrial insurance. State regulations of life insurance business. Prerequisite, B.A. 108. Fee, \$.50. Five credits. Smith.

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. Fee, \$.50. 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. Fee, \$.50. 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. Fee, \$.50. 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. Fee, \$.50. 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. Fee, \$.50. Five credits; winter. Grant.

148. *Retail Store Organization Problems*—Fundamental principles underlying departmentalization; financial, personnel, merchandising, publicity and administrative organization. Prerequisite, B.A. 106. Fee, \$.50. Five credits; spring. Grant.

149. *Marine Insurance*—History, principles and practice of marine insurance as applied to ships, freight and cargo. Prerequisite, B.A. 108. Fee, \$.50. Five credits; spring.

150. *Railroad Finance and Administration*—A study of the methods by which railroads are financed and administered; comparison with foreign systems; analysis of annual reports of leading systems; survey of railroad legislation. Fee, \$.50. Five credits; spring.

151. *Rail and Marine Rates*—Principles of rate making, and interpretation of federal and state statutes affecting rail and water rates; influence of competitive forces; traffic geography; classifications; rate adjustments;

survey of decisions of commissions and courts, interstate and local rate problems. Prerequisite, B.A. 104. Fee, \$.50. Five credits; autumn.

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. Fee, \$.50. 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. Fee, \$.50. 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. Fee, \$.50. 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. Fee, \$.50. 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. Fee, \$.50. 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. Fee, \$.50. 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; business cycles. Prerequisite, B.A. 103. Fee, \$.50. 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. Fee, \$.50. Five credits; autumn, winter, spring.

Coon.

161. *Labor Economics*—The labor factor in the development of economic thought. A critical study of current theories. Fee, \$.50. Five credits; winter.

McMahon.

162. *European Labor Problems*—Labor movements of modern Europe; economic and political backgrounds, in relation to types of labor organizations. Fee, \$.50. 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. Fee, \$.50. Five credits; autumn.

Leib.

164. *Land Economics and Real Estate*—Economic principles underlying the utilization of land and other natural resources, with consideration

of the public policies appropriate thereto. Problems of land reclamation and settlement, systems of tenure, valuation, credit taxation and conservation; brief study of economic forces influencing city growth and urban land values as a foundation to the intelligent understanding of the real estate business. Fee, \$.50. Five credits; spring. Demmery.

165. *Labor Legislation*—Public control of industrial maladjustment through labor laws. The law and practice of employment relations. Growth of quasi-judicial commissions administering labor laws. Fee, \$.50. Three credits; winter. Foisie.

166. *Women in Industry*—The evolution of women's work; relative importance of women in industry; social reaction in labor legislation. Fee, \$.50. Two credits; winter. McMahon.

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. Fee, \$.50. Five credits; winter. Leib.

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. Fee, \$.50. Five credits; autumn, spring. Coon.

\*169. *Principles of Real Estate*.

170. *Casualty Insurance*—Study of real estate transactions, interests, liens, sales, transfers, mortgages, valuations, title, credit, fidelity, automobile, tornado, and miscellaneous forms of property and liability insurance. Prerequisite, B.A. 108. Fee, \$.50. Five credits. Smith.

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. Fee, \$.50. Five credits; winter. Coon.

172. *Executive Technique*—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. Fee, \$.50. Five credits; spring. Leib.

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. Fee, \$.50. Five credits; autumn. Skinner.

175. *The Business Cycle*—A brief study of the evidences of regularity in the characteristic fluctuations of business activity, with some consideration of the normal effects of the business cycle upon economic life and economic theory. Prerequisite, B.A. 59. Fee, \$.50. 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. Fee, \$.50. Prerequisites, B.A. 64, 121, and 122. Five credits; spring. Dakan.

177. *Business Forecasting*—Application of the methods of economic statistics to the problem of forecasting business conditions; analysis of the

\*Not offered in 1929-30.

various business forecasting services; reports upon assigned problems. Prerequisite, B.A. 59. Fee, \$.50. Five credits; spring. Demmery.

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. Fee, \$.50. Five credits; spring. McMahon.

184. *Auditing Technique*—Prerequisite, B.A. 112. Fee, \$.50. 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. Fee, \$.50. Five credits; spring. McConahey.

188. ABC. *Apprenticeship in Merchandising*—Students are placed full time in autumn and spring quarters in actual business. 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. Fee, \$.50. 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.

196 ABC. *Research in Management*—Two-five credits; autumn, winter, spring. Leib, Gregory.

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*—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. Foisie.

#### Teachers' Courses in Business Administration

Educ. 160D. *Commercial Teachers' Course*—Five credits (two credits only count in education); spring. Draper.

Educ. 160DD. *Teachers' Course in Shorthand and Typewriting*—Five credits (two credits only count in education); spring. Hamack.

## EDUCATION

## Education Hall

*Professors Uhl, Bolton; Associate Professors Jessup, Williams; Assistant Professors Dvorak, Draper; Instructor Powers; Associates Corbally, Foster and Assistants.*

Note: All special teachers' courses are listed and numbered as education courses.

Course 119 is prerequisite to all other courses in education. Courses 119 and 140 are prerequisite to 145 which should be planned for the autumn or winter terms of the senior year. Placements for the spring term are limited. Courses 119, 140 and 145 and one teachers' course in a special subject, numbered 160, are regularly required for the five-year normal diploma. Normal school students are not permitted to take 140 or 145. They are required to take 119, 150, and from group (2) seven credits in courses numbered above 150.

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 150, 196-197-198, 285-286-287. According to the agreement, students will not be required to purchase more than one text book in any one course.

## I. ELEMENTARY COURSES

119. *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. Three credits; autumn, winter, spring.

Draper.

140. *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. 119. Five credits; autumn, winter, spring.

Williams, Corbally.

145 AB. *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. 119 and 140 or approved equivalent. seven and one-half credits; autumn, winter, spring.

Foster, Corbally, Powers.

Cadets registering for the autumn quarter will report for assignment, Monday of Freshman Week. Those taking cadet teaching the first semester will register for Educ. 145-A, five credits, and for the winter quarter Educ. 145-B, two and one-half credits. Those taking cadet teaching the second semester will register for Educ. 145-B, two and one-half credits, winter, and Educ. 145-A, five credits, spring. (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.

\*146. *Cadet Teaching II.*

Course 140 is prerequisite, except as stated above, to Courses 160A to 160Z. One of the "teachers' courses" is required for the normal diploma.

160A. *Teachers' Course in Botany*—Discussion of texts, subject matter and methods of presenting the subject. Prerequisite, two years of botany. Two credits; autumn. Frye.

160B. *Teachers' Course in Chemistry, Laboratory Methods of Instruction*—No lab. fee. Prerequisite, at least 20 credits of college chemistry of average B grade. Two credits; autumn, winter, spring. Tartar.

160C. *Teachers' Course in 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.

160D. *Commercial Teachers' 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, twenty-five hours of the thirty-five required for a major in commercial teaching including fifteen hours in accounting and B.A. 16, 19, 62, 63, 64. Five credits; spring. Two hours only count as education credits; three hours as business administration. Draper.

160DD. *Teachers' Course in Shorthand and Typewriting*—To prepare students for teaching shorthand and typewriting. Correlation of this work with actual work in business houses. Prerequisites, twenty-five hours of the thirty-five required for a major in commercial teaching, including B.A. 16, 19, 81 and 82. Five credits; spring. Two hours only count as education credit, three hours as business administration. Hamack.

160E. *Teachers' Course in English*—Methods and problems in the teaching of English in the high school. This course or 160EC and 160EL 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 160 EC before entering 160E. Two credits; autumn, winter, spring. Sperlin.

160EC. *Composition in the High School*—The materials and methods of teaching composition to secondary school students. Two credits; autumn, winter. Sperlin.

160EL. *English Literature in the High School*—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.

160F. *Human Geography in the Public Schools*—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.

160G. *Teachers' Course in 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.

160H. *Methods of History Teaching*—With special reference to the

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\*Not offered in 1929-30.



work of the high school. Required of majors in history who expect to teach. Prerequisite, History 160. Two credits; winter. McMahon.

160I, 160J. *Teachers' Course in Home Economics*—Curricula, methods of teaching and equipment. Prerequisite, 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.

160K. *Teachers' Course in News Writing*—Methods and lesson plans for a news writing class in high school. Prerequisites, Jour. 51, 101, 115, 120. Two credits; spring.

Jones.

160L. *Teachers' Course in Dramatic Art*—Two credits; spring.

Lovejoy.

160M. *Teaching of 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.

160N. *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.

Newenham.

160O. *Civics in Secondary Schools*—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.

Hulse.

160P. *Methods of Teaching 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.

160PS. *The Teaching of Public Speaking*—Problems and methods in the organization of courses in debate and oratory and in the preparation of students for special contests. Required of those who intend to teach public speaking. Two credits; spring.

Orr.

160R. *Teachers' Course in 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.

160S. *Teachers' Course in 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.

160T. *Teachers' Course in French*—Aims, and methods best suited to attain them. Prerequisites, French 41, 101, 102, 103, 158, and 159. Two credits; spring.

Frein.

160U. *Teachers' Course in Spanish*—Methods of teaching Spanish. Practice in the classroom. Prerequisite, Span, 101, 102, 103, 159. Two credits; spring.

Ober.

160X. *Teachers' Course in Piano Playing*—Survey of teaching mate-

rial, with supervised practice. Prerequisite, Music 165, 166. Two credits; spring. Alderman.

*Piano Teaching Methods*—See Music 165, 166.

160Z. *Teachers' Course in Zoology*—For students preparing to teach zoology in high schools. Prerequisite, 20 hours in zoology. Two credits; winter. Guberlet.

## II. ADVANCED UNDERGRADUATES AND GRADUATES

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.

150. *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.

151. *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.

### \*154. *Junior High School.*

155. *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.

### \*156. *High School Organisation.*

157. *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. 119. Three credits; autumn. Corbally.

159. *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; winter. Corbally.

162A, 162B, 162C. *History of Education*—A social interpretation of

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\*Not offered in 1929-30.

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. (Not open to students who have credit for Educ. 161). Three credits a quarter; autumn, winter, spring.

\*163. *History of American Education.*

\*164. *The History of Secondary Education.*

165. *Problem Children*—Subnormal, superior, backward, eccentric and delinquent children studied from the point of view of the teacher. Five credits; winter. Dvorak.

167. *Methods and Procedures in High School Instruction*—A course designed especially for normal school graduates not taking Educ. 140. A critical survey and evaluation of types of teaching methods in high schools. Three credits; winter. Williams.

168. *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. 119 and 140. Three credits; autumn. Uhl.

169A-169B. *Technique of Curriculum Making*—A course for advanced students who are interested in 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. Prerequisites, Educ. 119, 154 and 168. Three credits each quarter; winter and spring. Draper.

170. *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 and spring. Bolton.

171A-171B. *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 each quarter; winter and spring. Powers.

\*172. *Psychology of Elementary School Subjects.*

173. *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. 251. Prerequisites, Educ. 119 and 140 or equivalents. Three credits; autumn. Powers.

\*174. *Psychological Problems of Vocational Education.*

176. *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; spring. Corbally.

\*Not offered in 1929-30.

179. *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, Wait, Soule.

181. *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. Bolton.

183. *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.

185. *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' achievement; educational and vocational guidance. Two hours of class work each week and one hour of field study. Registration is limited to those having administrative experience. Three credits; autumn. Draper.

186. *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.

190. *The Elementary School Principal*—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.

191. *School Administration, State and County*—An analysis of modern practice and historical background of the organization, supervision and financial support of public education. Especially planned for superintendents and supervisors, and those interested in school administration. Four credits; autumn. Jessup.

192. *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.

195. *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.

\*196-197-198. *Intelligence and Its Measurement.*

## III. COURSES FOR GRADUATES ONLY

201-202-203. *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.

206. *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 degree in education and normally should be one of the first courses completed for these degrees. Five credits; autumn.

Dvorak.

210-211. *Methods of Educational Research*—Practices and methods in carrying out and writing up research problems. Three credits; autumn, winter.

Dvorak.

212-213. *Comparative Education*—Modern education in foreign countries, especially in Germany, France, England, Norway, Sweden and Canada. Relation between social ideals of nations and their educational systems. Post-war reorganization. Influence upon educational theories and practices in America. Two credits; winter, spring.

Bolton.

215. *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.

222. *Seminar in Social Surveys of School Materials*—Open only to advanced students and limited to twenty. The student will be introduced to a group of influential essays setting forth the several sociological approaches to the problem of selecting socially defensible materials, 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.

232. *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; winter.

Bolton.

235. *Review of Recent Educational Literature*—For graduate students and for teachers and administrators in active service (1) who desire to investigate current educational problems, and (2) who desire to trace old educational interests through recent educational writings. Readings, discussions, reports based on reviews of new books and surveys of present unsolved and controversial problems in magazine literature. Three credits; spring.

Dvorak.

\*241-242-243. *Educational Diagnosis.*

245. *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.

250. *The New Educational 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; autumn. Jessup.

251-252, 253. *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.

257-258. *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.

261-262. *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.

\*271-272-273. *Seminar in Educational Surveys*.

282-283-284. *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.

291. *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.

292. *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. Two credits; winter. Jessup.

293. *Seminar in Administration. (Finance)*—An intensive study of various methods of raising and distributing school revenues. Special consideration to needs in Washington. Four credits; winter. Jessup.

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.

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\*Not offered in 1929-30.

## ELECTRICAL ENGINEERING

## Engineering Hall

*Professors Magnusson, Kirsten, Loew; Assistant Professors Shuck, Hoard, G. S. Smith; Instructors Eastman, Lindblom, Bergstrom, Weir, Applegate.*

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 systems. 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. Four 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. Three credits, winter. Eastman.

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\*\*Will be offered if a sufficient number of students elect the course.

141. *Illumination*—Electric lamps; commercial photometry; adaptation of electric lighting to commercial requirements. Junior or senior elective. Prerequisites, E.E. 109, 110. Lab. fee, \$2. Four credits; spring. Shuck.

152. *Electrical Machine Design*—Complete design of one direct current generator or motor. Prerequisites, E.E. 111, 112. Three credits; winter, spring. 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 system; energy storage in magnetic and dielectric fields; vector diagrams and the symbolic methods of analysis; power factor and power measurements; hysteresis and eddy currents; theory of the transformer, singlephase and polyphase induction motors. To be taken with E.E. 162. Prerequisite, E.E. 111. Six credits; autumn, spring. Loew, Hoard.

162. *Alternating Currents Laboratory*—Experimental work with alternating current machinery. To be taken with E.E. 161. Prerequisite, E.E. 112. Lab. fee, \$4. Four credits; autumn, spring. Smith, 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.

164. *Alternating Current 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*—Location, design, and operation of electric central stations. Prerequisite, E.E. 163, 164. Four credits; spring. Kirsten.

175. *Power Transmission*—Theory, design and operation of electric power transmission lines. Prerequisites, E.E. 163, 164. Five credits; autumn, spring. Loew.

\*\*177. *Electric Public Utilities*—Organization, ownership, valuation rates, service requirements, regulation and public relations. Prerequisites, E.E. 163, 164. Two credits; autumn. Hoard.

180, 182, 184. *Research*—Two to five credits a quarter; autumn, winter, spring. Magnusson.

181. *Radio*—Linear, 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. A complete report of the work is typewritten and bound and a copy deposited in the University library. Two to five credits a quarter; autumn, winter, spring. Loew, Hoard.

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\*\*Will be offered if a sufficient number of students elect the course.



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 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 circuit 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.

#### ENGINEERING SHOPS

*Assistant 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 foundry management. Lab. fee, \$3. One credit; autumn, winter, spring. Sullivan, Schaller.

54. *Forge*—Forge practice, acetylene 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. Lab. fee, \$1. Three credits; winter. Schaller.

120. *Factory Cost Analysis*—Analysis of shop practice with view to determining costs of operation and products. Lab. fee, \$1. 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, Parrington, Benham, Cox, Griffith, Orr; Associate Professors Millman, Harrison; Assistant Professors Hughes, Small, Winther, Rahskopf; Instructors Windesheim, Eby, Ethel, Bird, Cornu; Lecturer Sperlin; Associates Lawson, Hall, Jones, Vickner, Kerrigan, Wagenknecht, Brown, Cederstrom, Nix, Mark; Assistants and Teaching Fellows.*

#### SUGGESTIONS FOR MAJOR STUDENTS

The major requirement in English is from 36 to 60 hours, of which at least 50 per cent must be upper division courses. English 1 and 2, or their equivalent of elementary composition, are required but cannot be counted toward a major.

*Lower Division Students*—The lower division student should first satisfy the requirements of his college, so that he may acquire a background for his English studies. If however, after the fulfilment of these requirements, his schedule permits added work in English, he may register for any lower division English courses. Of these, *Advanced Composition* is especially recommended. If the student intends to minor in English, he should elect *Literary Backgrounds* (64, 65, 66). If he intends to major in English, in addition to advanced composition, he should make his selection from *The Romantic Poets* (83); *Tennyson and Browning* (84); *American Writers* (67, 68, 69); and *Introduction to Shakespeare* (70, 71, 72). Credits in these courses make possible greater specialization in upper division English work, inasmuch as five credits in any one course may be substituted for the upper division recommended course in the same literary period. *The History of the English Language* (117, 118, 119), although an upper division course, is open to prospective majors in English during their sophomore year. As 60 credits, exclusive of freshman composition, is the maximum of English work allowed for a major, the student should avoid registering for more than 20 lower division credits in addition to English 1 and 2.

*Upper Division Students*—Senior Examination. At the conclusion of the senior year all major students are required to take an examination in English. As the minimum requirement of 36 hours for a major subject is commonly inadequate to prepare for the senior examination, it will be well to increase the election materially. The examination will presume (1) a knowledge of the general development of English literature from Anglo-Saxon times and of American literature from 1815-1870; (2) a detailed knowledge of important periods, writers, types of literature, or public speaking; (3) ability to write criticism of the works of the important periods, writers, or types of literature chosen under (2). The department recommends as preparation for this examination the following 3-hour courses: *Chaucer* (131); *Shakespeare* (170); either *Milton and his*

*Contemporaries* (127) or *The Classic Period* (144); *Eighteenth Century Literature* (145 or 146); *American Literature 1815-1870* (163); and two courses from *The Romantic Movement in English Poetry* (174), *The Victorian Poets* (175), and *Nineteenth Century Prose* (137). "Honor Major in English" is a title used to designate a student who has an average of "B" in the English work of his junior year. Such an honor major is admitted to *Major Conference* (191, 192, 193) and may be excused from the senior examination, provided that his record as a student indicates high excellence both in general courses and in his specializations.

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. *Composition*—For students in forestry, fisheries, and pharmacy. Students are required to repeat the course if their work is not of high quality. Three credits; autumn, spring. Miss Lawson in charge.

5. *Composition*—For students in fisheries and forestry. Three credits; 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.

21. *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. Five credits; winter, spring. Hughes.

37. *Argumentation*—Primarily for students in the College of Business 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; winter and 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. Ethel, 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. 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. Milliman, Eby.

70, 71, 72. *Introduction to Shakespeare*—Detailed study of Shakespeare's principal plays. For lower division students who expect to major in English. Three credits; autumn, winter, spring. Wagenknecht.

73, 74, 75. *Introduction to Modern Literature*—Essays on European and American thought of the nineteenth century and after, accompanied by readings in poetry, novel, and drama. Three credits; autumn, winter, spring. Milliman, Harrison, Cornu.

\*80. *Readings in Literature.*

81. *The English Essay*—Selected readings illustrating the development of the English essay. Five credits; autumn, winter. Cornu.

\*82. *Eighteenth Century Writers.*

83. *Romantic Poets*—For lower division students who intend to major in English. Five credits; winter, spring. Ethel.

84. *Tennyson and Browning*—For lower division students who expect to major in English. Five 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.

\*Not offered in 1929-30.

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. *Contemporary Literature: American, French, German*—Special studies in contemporary literature for advanced students. Three credits; autumn, winter, spring. Cox, Harrison, Winther.

105. *Contemporary Literature: Russian, Scandinavian*—Special studies in contemporary literature for advanced students. Three credits; autumn, winter, spring. Harrison, Winther, Cox.

106. *Contemporary Literature: English and Irish*—Special studies in English contemporary literature for advanced students. Three credits; autumn, winter, spring. Winther, Cox, Harrison.

\*107. *Contemporary Drama*.

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. Small.

124, 125. *The English Drama*—Plays representative of the origin and development of English drama to 1642. Three credits; autumn, winter.

\*126. *English Drama: 1660-1780*.

127. *Milton and his Contemporaries*—Three credits; autumn, winter, spring. Ethel.

130. *Medieval Literature*—Old English classics studied in relation to the life and ideals of the Middle Ages. Three credits; autumn. Small.

131. *Medieval Literature: Chaucer*—Selections from the Canterbury Tales. English 151 is a continuation of this course. Three credits; autumn, winter, spring. Griffith, Small, Ethel.

\*132. *Medieval Literature: Middle English*.

\*133. *Fifteenth Century Literature*.

134, 154, 155. *English Literature: 1516-1642*—The non-dramatic prose and verse of the Renaissance and Reformation. Two credits; autumn, winter, spring. Benham.

136. *Prose of the Romantic Period*—Early nineteenth century personal and critical essays. Three credits; autumn, winter. Ethel.

137. *Prose of the Victorian Period*—Later nineteenth century essays

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\*Not offered in 1929-30.

presented with some attention to social movements. Three credits; autumn, winter, spring. Parrington, Winther.

138. *Rhetoric of Public Speaking*—The development of an effective oral style based upon the study of modern public speeches. Prerequisite, English 40. Three credits; winter. Rahskopf.

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. *The Classic Period*—Early eighteenth century prose and poetry. Three credits; autumn, winter, spring. Parrington, Cornu.

145. *Johnson and His Age*—The prose writers of the second half of the eighteenth century in relation to critical, historical, and philosophical backgrounds. Three credits; winter. Cox.

146. *Eighteenth Century Romanticism*—The dawn of romanticism and the changing forms, spirit, and materials in poetry from Thomson to Wordsworth. Three credits; autumn. Cox.

147, 148, 149. *The English Novel*—The development of the English novel from Richardson to Galsworthy. The eighteenth century novel, the romantic novel, and the modern realistic novel in the successive quarters. Three credits; autumn, winter, spring. Cox, ———.

151. *Chaucer: Advanced Course*—Prerequisite, English 131. Three credits, spring. Griffith.

\*152. *Middle English Classics: Advanced Course*.

154, 155. See under 134 above.

161. *American Literature*—A consideration of the colonial mind. Three credits; autumn. Eby.

162, 163. *American Literature*—A study of important writers and movements from 1815 to 1870. Three credits; autumn, winter, spring. Parrington, Harrison, 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. Parrington.

170, 171, 172. *Shakespeare*—The early plays and poems to 1598, the later plays, and selected problems in Shakespearean study in successive quarters. Prerequisite to 172, English 170 or 171 or 70, 71. Three credits; autumn, winter, spring. ———, Winther.

174. *The Romantic Movement in English Poetry*—The works of Wordsworth, Coleridge, Shelley, Byron, and Keats. English 177 follows this course. Not open to students who have credit for English 83. Three credits; autumn, winter, spring. Cox, Ethel.

175. *The Victorian Poets*—Tennyson, Browning, the Pre-Raphaelites, Arnold, Swinburne. Not open to students who have credit for English 84. Three credits; autumn, winter, spring. ———, Winther.

176. *Studies in Victorian Poetry*—Detailed studies in the poetry of

\*Not offered in 1929-30.

Tennyson, Browning, the Pre-Raphaelites, Arnold, and Swinburne. Prerequisite, English 175 or 84. Three credits; spring.

177. *Studies in the Romantic Poets*—Detailed studies of poetical problems and their relation to the intellectual currents of the age in the works of Wordsworth, Coleridge, Shelley, Byron, and Keats. Prerequisite, English 83 or 174. Three credits; spring. Cox.

\*179. *History of English Versification*.

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. Small.

\*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; spring. Rahskopf.

187. *Advanced Voice Problems*—A study of minor voice and speech defects with special attention given to diagnosis and remedy. A laboratory course. Prerequisite, English 43. Fee, \$.50. Three credits; winter. Orr.

188. *Advanced Problems in Speaking*—Laboratory and research. Prerequisite, English 43 and 138. 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. Open only to students who have an average of "B" in the English of their junior year. Three credits; autumn, winter, spring. Harrison in charge.

194. *Major Thesis*—Training in the methods of literary study. Critical reading and the assessment of material. Required of major students who do not take major conference. Open to all majors in English. Three credits; autumn, winter, spring. Winther, Eby.

*Teachers' Course*—See Education 160E, 160EC, 160EL, and 160PS.

For courses in foreign literature taught in English, see Department of General Literature.

#### COURSES FOR GRADUATES ONLY

201, 202, 203. *Introduction to Graduate Study*—Methodology and bibliography of the English language and literature. Normally the first graduate course in English. One credit; autumn, winter, spring. Benham.

204, 205, 206. *Seminar in 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. *Seminar in Pre-Shakespearean Drama*—Two to five credits; autumn, winter, spring. Small.

211, 212, 213. *Seminar in Sixteenth Century Literature: Spenser*—Four or five credits; winter, spring. Padelford.

\*Not offered in 1929-30.

217, 218, 219. *Seminar in Shakespeare*—Problems in the study of Shakespeare and his contemporaries. Two to five credits; autumn, winter, spring.

221, 222, 223. *British Culture in the Seventeenth Century*—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. *Seminar in American Literature*—Two to five credits; autumn, winter, spring. Parrington.

230, 231, 232. *Old English*—Anglo-Saxon grammar; readings in Old English prose and poetry; Beowulf. Three credits; autumn, winter, spring. Small.

\*233, 234. *Advanced Old English*.

\*237. *Gothic*.

240, 241, 242. *Seminar in Nineteenth Century Literature*—Two to five credits; autumn, winter, spring. Cox, ———.

246. *Seminar in Eighteenth Century Literature*—Two to five credits; autumn, winter. 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*.

#### OTHER COURSES WHICH MAY RECEIVE CREDIT IN ENGLISH

*Play-Writing*—See Dramatic Art 111, 112, 113.

*History of Theatre Art*—See Dramatic Art 127.

*Representative Plays*—See Dramatic Art 151, 152, 153.

*Introduction to Theory of Literature*—See General Literature 101.

#### COMPARATIVE PHILOLOGY

The following courses in Comparative Philology are available in the department of Scandinavian Languages and Literature.

190, 191. *Introduction to the Science of Language*—Two credits; autumn, winter. Vickner.

192. *Life of Words*—Two credits; spring. Vickner.

#### FISHERIES

##### Fisheries Hall

*Professors Cobb, Kincaid; Assistant Professors Parks, Crawford; Instructors Jarvis, Schultz.*

1. *History of Fisheries*—History of the fisheries of Europe, Africa and Western Asia from earliest times to the present. Two credits; autumn. Cobb.

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\*Not offered in 1929-30.



2. *History of Fisheries*—History of the Atlantic fisheries of North and South America from earliest times to the present. Two credits; winter. Cobb.

6. *Pacific Fisheries*—General review and history of fisheries of the countries bordering on the Pacific Ocean. Two credits; spring. Cobb.

50. *Elements of Fisheries*—Fishery science, stressing economic and cultural aspects of the subject. Lectures, demonstrations, and occasional trips. Offered only to students not enrolled in the College of Fisheries. Three credits; spring. Jarvis.

53, 54. *Ichthyology*—Structure, classification and habits of economic fishes. Prerequisite, Zool. 1, 2. Lab. fee, \$3. Five credits a quarter; autumn, winter; winter, spring. Schultz.

60. *Aquatic Animals other than Fish*—The natural history of aquatic animals other than fish, such as whales, seals, oysters, clams, crabs, etc. Prerequisite, Zool. 1, 2. Fee, \$1. Three credits; spring. Schultz.

65. *Fishing Vessels and Boats*—Types of fishing vessels and boats; their design, construction and operation. Two credits; spring. Parks.

101, 102, 103. *Fish Culture*—Developmental history and artificial propagation of economic fishes, lobsters, etc. Prerequisite, Fish. 54, and Zool. 5. Lab. fee, \$3. (Fish. 101 repeated in winter quarter.) Five credits a quarter; autumn, winter, spring. Crawford.

104, 105. *Fishery Methods*—Construction and uses of apparatus. Three lectures and two laboratory periods. Lab. fee, \$3. Five credits a quarter; winter, spring. Cobb.

110. *Fresh and Frozen Fishery Products*—Handling, care and transportation of fresh and frozen aquatic animals. Prerequisites, Fish. 54 and Bact. 101. Three lectures and two laboratory periods. Lab. fee, \$4. Five credits; autumn. Jarvis.

111. *Curing of Fishery Products*—Commercial methods of curing and preservation, by drying, salting, smoking, spicing, etc., of aquatic animals. Prerequisite, Fish. 110. Three lectures and two laboratory periods. Lab. fee, \$4. Five credits; winter. Jarvis.

\*\*112. *Oyster and Clam Culture*—Development and propagation of oysters and clams. Prerequisite, Fish. 60. Lab. fee, \$3. Five credits; autumn.

115. *The Economic Fishery Resources of North America*—Fishery resources of the North American Continent and adjacent seas, their development and commerce, and government policies of conservation. Three credits; autumn. Cobb.

120. *Fundamentals of Canning*—Principles on which canning is based; sterilization, including heat penetration, effect of acid foods on bacteria, and fill of can; exhaust and vacuum, including methods of obtaining, purposes, and effect of temperature and altitude upon vacuum; corrosion of tin plate. Prerequisite, Bact. 101. Lab. fee, \$4. Five credits; autumn. Parks.

121. *Canning Machinery and Cannery Management*—Types, installation and operation of canning machinery and equipment; cannery personnel; paper forms used in cannery practice. Prerequisite, Fish. 120. Lab. fee, \$4. Five credits; winter. Parks.

122. *Canning of Fishery Products*—Commercial methods of canning aquatic animals in either tin or glass. Three lectures and two laboratory periods. Prerequisite, Fish. 120. Lab. fee, \$4. Five credits; spring. Parks.

140. *Aquarium Management*—Study and care of aquatic animals and

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\*\*Will be offered if a sufficient number of students elect the course.

plants in balanced and running water aquaria. Three lectures and laboratory period of one hour daily. Lab. fee, \$3. Five credits; autumn.

Crawford.

145. *Food Laws*—Study of federal, state and foreign laws regulating the sale of food products. One lecture a week. One credit; winter. Parks.

147. *Preparation of Secondary Products*—Manufacture of fish meal, fertilizer, oils, glues, leathers and furs from aquatic animals. Prerequisite, Fish. 122. Three lectures and demonstrations. Three credits; winter. Jarvis.

150,151,152. *Problems in Fish or Shellfish Culture and Fisheries Technology*—Students with proper preparation, which should include 15 hours in fish culture, or 15 hours in shellfish culture and Fish. 53, 54, 60, or 15 hours in fishery methods and preparation of fishery products, will be assigned special problems to be worked out under the direction of the instructor. Lab. fee, \$5. Five credits a quarter; autumn, winter, spring.

Cobb and Staff.

154. *Diseases of Fish*—Nature and causes of disease in fish. Three lectures and two laboratory periods. Lab. fee, \$4. Five credits; autumn.

Guberlet.

\*\*175. *Exploration of the Sea and its Relation to Economic Food Fishes*—The influence of various factors in the conditions of life of economic food fishes in the sea. Three credits; spring. Schultz.

\*\*190. *Fishways and Fishstops*—The design, construction and uses of fishways and fishstops. Two lectures and one laboratory period. Senior standing. Three credits; autumn. Cobb.

195, 196, 197. *Seminar*—Assigned readings and reports in current periodical literature. Bibliographical work, discussions and symposia on subjects of general interest to advanced students in fisheries. Prerequisite, senior or graduate standing in fisheries. Two credits; autumn, winter, spring. Cobb and Staff.

#### COURSES FOR GRADUATES

201, 202, 203. *Research Problems*—Investigation of assigned problems. Open to qualified graduates after consultation. Credits and time to be arranged. Lab. fee, \$1 per credit hour. Autumn, winter, spring.

Cobb and staff.

#### FORESTRY AND LUMBERING

Anderson Hall

*Professors Winkenwerder, Kirkland; Associate Professor Grondal; Assistant Professors Alexander, Brandstrom; Instructor Harrar.*

1. *Elementary Dendrology*—Nomenclature, classification and identification of trees, including all northwest species and one type species of each genus of the important timber trees of North America. Required of freshmen. Two recitations, one quiz and two 3-hour laboratory periods a week, field trips additional. Lab. fee, \$2. Five credits; autumn or spring. Alexander, 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.

\*\*Will be offered if a sufficient number of students elect the course.

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.

5. *Woodcraft*—Food and clothing, camp equipment and sanitation, packing a horse, and general woodcraft. One-half of the course is devoted to first aid work. A section will be arranged for students not enrolled in forestry if not less than 12 apply. Two lectures a week; demonstrations and practice work additional. Lab. fee, \$2. Two credits; autumn.

Brandstrom, Alexander, Hall.

6. *General Forestry*—For students not majoring in forestry. Prerequisite to all other courses in forestry for non-majors 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.

7. *Forest Protection*—Protection against insect and fungus attacks, animals, avalanches, land slides, floods, shifting sands. Required of sophomores. Prerequisite, For. 4. Three credits; autumn.

Winkenwerder.

51. *Forest Mensuration*—Principles and methods of computing, scaling, cruising, mapping; construction of volume tables, taper tables, and form factors. Three recitations, two 3-hour laboratory periods. Prerequisite, Math. 51, C.E. 55. Lab. fee, \$2. Five credits; spring.

Alexander and assistant.

52. *Forest Mensuration*—Methods of studying growth in diameter, height and volume; sample plot methods, construction and use of growth and yield tables. Three recitations and two 3-hour laboratory periods. Prerequisite, For. 51. Lab. fee, \$2. Five credits; spring.

Alexander and assistant.

53. *Construction*—Trails, roads, logging railroads, telephone lines, wooden bridges, cabins, barns, and fences; land clearing, United States Forest Service improvement work, and logging construction. Required of sophomores. Prerequisite, G.E. 21 or C.E. 55. Lab. fee, \$2. Three credits; winter.

Clark, Brandstrom.

57. *Silviculture*—Influence of the climatic, physiographic and biotic factors on forest vegetation and the reaction of forests on these factors. Evaluation of site factors. Five credits; autumn or winter.

Alexander.

58. *Silviculture*—Silvical characteristics of tree species, forest types, the silvicultural systems, regional forestry, silviculture. Five credits; winter.

Alexander.

59. *Silviculture*—Practice in collecting data and preparing plans for the silvicultural handling of forest tracts. Field work in methods of cutting, nursery practice, seeding, and planting. Research methods. Lab. fee, \$2. Six credits; spring.

Alexander.

101. *Wood Technology*—Wood structure and identification of commercial timbers of the United States; physical properties of woods; kiln drying. Required of juniors. Prerequisite to all courses in forest products; prerequisites, college botany, For. 1, 10 hours chemistry and Physics 1. Lab. fee, \$2. Five credits; autumn.

Grondal, Harrar.

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. 101, Physics 1 and 2. Lab. fee, \$2. Five credits; winter.

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. Prerequisites, For. 101 and ten hours of chemistry. Three credits; winter. 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.

119. *Forest Administration*—Objects, principles and methods of administering private and public forests and forest industries. Three credits; autumn. Kirkland.

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. Prerequisites, B.A. 1 or 3. Three credits; winter. Kirkland.

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. Prerequisites, For. 52 and 58. Three credits; autumn. Kirkland.

152. *Forest Organisation*—Principles of forest organization and regulation of the cut; advantages of foresight and planning in forest operations for a term of years; sustained yield management of forests; forest working plans. Required of students in senior or graduate year. Prerequisite, For. 151. Three credits; winter. Lab. fee, \$2. Kirkland.

153. *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 juniors. Five credits; autumn. Clark, Brandstrom.

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. Prerequisite, For. 101, and 10 hours of chemistry. Five credits; spring. Harrar.

160, 161, 162. *Forest Investigations*—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.

183. *Milling*—The sawmill; yard arrangements; practical operation, practical problems at local sawmills. For seniors and graduates. Prerequisites, M.E. 82, For. 104, 153, 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. 56, B.A. 65. Three credits; winter. Grondal.

185-186-187. *Logging Engineering*—Logging machinery and equipment, organization of logging companies, construction of railroads, camps, etc. Lectures, demonstrations at plants manufacturing logging machinery, and field work in nearby logging camps. During the third quarter all the work is transferred to the field, where extensive work in logging engineering is conducted. No credit is given for courses 185 and 186 unless followed by 187. Primarily for seniors and graduates. Required of all students specializing in logging engineering. Prerequisites, For. 52, 53, 58, 104, 153, M.E. 82, C.E. 22. Lab. fee for 187, \$3. Four credits a quarter, autumn and winter. Sixteen credits; spring. Clark, Brandstrom.

188. *Theory and Practice of Kiln Drying*—Theory of seasoning; design, construction and practical operation of dry kilns. Special seasoning problems. Prerequisites, For. 101, 158. Lab. fee, \$3. Five credits; winter. Grondal.

189. *Wood Pulp*—Design of waste conversion plants; wood pulp manufacture. Prerequisites, For. 101, 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. Prerequisite, For. 189. Lab. fee, \$2. Three credits; spring. Grondal.

193, 194. *Seminar*—Review and advanced work in dendrology, mensuration, silviculture and lumbering. Prerequisites, For. 52, 58, 151, 153. Three credits; autumn, winter. Kirkland, Harrar.

196. *Forest Management*—Continuation of Forestry 152. 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; spring. Kirkland.

#### COURSES FOR GRADUATES ONLY

201. *Forest Geography*—Advanced dendrology. Silvicultural regions, their relation to regional industrial development and general problems of lumbering and management. Three credits; autumn. Winkenwerder.

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; autumn. 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.

224. *Advanced Milling and Marketing*—Sawmill design and a detailed study of special problems in sawmill operation and management. Five credits; spring. Grondal.

## GENERAL ENGINEERING

Education Hall

*Associate Professor Wilcox; Assistant Professors Collier, Warner, Hawthorne, Van Horn, Farquharson; Instructors Chittenden, Robinson, Smith, Jacobsen, Rathbun, Rhodes, Weir.*

1. *Engineering Drawing*—Lettering; engineering sketching, fundamental principles of working drawings. Must be preceded or accompanied by solid geometry. Lab. fee, \$2. 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.

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. Deal 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. 1, G.E. 11 and Math. 51. Three credits; autumn, winter, spring. Wilcox, Hawthorn.

13. *Engineering 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.

21. *Plane Surveying*—Surveying methods, instruments, computations, mapping, U.S. public land surveys. Prerequisites, G.E. 1, 2, and Math. 51. All freshman engineers. Lab. fee, \$2. Three credits; autumn, winter, spring. Van Horn, Hawthorn, J. W. Miller.

## 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

Science Hall

*Professors Landes, Weaver; Associate Professors Renner, Goodspeed; Associates Seeman, Bauer, Fuller.*

### I. GEOLOGY

Courses described below are grouped to lead into different fields of geological work, as follows:

General Geology: Courses 1a-9, 100-109, 200-209.

Mineralogy, Petrography and Economic Geology: Courses 1a, 1b, 20-29, 120-129, 220-229.

Paleontology: Courses 1a, 1b, 130-140, 230-240.

Physiography: Courses 1a, 1b, 110-119, 220-229.

The science requirements for Liberal Arts students may be satisfied in geology by one of the following combinations: 1a, 1b and 2; 1a, 1b, and 21; 1a, 1b, and 113; 1a, 1b, and Geography 1 or 11.

To satisfy a science requirement in geology, courses 1a and 1b may be taken the same quarter, or 1a should be taken first, followed by 1b. As electives, credit will be given if these courses, 1a and 1b, are taken separately.

1a. *General Geology*.—Materials of the earth, rocks, minerals, and rock structure. Lectures and laboratory work with occasional half-day field trips. Lab. fee, \$1. Three credits; autumn, winter, spring.

Goodspeed.

1b. *General Geology*—Geological agencies and processes affecting the earth's surface. Lectures and laboratory work with occasional half-day field trips. Lab. fee, \$1. Two credits; autumn, winter, spring. Landes.

2. *General Geology*—Historical. Continuation of courses 1a and 1b dealing with the origin and evolution of the earth. Lectures and laboratory work, with some field excursions. Prerequisite, Geol. 1a, 1b. Lab. fee, \$2. Five credits; winter, spring. Weaver.

4. *Principles of Geology*—Historical. The earth's origin and the general history of the continent. For College of Mines students only. Lectures, recitations and field trips, without laboratory work. Prerequisite, Geol. 1a, 1b. Three credits; spring. Weaver.

21. *Mineralogy*—Crystallography, followed by descriptive mineralogy and blowpipe methods. Prerequisite, Geol. 1a, 1b, and at least a high school course in chemistry. Lab. fee, \$2. Five credits; autumn. Goodspeed.

\*101. *History of Geology*.

105. *Geology for Engineers*—Survey of the field of general geology for the special needs of students in civil, electrical, or mechanical engineering. Prerequisite, junior standing in the College of Engineering. Lab. fee, \$2. Five credits; spring. Goodspeed.

\*112. *Physiography of the Eastern United States*.

113. *Physiography of the Western United States*.—The physical regions of the western half of the United States, a brief review of the elements of physiographic geology, and the principles underlying the genetic interpretation of the topographic map. Prerequisite, Geol. 1a and 1b, or a course in physical geography. Lab fee, \$1. Five credits; spring. Renner

\*121. *Advanced Mineralogy*.

122. *Field Methods*—Methods and practice of geological surveying and mapping. Prerequisites and credits to be arranged by instructor. (Maximum credits, 15 hours); autumn, winter, spring, summer. Weaver.

123. *Optical Mineralogy*—Principles and methods involved in the use of the petrographic microscope; recognition of the optical properties of the common minerals. Prerequisite, Geol. 1a, 1b, and 21. Lab. fee, \$2. Three credits; autumn. Goodspeed.

124. *Petrography*—Systematic study, both megascopically and in thin sections with the petrographic microscope, of igneous, sedimentary, and metamorphic rocks. Prerequisite, Geol. 123. Lab. fee, \$2. Three credits; winter. Goodspeed.

125. *Petrology*—Study of the mode of occurrence and origin of rocks and their relation to geological processes and mineral deposits. Prerequisite, Geol. 124. Lab. fee, \$2. Three, four or five credits; spring. Goodspeed.

126. *Economic Geology*—Economic deposits of the principal non-metallic minerals, their production and uses. Lectures and discussion of papers. Prerequisites, Geol. 1a, 1b and 21. Three credits; autumn. Landes.

127. *Economic Geology*—Economic deposits of the chief metallic minerals, their production and uses. Lectures and discussion of papers. Prerequisites, Geol. 1a, 1b, 21 and 124. Five credits; winter. Landes.

128. *Economic Geology*—Petroleum fields of the world. Lectures and

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\*Not offered in 1929-30.



discussion of papers. Prerequisites, Geol. 1a, 1b, and 2. Three credits; spring. Landes.

131. *General Paleontology*—Principles of paleontology and a general systematic study of fossils. Prerequisite, Geol. 2. Lab. fee, \$2. Five credits; winter. Weaver.

132. *Invertebrate Paleontology*—A study of the more important type fossils of each geologic period. Prerequisite, Geol. 131. Lab. fee, \$2. Five credits; spring. Weaver.

140. *Structural and Stratigraphic Geology*—Certain structural and stratigraphic features, and their practical applications. Prerequisites, Geol. 2, and 122. Three credits; winter. Weaver.

154. *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 credits, with additional credits optional; spring. Goodspeed.

190. *Major Thesis*—The preparation of a thesis on some phase of geological science for students majoring in geology. The thesis must be submitted at least one month before graduation. Five credits; autumn, winter, spring. Staff.

#### COURSES FOR GRADUATES ONLY

Two modern languages, a Teutonic and a Romanic, are practically necessary for graduate work in geology.

200. Field studies or advanced work in general geology. Credits and hours to be arranged. Each quarter. Landes, Weaver, Goodspeed.

212. *Advanced Studies or Field Work in Physiography*—Credit 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.

225. Advanced or research work in economic geology. Credits and hours to be arranged. Each quarter. Landes.

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 of courses:

Geography 1 and 11, or 103.

Geology 1a, 1b and Geography 1, or 11.

For students in business administration, B.A. 7 and Geography 100 are suggested; for students in Oriental studies, Geography 1 and 103, and for students in education, Geography 1 and Education 160F.

1. *Principles of Economic 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 stu-

dents 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 and spring. Renner, Secman.

*Geographic Background of Industry*—(See Bus. Adm. 7).

11. *Weather and Climate*—Weather elements and controls; causes and effects of atmosphere conditions; principles and methods of weather forecasting and use of instruments. Lab. fee, \$1. Five credits; winter. Renner, Seeman, Bauer.

100. *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. Prerequisites, Geog. 1, or B.A. 7, or History 8 and 9. Five credits; autumn. Renner, Seeman.

\*101. *Industrial and Political Geography of Europe.*

\*102. *Economic Geography of Latin America.*

103. *Political and Economic Geography of Asia*—A study of the various countries of Asia and their division into geographic regions. A review of the factors of historical and social geography which have occasioned the present political and economic status of Asia. Prerequisites, Geog. 1 or 11, or B.A. 7, or one course in Oriental studies. Lab. fee, \$1. Five credits; winter. Renner.

\*104. *Geography of Africa and Australia.*

\*111. *Climatology.*

\*114. *Oceanography.*

\*116. *Economic Geography of Washington.*

*Teachers' Course in Geography*—See Edu. 160F.

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 and spring. Renner.

190. *Undergraduate Thesis*—Preparation of a thesis in geography, climatology, or physiography. Completed thesis must be submitted at least one month before graduation. Prerequisite, senior standing. Hours to be arranged. Five credits; autumn, winter, spring. Renner, Seeman.

#### COURSES FOR GRADUATES ONLY

200. *Advanced Research Work in Geography*—Credit and hours to be arranged. Autumn and winter. Renner.

203. *Research in the Geographic Problems of Asia*—Credit and hours to be arranged. Spring. Renner.

211. *Research in Meteorology and Climatology*—Credit and hours to be arranged. Renner.

250. *Philosophy and Literature of Geography*—Credit and hours to be arranged. Each quarter. Renner.

\*Not offered in 1929-30.

## 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 Div. 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.

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.

Eckelman, 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, vocabulary building, simple conversation. Prerequisite, Ger. 5 or 6 or 10 or 11. Three credits; spring.

Terzieff.

10, 11, 12. *Second Year Review Course*—Modern prose, grammar review with emphasis on syntax, simple conversation. Prerequisite as for German 5. Two credits; autumn, winter; three credits, spring.

Groth, Wesner, Terzieff.

60, 61. *Lower Division Scientific German*—Introduction to chemical German. Class work. Suitable outside reading. Vocabulary building. Prerequisite, Ger. 5, or 10 or 11; Ger. 3 Grade A or B, or combinations with consent of instructor. Three credits; autumn, winter; two credits, spring.

Wesner.

70. *German Literature in Translation*—A survey of the German novel during the last half of the nineteenth century. Its reflection of the main currents of thought. Lectures, discussion, special reports. No knowledge of German required. Three credits, spring.

Eckelman.

100. *Schiller*—Life and dramatic works. Jungfrau von Orleans. Other selections. Discussion, oral and written reports. Prerequisite, three years high school or eight credits second year work. Three credits; winter.

Meisnest.

101, 102, 103\*. *Recent Writers*—The best prose and dramatic literature adapted to rapid reading. Representative of German middle class and in-

\*Not offered in 1929-30.

dustrial life. Discussion, oral and written reports. Prerequisite, three years high school or eight credits second year work in college. Three credits; autumn and spring. Groth, Wesner.

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.

112, 113, 117. *Upper Division Scientific German*—Scientific essays, monographs, technical periodicals. Each student does private reading in his own field under guidance of the instructor and major professor. Conferences. Prerequisite, Ger. 5 and 10, 60 or 61, or three years in high school. Two or three credits a quarter; autumn, winter, spring. Eckelman, Meisnest.

118, 119\*, 120\*. *German Prose Reading*—From the best prose and dramatic works. Heine's *Hatzreise*, Goethe's *Hermann und Dorothea*. Discussion, oral and written reports. For majors, minors and advanced students. Three credits; autumn. Eckelman.

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. Meisnest.

\*130-131-132. *German Institutions*.

\*133, 134, 135. *Modern Novels*.

136\*, 137, 138\*. *Modern Drama*—From Grillparzer, Otto Ludwig, Hebbel or Hauptmann. *Der Erbförster*. *Des Meeres und der Liebe Wellen*. Literary topics, oral and written work. Prerequisite as for German 118. Three credits; winter. Eckelman.

\*139, 140. *Studies in German Literature*.

\*141. *History of German Literature*.

\*142. *Lyrics and Ballads*.

\*150, 151. *Lessing*.

153. *Goethe's Dramatic Works*—*Goetz von Berlichingen*, *Tasso*. Discussion, oral and written reports. Prerequisite, Ger. 100 or equivalent. Two credits; spring. Ankele.

180, 181, 182. *Nineteenth Century Literature*—Seminar. The drama and novel to 1880. Kleist, Grillparzer, Hebbel, Ludwig, Raabe, Keller,

\*Not offered in 1929-30.

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 the German Language.*

253\*, 254, 255\*. *Middle High German*—An introduction to the language and literature of the German 12th century. Three credits; winter. Groth.

\*256, 257, 258. *Gothic.*

\*259, 260, 261. *Old Saxon.*

*Teachers' Course in German*—See Edu. 160G.

#### 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.

#### HISTORY

Denny Hall and Philosophy Hall

*Professors Meany, Richardson, McMahon; Associate Professor Lucas;<sup>1</sup> Assistant Professor Creer; Instructors Quainton, Dobie, Dahlin; Associate Buchanan; Professor Gowen and Assistant Professor Griffin of the Department of Oriental Studies.*

#### 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.

<sup>\*</sup>Not offered in 1929-30.

<sup>1</sup> Absent on leave.

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, 52, 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, 100 or 101; 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 130, 131 132 or 134, 154, 155, to be taken in correlation with History 5-6; English 67, 68, 69 or 161, 162, 163, or 164, 165, 166, to be taken in correlation with American history courses; English 127, English 144, English 137; 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 fulfil 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.

Prospective high school teachers of history should bear in mind that since Oriental history is not as 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 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 lat-

ter 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; 129, French Revolution, five credits or 130, Europe 1814-1870, five credits, or 131, Europe since 1870, 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.

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. Creer, 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.

25. *Introduction to History of Asia*—A resume 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.

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.

\*75-76. *History of China*.

78-79. *History of Japan*—Evolution of Japanese people; cultural and institutional factors; and contemporary Japan with reference to these. In this course and in the History of China attention is paid to the history of Chosen (Korea). Prerequisite, eight credits of college history, or O.S. 40-41, or Hist. 25 and O.S. 120. By special work under the direction of instructor upper division students may receive upper division credit. Five credits; winter, spring. Griffin.

81. *British Empire Since the Revolution of 1689*.—Imperial problems, growth of the British Commonwealth of Nations, internal economic and political developments, growth of democracy. Prerequisite, History 1-2 or 5-6. By special work under the direction of the instructor upper division students may receive upper division credit. Five credits; autumn. Dobie.

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.

\*Not offered in 1929-30.



111. *Greek Political Institutions*—Three credits; winter. Creer.
- \*112. *Medieval Civilization: The Dark Ages*.
- \*113. *Medieval Civilisation*.
- \*114. *The Renaissance*.
- \*115. *The Reformation*.
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*.
- \*121-122-123. *Prussia and Northern Europe in the 17th and 18th Centuries*.
125. *Great European Treaties, 1453-1878*—Students who have previously taken the course called *Turkey and the Near East* are not debarred. 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. McMahon.
144. *History of the United States, 1815-1846*—Open only to juniors, seniors, and graduates. Three credits; winter. McMahon.
145. *History of the United States, 1846-1860*—Open only to juniors, seniors, and graduates. Three credits; spring. McMahon.
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.

\*Not offered in 1920-30.

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 Educ. 160H. Two credits; autumn. McMahon.

163-164-165. *Northwestern History*—From the earliest voyage to the Pacific Northwest to the organization of the present form of government. Open to juniors, seniors and graduates. Two credits a quarter; autumn, winter, spring. Meany.

*Teachers' Course in History*—See Education 160H.

#### 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 five credits a quarter; autumn, winter, spring. Creer.

\*211-212-213. *Research in European History (1300-1600)*. „

\*215-216-217. *Seminar in English History*.

218-219-220. *Seminar in European History: Pre-war*—Two credits a quarter. 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.

#### 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.

\*Not offered in 1920-30.

*Institutional Management*—Courses 122, 123, 124, 125.

*Home Economics Education*—Courses 7, 111, 202, Educ. 160I, 160J.

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; autumn.

\*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. Bliss.

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, principles underlying cookery, nutritive value of foods. Sanitation in relation to market condition and care of food after purchase. 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*—Identification and testing fabrics. Economics of the textile industry. Comparative values in all types of clothing. Hygiene of clothing. Care and renovation. Clothing budgets. 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.

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.

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. Rountree.

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. Rountree.

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; 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; insti-

tutional 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; 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*—Design, selection, practice in construction, renovating, trade methods and materials. Prerequisites, H.E. 8 or equivalent, P.S.D. 9. Three 2-hour laboratory periods, recitation and laboratory work. Lab. fee, \$3. Three credits; autumn. Payne.

143. *Home Furnishing*—Application of structural art principles to choice and arrangement of household furnishings. Comparative costs. Prerequisite, P.S.D. 9. Two lectures and one 2-hour period, laboratory work, 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*—Historic art fabrics. Intensive study of a modern fabric. Methods of commercial testing. 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. Rountree.

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. Rountree.

• *Teachers' Course in Home Economics*—See Educ. 160I, 160J.

#### COURSES FOR GRADUATES ONLY

200. *Special Food Problems*—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 hour credit; autumn, winter, spring. Rountree.

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.

245. *Research in Household Accounts and Budgets*—Prerequisites, H.E. 144-145, Econ. 1. Credit to be arranged; autumn. Raitt.

#### JOURNALISM

Commerce Hall

*Professor McKenzie; Associate Professor R. W. Jones; Laboratory Director Kennedy; Instructors Christian, Wintermute.*

1. *Journalism as a Profession*—Survey of newspaper making in its various phases. Required in the freshman year of pre-journalism majors. Lab. fee, \$1. One credit a quarter; autumn, winter, spring. McKenzie.

51. *News Writing*—Practice in news writing; study of news sources.

\*Not offered in 1929-30.

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.

115. *Elements of Publishing*—Head styles; proof-reading; binding; engraving; press work; problems of production. Required of journalism majors. Lab. fee, \$2. Three credits; autumn. Kennedy.

120. *Copy Reading*—Required of majors in journalism. Prerequisite, Jour. 101. Lab. fee, \$2. Five 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. This course, together with Economics 18 and 19, may be substituted for Journalism 140. Lab. fee, \$2. Five credits; spring.

Stewart.

130. *Fundamentals of Advertising*—Lab. fee, \$2. Five credits; autumn.

Jones.

131. *Display Advertising*—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. 115. 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; spring. Jones.

140. *The Business Office*—Simplified accounting for newspaper plants; business office management. Required of majors in journalism. Prerequisite, Jour. 115. 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, \$1. Three credits; spring. Jones.

160. *Trade Journalism*—Prerequisite, Jour. 51. Lab. fee, \$1. 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, \$2 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, \$2 a quarter. Three credits a quarter; autumn, winter, spring.

McKenzie.

#### COURSES FOR GRADUATES ONLY

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. Two to four credits a quarter; autumn, winter, spring.

McKenzie.

250. *Research in Journalism*—Admission only by consent of instructor. Three to five credits; autumn, winter, spring.

Staff.

*Teachers' Course in Journalism*—see Education 160K.

### LAW

#### Commerce Hall

*Professors Schweppe, Lantz, Goodner, Bissett, Ayer, O'Bryan, Nottelmann, Martin; Associate Professor Mecham; Lecturer Beardsley*

#### FIRST YEAR

*All first year courses required.*

100. *Agency*—Wambaugh's Cases, 2nd Ed. Five credits; spring.

Ayer, Mecham.

103-104. *Contracts*—Corbin's Cases. Five credits a quarter; autumn and winter.

Lantz, Mecham.

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.

Bissett, O'Bryan.

116. *Property II.—Real*—Bigelow's Cases. Five credits; spring.

Bissett, Mecham.

117-118. *Torts*—Ames' and Smith's Cases, Pound's Ed. Four credits a quarter; autumn and winter.

Ayer, Mecham.

#### 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*—Beale'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. Schweppe.
- 134, 135, 136. *Legal Bibliography; Use of Law Books; and Brief-Making*—Two credits a quarter; autumn, winter, spring. *Winter quarter required of all second-year students.* Beardsley.
137. *Negotiable Instruments*—Smith and Moore's Cases. Three credits; winter. Bissett.
138. *Quasi-Contracts*—Woodruff's Cases. Three credits; spring. Lantz.
139. *Property III.*—Aigler's Cases. Five credits; autumn. Bissett.
- 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. 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. Bissett.

## THIRD YEAR

133. *Insurance*—Vance's Cases. Three credits; winter. Lantz.
145. *Irrigation Law*—Case book to be selected. Three credits; winter. O'Bryan.
- \*153. *Property IV.*—Kales' Cases on Future Interests.
- \*156. *Bankruptcy*—Holbrook and Aigler's Cases (2nd Ed.).
- \*158. *Mining Law*—Costigan's Cases.
- †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. Schweppe.
176. *Mortgages*—Parks' Cases. Three credits; spring. Nottelmann.
177. *Municipal Corporations*—Tooke's Cases. Three credits; spring. O'Bryan.

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\*Not offered in 1929-30.

†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.

183. *Suretyship*—Langmaid's Cases. Three credits; spring. Nottelmann.
- 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. Scott'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. Bissett.
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.
- Note—An average of fifteen hours or credits in each quarter is required, making a minimum total of 185 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

Denny 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; Instructor Putnam; Assistant Andrews

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.
- 177, 185, 193. *Reference*—These courses aim to give a working knowledge of important types of reference books. Lectures cover books and

\*Not offered in 1929-30.

methods. Practical problems and work with government documents. Two credits a quarter; autumn, winter, spring. Smith.

192. *Library Economy*—Ordering, receiving, accessioning and mechanical preparation of books; elementary trade bibliography; correspondence and records. Two credits; winter. Putnam.

194. *Subject Bibliography*—Preparation of bibliographic lists; lectures on sources and methods of work. Problems cover arrangement and form of entry. Two credits; spring. Smith.

186, 195. *Practice*—Each student is expected to do 300 hours of practice or laboratory work under expert personal supervision. The practice work is given in both the University Library and the Seattle Public Library and consists of 15 hours per week for twenty weeks. Three to five credits, winter; three, spring.\*

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, annotation and book reviewing. Three credits; autumn. Two credits; winter and 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.

198. *Special Lectures by Active Librarians*—Ten lectures, each on some vital problem of library service or administration, by persons selected because of their experience and success in dealing with the problems treated. One credit; spring.

189. *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. 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. Andrews.

182. *School Work*—Administration of school libraries. 189, 183, 181, 190, 199 required if this course is elected. One credit; winter, spring. Andrews.

183, 190. *Literature for children*—Reading, analysis and history of books for children. Two credits each; winter, spring. 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. 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.

\* Announcement 186, 195. Practice may be changed in 1929-30. The change may necessitate the student's absence from Seattle for a month. Extra expense may run to \$50.

## MATHEMATICS

Philosophy Hall

*Professors Moritz, Winger, Carpenter; Associate Professor Gavett; Assistant Professors Neikirk, Ballantine, McFarlan, Mullemeister; Instructors Cramlet, Ingram, Jerbert, Jacobsen.*

Suggested courses of study will be found in the College of Science bulletin.

### MINIMUM REQUIREMENTS OF THE DEPARTMENT

For a major in mathematics, 36 credits; including courses 4, 5, 6, 107, 108-109, plus six additional upper division credits.

For an academic minor in the School of Education, 20 credits; including courses 4, 5 and 6.

Candidates who are not majors in mathematics but wish to teach mathematics as a minor subject must have earned at least 20 credits in mathematics, including courses 4, 5 and 6, before receiving the recommendation of the department.

Major students in mathematics should, if possible, select their courses in mathematics in the following order: Math. 4, 5, 6, 107, 108, 109. In addition they should elect physics as their freshman science 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. Winger, Mullemeister, Jerbert.

5. *College Algebra*—Prerequisite, Math. 1 or one and one-half years high school algebra. Five credits; winter. Winger, Mullemeister, Jerbert.

6. *Analytic Geometry*—Especially for students in the Colleges of Liberal Arts and Science. Prerequisites, Math. 1 and 4. Five credits; spring. Winger, Mullemeister, Jerbert.

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. Jerbert.

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.

Neikirk, Cramlet, McFarlan.

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.

Carpenter.

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 a quarter; winter, spring.

Carpenter, Ballantine.

\*117, 118, 119. *Projective Geometry*.

121-122-123. *Finite Collineative Groups*—Groups of linear transformations in the binary and ternary domains with applications to geometry. The structure of the principal groups, together with their invariants, configurations and invariant curves. Prerequisite, Math. 117. Two credits; autumn, winter, spring.

Winger.

\*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

\*Not offered in 1929-30.

## *Courses in Mathematics and Mechanical Engineering*

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. 160M.

### COURSES FOR GRADUATES ONLY

201, 202, 203. *Projective Differential Geometry*—Two credits; autumn, winter, spring. Carpenter.

\*204, 205, 206. *Modern Algebra*.

\*211, 212, 213. *Foundations of Mathematics*.

\*214, 215, 216. *Modern Analysis*.

\*221, 222, 223. *Higher Plane Curves*.

224, 225, 226. *Functions of Real Variables*—Three credits; autumn, winter, spring. Moritz.

\*227, 228, 229. *Theory of Numbers*.

\*231, 232, 233. *Theory of Infinite Processes*.

\*235, 236, 237. *Metric Differential Geometry*.

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. Prerequisite, G.E. 13, Math. 52. Three credits; autumn, winter, spring.

McIntyre, McMinn, Edmonds, Winslow.

82. *Steam Engineering*—Various steam apparatus used in modern steam plants; construction, use and reason for installation. Not open to freshmen. Prerequisite, G.E. 2. Three credits; autumn, winter, or spring.

Eastwood, McMinn, Edmonds, Winslow.

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.

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\*Not offered in 1929-30.

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, 112, 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. Junior mechanical and electrical engineers. Lab. fee, \$2. Three credits; autumn, winter, spring. Winslow, McMinn.

179. *Steam Turbines*—Theory, construction and design of steam turbines. Prerequisite, M.E. 82. 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. 82, 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, \*\*186, \*\*187. *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 a quarter; spring, autumn, winter. Eastwood.

\*\*188, \*\*189. *Ship Design*—Application of the principles of naval architecture to the design of a ship for a definite purpose. Prerequisite, M.E. 186. Two credits a quarter; autumn and winter. Eastwood.

\*\*190. *Marine Engineering*—Power plant equipment of ships, including boilers, engines, auxiliaries and propellers. Prerequisite, M.E. 82, 185. 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.

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\*\*Will be offered if a sufficient number of students elect the course.

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 Matthews, Major Greene, Major de Rohan, Captain Priest, Captain Meredith, Captain Williams, Lieut. Luce, Lieut. Hildebrand, Lieut. Young, Warrant Officer White, Warrant Officer Moller, Master Sergeant Lang, Staff Sergeants Compton, Bailey; Sergeant Collins; Privates First Class Freeman, Whitchurch.*

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 has requested that it be given the government commutation for uniforms in this department. This commutation consists of \$7.15 per student per year for two years. A University uniform has been adopted that will cost \$30, but which, after deducting the commutation for two years, will net the student \$15.70. The uniform is a substantial eighteen-ounce serge, consisting of cap, coat and trousers. With ordinary care it will serve the student for two years of school work.

Each student registering in this department will be required to provide himself with this uniform, which will be worn at drill with a pair of black shoes of army last, with white shirt, turn-down collar and black four-in-hand tie. The uniform is the personal property of the student. On completion of the first year's work, he will be reimbursed to the extent of \$7.15, and on completion of the second year's work, with an additional \$7.15.

FIRST YEAR

1-2-3. *Basic Infantry*—Marksmanship, military courtesy, military hygiene and first aid, physical drill, and command and leadership. Five hours a week. One and two-thirds credits a quarter; autumn, winter, spring.

4-5-6. *Basic Coast Artillery*—Military policy, U.S.; military courtesy and discipline; artillery drill, infantry drill, physical training, ceremonies and gunnery instruction. Five hours a week. One and two-thirds credits a quarter; autumn, winter, spring.

11-12-13. *Band*—Five hours a week. One and two-thirds credits a quarter; autumn, winter, spring.

SECOND YEAR

51-52-53. *Basic Infantry*—Scouting and patrolling, musketry, interior guard duty, automatic rifle, physical drill, and command and leadership.



Five hours a week. One and two-thirds credits a quarter; autumn, winter, spring.

61-62-63. *Basic Coast Artillery*—Military policy, U.S.; military courtesy and discipline; gunnery instruction to include fire control and position finding; artillery materiel and leadership. Five hours a week. 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. One and two-thirds credits; spring quarter, Pack Forest.

81-82-83. *Band*—Five hours a week. One and two-thirds credits a quarter; autumn, winter, spring.

### THIRD YEAR

104. *Advanced Infantry*—Military field engineering; combat principles of the defense, elements of military field engineering with a study of trenches, obstacles, shelters, etc. Combat principles of the squad and section, includes the service of security and attack. Command and leadership. Primarily for students majoring in military science. Three credits; autumn.

105. *Advanced Infantry*—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. Command and leadership. Primarily for students majoring in military science. Three credits; winter.

106. *Advanced Infantry*—Machine guns; continuation of Mil. Sci. 105. Military sketching: classification of military sketches, scales, instruments, conventional signs, lettering and titles, contours, equipment, traversing elevations, practical work in making route and area sketches. Command and leadership. Primarily for students majoring in military science. Three credits; spring.

114. *Advanced Coast Artillery*—Orientation. Reconnaissance of battery positions. Determination of co-ordinates and orienting lines. Meridian determinations. Transit and calculations. Leadership. Primarily for students majoring in military science. Three credits; autumn.

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. Leadership. Primarily for students majoring in military science. Three credits; winter.

116. *Advanced Coast Artillery*—Gunnery. Observation of fire. Methods of fire adjustment for fixed and mobile heavy artillery. Problems in fire adjustment. 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; spring.

124. *Advanced Ordnance*—Ordnance materiel. Drill and command. Two credits; autumn.

125. *Advanced Ordnance*—Ordnance materiel. Two credits; winter.

126. *Advanced Ordnance*—Ammunition—manufacture and use of all types. Two credits, spring.

NOTE: The student must take in addition approved technical subjects from the lists obtainable from office of the professor of military science and tactics.

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. Command and leadership. Primarily for students majoring in military science. Three credits; autumn.

155. *Advanced Infantry*—Infantry weapons: 37 mm. gun and 3-inch trench mortar, including nomenclature, use, care and repair, mechanics of weapons, practical exercises with weapons and instruments, range and target exercises, organization, communication, transportation, and combat principles of the offense and defense, special operations. Combat principles: combat principles of the platoon and company in attack, night operations, security on the march and at rest. Estimates of the situation, orders, messages and problems. Command and leadership. Primarily for students majoring in military science. Three credits; winter.

156. *Advanced Infantry*—Combat principles. Continuation of Mil. Sci. 155. Military law and rules of land warfare: military jurisdiction, courts-martial, witnesses and depositions, evidence, procedure, records of trial, articles of war, charges and specifications. Command and leadership. Primarily for students majoring in military science. Three credits; spring.

157. *Military Thesis on Infantry*—Five credits; autumn, winter, spring.

164. *Advanced Coast Artillery*—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. Leadership. Primarily for students majoring in military science. Three credits; autumn.

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. Leadership. Primarily for students majoring in military science. Three credits; winter.

166. *Advanced Coast Artillery*—Motor mechanics for heavy duty trucks, tractors and self-propelled heavy artillery. Principles of internal combustion engine and accessories in artillery use. Leadership. Primarily for students majoring in military science. Three credits; spring.

167. *Military Thesis on Coast Artillery*—Five credits; autumn, winter, spring.

174. *Advanced Ordnance*—Military law. Company administration. Two credits; autumn.

175. *Advanced Ordnance*—Organization of ordnance units. Property accountability. Industrial mobilization. Two credits; winter.

176. *Advanced Ordnance*—Ordnance engineering. Principles of design, manufacture and supply. Two credits; spring.

NOTE: The student must take in addition approved technical subjects from the lists obtainable from office of the professor of military science and tactics.

## MINING, METALLURGY AND CERAMICS

## Mines Laboratory

*Professors Roberts, Daniels, Wilson; Assistant 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-hr. 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 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.

\*Not offered in 1929-30.

## II. 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 washing and utilization.

## III. 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 microstructure 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.

#### IV. 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. 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.

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\*\*Will be offered if a sufficient number of students elect the course.

**\*\*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 fire-clays and other refractory materials. The manufacturing problems of fire-clay, 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.

## MUSIC

### Music Building

*Professors Glen, Wood, Rosen, Venino; Associate Professor Newenham; Assistant Professors Lawrence, McKay, Van Ogle; Instructors Alderman, Allen-McCreedy, Kirchner, Wilson; Associates Bogardus, Lynch, Mabon, L. Venino; Assistants Burns, 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.

**6. *Music History***—Progress of musical development from the primitive period to the modern. This course is more valuable if preceded by a course in appreciation. Five credits; autumn, winter, spring. Alderman.

**9. *Sight Singing***—For beginners. Five credits; autumn, winter, spring. 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. Glen, Lawrence.

**13. *Music Appreciation***—To aid music students to become intelligent and discriminating listeners. Musical masterpieces, both instrumental and

**\*\***Will be offered if a sufficient number of students elect the course.

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

vocal, of different periods and forms, will be presented and discussed. Required of all music majors. Five credits; autumn, winter, spring.

16. *Ear Training and Melody Writing*—Principles of melodic invention and training in hearing accurately; study in notation. Five credits; autumn, winter, spring. Wilson.  
Newenham, Alderman.

18, 19, 20 *Applied Music*—(Freshman.)

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, 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*—Adams.

22, 23, 24. *Music Appreciation*—A course in the understanding and enjoyment of good music. Presenting many of the compositions instrumental and vocal, which make up the literature of music. Designed for the general student. Not counted for music majors. Two credits; autumn, winter, spring. Wilson.

25, 26, 27. *Choral Study*—For freshmen. Part songs for men's voices. Candidates admitted only upon examination. Two 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. One credit a quarter; autumn, winter, spring. Glen.

34, 35, 36. *Voice Training—Applied Music*—Principles of correct breathing and tone production essential to good singing. Two credits a quarter; autumn, winter, spring. Bogardus.

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. 9 and 16. Five credits; autumn, winter, spring. Wood, Alderman, Burns.



53. *Intermediate Harmony*—Secondary harmonies. Prerequisite, Mus. 51. Five credits; autumn, winter, spring. Wood, Alderman, Burns.
56. *School Music*—For supervisors. Study of materials for the primary grades, of the child voice in singing and practice in chorus conducting. Prerequisite, Mus. 9, 16. Five credits; autumn, winter, spring. Newenham.
- 57, 58, 59. *Advanced Sight Singing*—Study of "Elijah" autumn quarter, an opera or modern choruses winter quarter, Brahms's "Requiem" and Mendelssohn's "Hymn of Praise" spring quarter. Two credits a quarter; autumn, winter, spring. Wilson.
- 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. Two credits a quarter; autumn, winter, spring. Lawrence.
- 84, 85, 86. *Advanced Voice Training—Applied Music*—Two credits a quarter; autumn, winter, spring. Bogardus.
101. *Advanced Harmony*—Chromatic harmonies and modulation. Prerequisite, Mus. 53. Five credits; autumn, winter, spring. 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, 114. *Music Education*—Psychological and pedagogical principles and their application to the teaching of music. Prerequisite, Mus. 56. Two credits a quarter; autumn, winter. Newenham.
117. *Elementary Composition*—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. *Adv. Sight Singing*.
- 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. Adams.
- 140, 141, 142. *Orchestral Instruments*—Especially for public school majors. Three credits a quarter; autumn, winter, spring. (May be counted as applied music.) Adams.
- 151, 152, 153. *Advanced Music Appreciation*—Appreciative study of some modern composers and schools. Two credits a quarter; autumn, winter, spring. Van Ogle.

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\*Not offered in 1929-30.

154, 155, 156. *Music Supervision*—For seniors and students of experience. High school, normal school, rural, community music. Appreciation and theory problems. Courses of study. Prerequisite, Mus. 113, 114, and Educ. 160N. Two credits a quarter; autumn, winter, spring. 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. *Problems of the High School Orchestra*—Students who play an orchestral instrument may register for credit. Others may be enrolled as auditors. Organization, materials and practice in conducting. Not open to students who have had credit for music 60. Two credits a quarter; autumn, winter, spring.

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 160N. *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. Newenham.

Education 160X. *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.

## 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, Blumenstengel 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.

*Chorus*—Music 10 and 11, \$1.

*Piano*—Mr. Venino, \$25 a quarter; Mrs. Van Ogle, \$25 a quarter; Mrs. Venino, \$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. Adams, \$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.

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

## Forest Products Laboratory

*Commander H. W. McCormick, 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; C. J. Wilson (C.B.M., U.S.N.R.), Malcolm Hamilton (C.G.M., U.S.N.R.), R. B. Littell (C.Y., 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 Pro-*

*fessor 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 G, College of Science.)

*The following navigation courses, B.A. 50, 51, 52, 114, will be required of all Naval Science students.*

#### FIRST YEAR

1-2-3. *Basic Course—Ordnance and Gunnery*—Infantry and artillery drill, 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. Lectures on general naval subjects. Weather and laws of storms. 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, lines of position. *Seamanship*—Anchor gear, handling heavy weights, handling steamers, duties of an officer. 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. *Seamanship*—Handling of ships in heavy weather, Rules of the Road; naval leadership, naval administration and discipline, naval communications. *Engineering*—Principles of engineering, description of boilers, reciprocating engines, and steam turbines. Four hours a week plus one additional hour of drill. Three credits a quarter; autumn, winter and spring.

#### FOURTH YEAR

151-152-153. *Advanced Course—Ordnance and Gunnery*—Principles of training, fire control, duties of gunnery officer and battery officer; defense against torpedo attack and aircraft; aerial gunnery and bombing. *Seamanship*—Outline of International Law and Military Law; formulation of naval orders, strategy and tactics. *Engineering*—Description of steam turbines, internal combustion engines and auxiliaries; electrical propelling machinery, elements of radio telegraphy; description of machinery installations of various types of naval vessels. Four hours a week plus one additional hour of drill. Three credits a quarter; autumn, winter and spring.

## NURSING EDUCATION

Home Economics Hall

*Associates Elizabeth S. Soule, Kathleen Leahy.*

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; autumn, 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. 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.

120. *Public Health Nursing*—A non-technical course in public health. Deals with the modern public health movement in its various phases. Three credits; 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; winter quarter.

*Health Education*—See Education 179; 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.

#### 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: Professors Skinner and Hail. Teaching Fellow: Henry S. Tatsumi.*

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 lec-

tures, 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.

History 25, 26, 27 and Oriental Studies 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. Griffin, Tatsumi.

*Introduction to the History of Asia* (History 25)—Resume of the main currents of human movement in the history of the continent of Asia. Five credits; autumn. Gowen.

*Introduction to the History of China* (History 26)—An outline of the History of China, giving an historical background to present problems. Five credits; winter. Gowen.

*Introduction to the History of Japan* (History 27), 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. 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. 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. Hall.

\*47, 48, 49. *Chinese Language*—Second-year course. Three credits.

†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*—Literary, historical, and philosophical works studied chiefly from a social viewpoint. Instructor's permission necessary for freshmen. Intended to alternate with 71. Five credits; autumn. Griffin.

\*71. *Literature of Japan*.

\**History of China* (History 75-76). Alternates with History 78-79.

*History of Japan*. (History 78-79)—Evolution of the Japanese people;

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\*Not offered in 1929-30.

†Upper division students may secure upper division credit by doing additional work.



cultural and institutional factors; and contemporary Japan with reference to these. In this course and in the History of China attention is paid to the history of Chosen (Korea). Prerequisite, 8 credits of college history, or O.S. 40-41, or Hist. 25 and O.S. 120. Five credits; winter, spring.

Griffin.

*\*80. Semitic Literature.*

101-102-103. *Hebrew, Aramaic, or Arabic*—According to demand. Five credits; autumn, winter, spring. Gowen.

104-105-106. *Sanscrit*—Five credits; autumn, winter, spring. Gowen.

*Political and Economic Geography of Asia* (Geography 103)—A study of the various countries of Asia and their division into geographic regions. A review of the factors of historical and social geography which have occasioned the present political and economic status of Asia. Prerequisites, Geol. 10 or 11, or B.A. 7, or one course in Oriental Studies. Five credits; winter. Lab. fee, \$1. Renner.

*\*Geography of Africa and Australasia* (Geography 104).

*\*114, 115, 116. History of Religion*—Offered in 1930-1931.

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. Open to qualified sophomores. Five credits; spring. Griffin.

*\*125-126, 127. Diplomatic History of Eastern Asia.* ‡To alternate with 225-226, 227. (Omitted in 1929-1930).

*International Relations of the Far East.* (Pol. Sci. 128, 129). Prerequisite, Pol. Sci. 1. Five credits; winter spring. Hail.

*Race Invasion* (Sociol. 142)—(This bears largely on the Orient). Three credits; spring. McKenzie.

*Trade of Far and Near East* (Econ. 143)—Prerequisite, B.A. 7. Five credits; winter. Skinner.

*\*152, 153, 154. Hebrew, Arabic, or Sanscrit*—Second-year course. (Offered in 1930-1931.)

*Governments and Politics of the Far East* (Pol. Sci. 158). Prerequisite, Pol. Sci. 1. Five credits; autumn.

*Cultural Contact, Cultural Conflict, Cultural Accommodation* (Sociol. 184, 185, 186)—(These bear mainly on Asia and Oceania.) Three credits; autumn, winter, spring. Price.

190, 191, 192. *Reading Course*—Reading on single, selected Oriental topics, regular conferences (individual or in small groups), reports, essays and tests; instructor's permission necessary. Open to qualified sophomores. Two to five credits; autumn, winter, spring. Griffin.

*Research in Geographic Problems of Asia* (Geography 203)—Credit and hours to be arranged; spring. Renner.

#### COURSES FOR GRADUATES ONLY

*\*Oriental Seminar.*

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

*\*Not offered in 1929-30.*

‡Attention of students interested in various aspects of Asiatic or European colonization in the Orient (present problems, methods, or history) is called also to O.S. 190, 191, 192, to Pol. Sci. 125, 128, 129, 158, 251, 252, and to Sociol. 184, 185, 186.

Western states. †Intended to alternate with O.S. 125-126, 127. Three credits; autumn, winter, spring. Hail.

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

*Associate Professor Isaacs; Assistant Professors Rhodes, Patterson<sup>1</sup>, Pratt, Benson, Hill, Foote; Associates Worman, Wood, Padelford, Penington; Instructor Buck.*

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. Hill, Padelford, Worman.

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, Benson, Hill, 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. 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. Prerequisite, P.S.D. 5, 6, 7. Lab. fee, \$2. Three credits a quarter; autumn, winter, spring. Hill.

\*59, 60, 61. *Household Design*.

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 and spring.

65, 66, 67. *Drawing and Painting*—Lab. fee, \$1. Prerequisites, P.S.D. 5, 6, 7. Three credits; autumn, winter, spring. Padelford.

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, 10, 11. 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. 9, 10, 11. Three credits a quarter; autumn, winter, spring. Foote.

†Attention of students interested in various aspects of Asiatic or European colonization in the Orient (present problems, methods, or history) is called also to O.S. 190, 191, 192, to Pol. Sci. 125, 128, 129, 158, 251, 252, and to Sociol. 184, 185, 186.

\*Not offered in 1929-30.

101. *Public School Art*—Elements of interior design, adapted to public school art. Prerequisites, P.S.D. 9, 10, 11. Two credits; autumn. 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. 53, 54, 55, 56, 57, 58. Two credits; winter. Rhodes.

103, 104. *Pottery*—Lab. fee, \$2.50. Prerequisite, P.S.D. 5, 6, 7, 9, 10, 11. Three credits a quarter; autumn and winter. Worman.

105. *Art Structure*—Design as applied to lettering. Prerequisites, 9, 10, 11, and 5, 6, 7. Three credits; winter. Buck.

106. *Art Structure*—Poster designing. Prerequisite, P.S.D. 5, 6, 7, 9, 10, 11. Three credits; spring. Buck.

\*107, 108, 109. *Portrait Painting*.

110, 111, 112. *Interior Design*—Lab. fee, \$1. Prerequisites, P.S.D. 9, 10, 11, 56, 57, 58. Three credits a quarter; autumn, winter, spring. Foote.

116. *Illustration*—Prerequisites, P.S.D. 9, 10, 11, 56, 57, 58. Lab. fee, \$.50. Three credits; 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, 127, 128. *History of Painting*—Evolution of the great schools of painting. Illustrated lectures and discussions. One credit a quarter; autumn, winter, spring. Isaacs.

130. *Pottery*—Advanced work with emphasis on glazing. Lab. fee, \$2.50. Three credits a quarter; autumn, winter. 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. Lab. fee, \$1. Prerequisite, junior standing. Three credits a quarter; winter and spring. Rhodes.

157. *Metal Work*—Etching, sawing and hammering of copper and brass. Lab. fee, \$2. Prerequisites, P.S.D. 53, 54, 55. Three credits; autumn. Wood.

158. *Jewelry*—Simple problems in silver. Stone setting. Lab. fee, \$5. Prerequisite, P.S.D. 157. Three credits; winter. Wood.

159. *Jewelry*—Advanced jewelry. Lab. fee, \$5. Prerequisite P.S.D. 158. Three credits; 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*—Prerequisite, P.S.D. 56, 57, 58. Lab. fee, \$1. Three credits; autumn, winter, spring. Isaacs.

166, 167, \*168. *Art Structure*—Problems in decoration related to the stage. Lab. fee, \$1. Three credits a quarter; autumn, winter, spring. Benson.

<sup>1</sup> Absent on leave 1929-30.

169, 170, 171. *Costume Design*—Prerequisites, P.S.D. 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. Lab. fee, \$1. Five credits per 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*—Prerequisite, P.S.D. 171. Two credits; autumn, winter, spring. Buck.

#### COURSES FOR GRADUATES ONLY

\*207, 208, 209. *Portrait Painting*.

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. 160P.

*Suggested Courses in Commercial Art*—P.S.D. 9, 10, 11, 105, 106, 116, 151, 152, 5, 6, 7, 160, 161, 162.

### PHARMACY, PHARMACEUTICAL CHEMISTRY, PHARMACOLOGY, TOXICOLOGY, MATERIA MEDICA AND FOOD CHEMISTRY

Bagley Hall

*Professors Johnson, Lynn, Langenhan; Assistant Professor Goodrich; Instructors Lofgren, Lehman, and Assistants.*

1, 2, 3. *Theoretical and Manufacturing Pharmacy*—Principles of pharmaceutical operations, and manufacture of Pharmacopoeial and National Formulary preparations. Two lectures, one quiz and two laboratory periods a week. Lab. fee, \$6.50 a quarter. Five credits a quarter; autumn, winter spring. (Phar. 1, 2 repeated winter, spring quarters.) Lofgren and assistants.

4. *Commercial Pharmacy*—Lecture course, covering the commercial problems of the practical pharmacist. Two credits; winter. 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. Alkaloid assay of crude drugs and assay of volatile oils. Two lectures and three laboratory periods a week. Five credits; autumn, winter. Four credits; spring. Lab. fee, \$6.50 in autumn and winter quarters, and \$4.50 in spring quarter. Goodrich.

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

\*Not offered in 1929-30.

period a week. Lab. fee, \$3 a quarter. Three credits a quarter; autumn, winter, and spring. Lehman and assistants.

12, 13. *Materia Medica*—Crude organic drugs, their source, methods of collecting and preserving, identification, active constituents and adulterations. Three lectures a week. Three credits; autumn, winter. Goodrich.

15. *Field Materia Medica*—Native medicinal plants of Washington and plants under cultivation in the drug garden. One laboratory period a week, consisting largely of work in the drug garden and field trips. Lab. fee, \$1. One credit; 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. Two credits a quarter; autumn, winter, spring. Lynn.

112. *Materia Medica*—Advanced course in materia medica dealing largely with animal drugs and biological products. Three credits; spring. Goodrich.

113, 114, 115. *Advanced Prescriptions*—Difficult and incompatible prescriptions. Special problems in dispensing, and new and non-official remedies. Manufacture of diagnostic re-agents. Two lectures, one quiz and two laboratory periods. Lab. fee, \$6.50 a quarter. Five credits; autumn, winter, spring. Langenhan and assistants.

117, 118, 119. *United States Pharmacopoeia and National Formulary*—Chemistry and pharmacy of the U.S.P. and N.F. preparations and inorganic chemicals. Two recitations a week. Two credits; autumn, winter, spring. Langenhan.

125, 126, 127. *Current Problems*—Lectures and recitation in current pharmaceutical problems, commercial and scientific. Use is made of the current numbers of most of the pharmaceutical journals published in the United States, and of several medical journals. One credit; autumn, winter, 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. Two lectures and three laboratory periods. Lab. fee, \$6.50 a quarter. Five credits; autumn, winter, spring. Lynn.

201, 202, 203. *Investigation*—Graduate students may undertake original investigation in pharmacy, pharmaceutical chemistry, pharmacology, volatile oils and plant principles under the direction of an instructor. Laboratory fee, \$1 per credit hour. Credit to be arranged. Autumn, winter, spring. Lynn, Langenhan, Goodrich, Johnson.

## PHILOSOPHY

Philosophy Hall

*Professors Savery, Blake; Assistant Professor Langford; 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. Langford, ———.

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. Langford.

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*—(1) The religious experience: the origin, nature and types of religion, and its effect on individual happiness and morality. The social aspect of religion and the religion of democracy. Study of mystical experiences. (2) The truth of religion: the proofs of the existence of God, the basis of faith, pessimism, optimism and meliorism, human destiny. Discussion of agnosticism. Prerequisite, Phil. 1. Five credits; spring. Savery.

Oriental Studies. 114, 115, 116. *History of Religion*—Autumn Quarter: primitive conceptions of religion; naturism and spiritism; Winter Quarter: the religions of the Far East; Spring Quarter: Judaism, Christianity, and Muhammadanism. Offered in alternate years. Three credits; autumn, winter, spring. Gowen.

\*123. *Philosophy in English Literature of the Nineteenth Century.*

129. *Esthetics*—Theories of the nature of Art, the nature of Beauty, and the various sources of esthetic effect. Open only to juniors and seniors. Five credits; autumn. Savery.

133. *Ethical Theory*—An advanced course in the fundamental concepts and principles of ethics. Prerequisite, Phil. 2 or 3. Two credits; spring. ———.

\*Not offered in 1929-30.

141-142-143. *Contemporary Philosophy*—Modern movements and controversies. Readings and discussions on pragmatism, new intuitionism, mysticism, philosophy of faith, fate and free will, mechanism and vitalism, materialism and idealism, the finite and infinite, the new realism, etc. Prerequisite, Phil. 1 or 101-102-103. Two credits a quarter; autumn, winter, spring. 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. Savary.

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. Langford.

\*241-242-243. *Seminar in Plato and Aristotle*.

244-245-246. *Seminar in Hume and Kant*—A critical study. Open to students upon approval of instructor. Two or three credits a quarter; autumn, winter, spring. 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; Instructor Auernheimer; Associates Bagshaw, Edmundson, Graves; 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 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 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 or-

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\*Not offered in 1929-30.

ganized athletic contests are required to receive a medical examination the year of and previous to the sport in which they desire to participate.

*Requirements for a Major*—Thirty-six credits including courses 80, 90, 110, 131, 132, 133, 141, 142, 143, 145, 150, 153, and four credits in advanced athletic methods. Students are advised to complete, in addition to the physical education major, a second teaching major, or two teaching minors. (Note: Course P.E. 153 is given by the department of physical education for women.)

*Academic Minor*—Minimum 20 credits including courses 80, 90, 110, 141, 142, 143, and four credits in advanced athletic methods.

## 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. 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. One and two-thirds credits a quarter; autumn, winter, spring. Auernheimer.

### FOR SOPHOMORES

51, 52, 53. *Advanced Physical Education*—Advanced work in natural gymnastics, games and sports; self-testing activities, combat, self-defense. During the sophomore year the student is permitted to select three activities (one for each term) in which to specialize. One and two-thirds credits a quarter; autumn, winter, spring. Staff.

55, 56, 57. *Restricted Exercise for Sophomores*—A continuation of Physical Education 5, 6, 7. 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. 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; spring. Foster.

110. *Athletic Training and First Aid*—This course will consider athletic training and conditioning with practice in the use of tests to deter-



mine 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. Two credits; winter. 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. Demonstrations in the presentation of play materials. Observation of work in the city. Three credits; spring. Kunde.

131. *Kinesiology*—A study of body mechanics including muscles, bones, and joints. An analysis will be made of the fundamental movements involved in gymnastics, athletic sports and vocational activities with reference to mechanical structure and function. Prerequisites, Physiology 53, 54, 55. Zoology 1, 2. Three credits; autumn. Auernheimer.

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, Physical Education 131. Three 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. 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. Prerequisites, Soc. 1, Educ. 119, Zool. 1-2, Psych. 1. 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. Practice in constructing a curriculum for an actual situation. Prerequisites, Physical Education 141, 142, 143, and Nursing 140. Three credits; spring. Foster and Staff.

155. *Scouting Principles and Practice*—Scouting education including its philosophy, pedagogy and psychology. A study of the aims, objectives, organization and management, along with the practical participation in the organization and use of subject matter. Five credits; spring. Arbuthnot.

*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. Bagshaw.

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, base-running 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*—Prerequisite, one season intramural or varsity practice. Two credits; autumn. Arbuthnot.

\*175. *Methods in Teaching Swimming and Diving.*

\*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 Education 160S.

## PHYSICAL EDUCATION AND HYGIENE FOR WOMEN

### Gymnasium

*Associate Professor Gross, Director; Assistant Professors deVries, McGownd; Instructor Gunn; Associates Helmich, Martin, Spencer, Glover; Assistants Cundiff, Duncan, Jefferson, Rickey.*

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 wholesome 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 regarding 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. One or two credits; autumn, winter, spring. Gunn.

\*Not offered in 1929-30.

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. 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. One or two credits; autumn, winter, spring. Stephenson, Rivers.

#### ACTIVITY COURSES

61. *Folk Dancing*—Two hours of practice. One credit a quarter; autumn, winter. Martin.

62. *Clog and Character Dancing*—Twice a week. One credit; autumn, winter, spring. Martin.

63. *Advanced Clog and Character Dancing*—Twice a week. One credit; winter, spring. Martin.

64. *Hockey*—Two hours of practice. One credit; autumn. Helmich, Duncan.

65. *Basketball*—Two hours of practice. One credit; winter. Helmich.

67. *Elementary Tennis*—Two hours of practice. One credit; autumn, spring. Helmich, Cundiff, Duncan, Spencer.

68. *Soccer*—Twice a week. One credit; winter. Duncan.

69. *Advanced Tennis*—Prerequisite, Phys. Educ. 67. Two hours practice. One credit; spring. Helmich.

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. Cundiff.

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. *Riding*—This course will be given at the Washington Riding Academy. Fee, \$6. Twice a week. One credit; autumn, winter, spring. Rickey.

95. *Swimming*—Two hours of practice. Fee, \$1. One credit; autumn, winter and spring. Glover, Duncan, Spencer.

96. *Intermediate Swimming*—Two hours of practice. Fee, \$1. One credit; autumn, winter, spring. Glover, Duncan, Spencer.

97. *Advanced Swimming*—Two hours of practice. Fee, \$1. One credit; autumn, winter, spring. Glover, Duncan.

*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. Martin.

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; spring. 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. Research 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; autumn, winter, spring. 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, an analytical study of various types of activities. Prerequisite P.E. 101, 102, 111, 112, 113, 162, 163, 164, and Edu. 160R. Two hours a week. Two credits; winter. Gross.

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\*Not offered in 1920-30.

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 (two quarters), P.E. 62, 63, 64 (two quarters), 65, 67, 75, 80, 82, 87, 91, 92, 93 (two quarters), 95, and 96 or 97. Five credits; autumn, winter, spring. Aid, Glover, Helmich, Martin.

P.E. 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. Helmich.

P.E. 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.

P.E. 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. Helmich.

178. *Advanced Clog and Character Dancing*—Practice in advanced clog and 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*—This is a three weeks' course given in September at Hidden Cove Camp on Hood Canal. 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. Gross and Staff.

*Teachers' Course in Phys. Educ.*—See Educ. 160R.

#### COURSES FOR GRADUATES ONLY

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, in-

cluding 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, McCurdy; Assistant Professor Utterback; Instructor Newbury; Associates Higgs, Marick, Sanderman.*

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. Phys. 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 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-med 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. Anderson.

54. *Photography for Amateurs*—Open to students who have had elementary physics or chemistry. Lab. fee, \$2. Three or five credits; spring. Higgs.

89-90. *Physics of the Home*—For students in home economics, nursing and women majors in physical education. Lab. fee, \$2. Five credits; autumn and winter. Osborn.

97. *Physics for Engineers*—Mechanics. Prerequisites, high school physics or enrollment in Section H (See note), 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*—Atomic structure, properties of electrons and protons, origin and properties of radiation, radio-activity, ionization, presented from the experimental viewpoint. Prerequisite, Phys. 3 or 6. Lab. fee, \$2. Five credits. Two credits for graduate physics students. Autumn.

Anderson.

105. *Electricity*—Prerequisite, Phys. 3 or 6. Lab fee, \$2. Five credits; winter.

Brakel.

111. *Heat and Pyrometry*—Prerequisite, Phys. 3 or 6. Lab. fee, \$2. Five credits; spring.

Utterback.

\*113. *Acoustics and Illumination*—For students in architecture only. Prerequisite, Physics 2. Lab. fee, \$2. Four credits; spring.

Osborn.

115. *Applications of Photography to Science Work*—Prerequisite, special permission. Lab. fee, \$2. Three credits; winter.

Higgs.

#### COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

154. *Electrical Measurements*—For engineering students. Prerequisite, Physics 97, 98, 99. Lab. fee, \$4. Three credits; autumn, winter, spring.

Brakel.

\*156. *Applications of Thermionic Vacuum Tubes*—Prerequisite, Physics 105 or 154. Lab. fee, \$2. Three credits; autumn.

Higgs.

160. *Physical Optics*—Prerequisite, Phys. 3 or 6, and calculus. Lab. fee, \$2. Five credits; spring.

Osborn.

167, 168, 169. *Special Problems*—Prerequisite, special permission. Credit arranged; autumn, winter, spring.

Staff.

\*170. *Spectrometry*—Prerequisite, 20 hours of physics. Lab. fee, \$2. Five credits; spring.

Osborn.

\*185. *X-Rays and Radio-activity*.

191-192. *Analytical Mechanics*—Prerequisites, Phys. 3 or 6 and calculus. Three credits fall and two credits winter.

Newbury.

#### COURSES FOR GRADUATES ONLY

\*200-201-202. *Dynamics*.

\*203-204-205. *Theoretical Electricity*—Three credits a quarter; autumn, winter, spring.

Brakel.

206-207. *Vibratory Motion and Sound*—Prerequisite, graduate standing. Lab. fee, \$2. Two credits; fall and winter.

Osborn.

210-211. *Quantum Theory and Atomic Structure*—Prerequisite, graduate standing. Three credits; fall and winter.

Utterback.

212. *Theory of Spectroscopy*—Prerequisite, graduate standing; three credits; spring.

McCurdy.

\*213. *Fine Structure of Spectral Lines*.

\*215-216-217. *Seminar*.

\*220-221-222. *Electron Theory*.

\*Not offered in 1920-30.

223. *Gaseous Discharge*—Prerequisite, graduate standing. Three credits; spring. McCurdy.
- \*225. *Thermo Dynamics*—Three credits; autumn. Utterback.
- \*226. *Kinetic Theory of Gases*—Three credits; winter. Utterback.
- \*230. *X-Rays and Crystal Structure*—Three credits; spring. Anderson.
- \*240-241-242. *Theoretical Physics*.
- 250-251-252. *Research*—Credit arranged; autumn, winter, spring. Staff.

## POLITICAL SCIENCE

### Philosophy Hall

*Professors Martin, Schweppe, George, Hail; Assistant Professors Cole,<sup>1</sup> Mander, Wilson; Instructor Hulse; 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.

<sup>\*</sup>Not offered in 1920-30.

<sup>1</sup> Absent on leave 1920-30.



## 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.

## 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.

## REQUIRED COURSE ON CONSTITUTIONAL GOVERNMENT

101. *Constitutional Government in the United States and in the State of Washington*—The framing of the American Constitution; the law of the Constitution; the spirit of the Constitution; the Constitution of the State of Washington. No prerequisites. Required of all candidates for the bachelor's degree during their junior or senior years who graduate after January, 1927, except students who take one of the following courses: Pol. Sci. 1, 112, 153; Law 170, 171; or one of the following sequences of courses: Pol. Sci. 151 and 163; Hist. 60, 61, 62 and 163-164-165; Hist. 143, 144, 145 and 163-164-165. Two credits a quarter; autumn, winter, spring. Wilson, Hulse, Meany.

## 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. Hail.

118. *Elements of Law*—The development of some of the more elementary rules of the common law; the definition, sources and sanction of law; the judicial system of the United States and of the state of Washington; law and the public service. Open to pre-legal students in the lower division. Five credits; autumn. Wilson.

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 prelegal students in the lower division. Five credits; winter. Wilson.

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. Wilson.

#### 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.

123. *International Relations*—Evolution of the modern states system; Alliances and the balance of power; leading principles of the European concert; geographic, economic, cultural, racial, psychological and social factors underlying international relations; the problems of diplomacy. Three credits; autumn. 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. Hail.

*International Law*—(See Law 184, 185). Principles of International Law—The general principles of international law as developed by custom and agreement, and as exhibited in decisions of international tribunals and municipal courts, diplomatic papers, treaties, conventions, in legislation, in the works of authoritative writers, and in the conduct of nations. Three credits a quarter; autumn, winter. Martin.

### Group III.—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. Hulse.

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. Mander.

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.

*Constitutional Law*—See Law 171, 172.

155. *Principles and Law of Public Administration*—The rights, duties and liabilities of public officers; the public service, relations between politics and administration; rules, regulations and general practices developed in the conduct of administrative commissions and boards; organization of executive departments; administrative problems. Five credits; winter. Hulse.

*Public Finance*—See Business Administration 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. Hail.

159. *Government and Politics of the British Empire*—A study of the political institutions of the British Commonwealth of Nations, including Canada, Australia, New Zealand, South Africa, and the Irish Free State; the Constitution of the Empire; the imperial conferences; the development of the principle of self-government in the dominions. Five credits; winter. 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. Hulse.

162. *Municipal Administration*—The mayor; the city departments; the city employees; the civil service; city planning; water supply; streets and parks; waste disposal; health; police; fire protection; city revenues; education; public utilities; traffic regulation. Five credits; winter. Hulse.

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; spring. Hulse.

164. *Administration of Local Government*—A survey of the administrative problems in the American states. Surveys will be made of the Administration organization with emphasis on the recent reorganization. The relation of state administrations to its subdivisions will be given special attention. A laboratory treatment will be used during the course. Lectures and field surveys. Five credits; spring. Hulse.

#### COURSES FOR GRADUATES ONLY

201, 202, 203. *Graduate Seminar*—For candidates for higher degrees in political science. Three credits; autumn, winter, spring. 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, 222, 223. *Seminar in International Law and Diplomacy*—Special subject for investigation: The constitutional organization of the League of Nations, and the reorganization of the Department of State. Two to five credits; autumn, winter, spring. Martin, 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 in Comparative Government*—Topic: English political parties. Three to five credits; spring. Mander.

261. *Seminar in Local Government*—Topic: A study of municipal surveys. Three to five credits; winter. Hulse.

*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 com-

mon 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 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*—Origin and development of psychology, beginning with the primitive conception of mind. Prerequisite, 10 hours 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 nature and analysis of consciousness and the relation of consciousness to behavior. 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; winter. 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. 131. 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, Ober, Umphrey; Associate Professors Patzer, Goggin, De Vries, Helmlingé; Assistant Professors Chessex, Garcia-Prada; Instructors Whittlesey, Sanchez, W. Wilson, Simpson; Associates Hamilton, Southwick; Assistant C. Wilson; 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.

Students may not begin French I and Spanish I (nor Italian), during the same quarter; and it is better to have three quarters of one Romanic language before beginning another. If the entrance requirement in foreign language has not been fulfilled, no credits will be given for Courses 1, 2, 3, 4, and 7 in any of the Romanic languages. Freshmen and sophomores

may enter any course, except graduate, for which they have the prerequisites. Graduate students working for the master's degree and offering a minor in French or Spanish will do not less than is required of majors for the A.B. 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. For students majoring in any one of the Romanic languages, credits in this course shall count for either French, Spanish or Italian, but not more than three of these credits will be accepted in satisfaction of the nine credits in literature required by the department for recommendation for the normal diploma in French or Spanish. 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. 160T, 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.

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 for French 137, 138, 139. Prerequisites, French 6 and 9 or an equivalent. Two credits a quarter. Whittlesey.

101, 102, 103. *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.

Patzner, Helmlingé, De Vries, 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. Patzner, Helmlingé, De Vries, Chessex, Whittlesey, Simpson, Southwick, C. Wilson.

107, 108. *Themes*—Writing of original compositions upon assigned topics. Prerequisite, 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 1929-1930 the number is 108. Three credits; spring. Helmlingé.

118, 119, 120. *Survey of French Literature*—Lectures in English and collateral reading of English translations. Those who have studied French sufficiently will be assigned French texts to read. No prerequisites. Three credits a quarter; autumn, winter, spring. De Vries.

121, 122, 123. *French Novel*—Course conducted in French. A history of the French novel from its beginning. Assigned reading of novels in whole, or in part. Prerequisite, French 6 and 9. Three credits a quarter, autumn, winter, spring. Helmlingé.

\*124, 125, 126. *The Short Story*.

127, 128, 129. *Advanced Conversation for Majors*—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, Chessex.

(Professor Chessex conducts the class in the spring, Helmlingé in autumn and winter).

141, 142, 143. *The French Drama*—History of the French drama from its beginning. Lectures in French and assigned reading to be done outside of class. Reading notes to be submitted whenever called for. Prerequisites, French 6 and 9, or equivalent. Three credits a quarter; autumn, winter, spring. Chessex.

151, 152, 153. *History of the French Literature of the Nineteenth Century*—Lectures in French and assignments of reading to be done outside of class. Prerequisites, French 6 and 9 or equivalent. Three credits a quarter; autumn, winter, spring. Patzner.

\*Not offered in 1929-30.



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; 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*.

171, 172, 173. *Seventeenth Century Literature*—Lectures in French on the principal authors of this period. Assigned reading. Reading notes to be submitted whenever called for. Prerequisites, 6 and 9, or equivalent. Two credits a quarter; autumn, winter, spring. Chessex.

*Teachers' Course in French*—See Educ. 160T.

#### COURSES FOR GRADUATES ONLY

201, 202, 203. *Middle French and Sixteenth Century*—Masterpieces of the fourteenth, fifteenth and sixteenth centuries will be read, and their influence upon later French literature studied. Open to graduates who have studied French at least four years. Two credits a quarter; autumn, winter, spring. Frein.

\*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*.

241, 242, 243. *French Historical Grammar*—Phonology, morphology, and syntax of the French language from 842 to the Renaissance. The later centuries are studied in courses 201, 202, 203, along with the literature of the fourteenth, fifteenth and sixteenth centuries. Open to graduates only. Course will be conducted in English if there are any who do not easily understand French. Three credits a quarter; autumn, winter, spring. Frein.

### III. ITALIAN

The department, through its scheme of alternative courses, offers enough work to satisfy the major or minor requirements. Students who desire to major or minor in Italian are requested, however, to plan their work with the instructor in charge.

1-2, 3. *Elementary*—No credit will be given for Italian 1 until 2 has been completed. Italian 1 is repeated in winter and 2 in the spring. Five credits a quarter; autumn, winter, spring. Giuntioni.

\*111, 112, 113. *Modern Italian Literature*.

\*118, 119, 120. *Survey of Italian Literature*.

\*Not offered in 1929-30.

121, 122, 123. *The Italian Novel*—History of the novel from its beginning. Prerequisite, Italian 3, or 2 with grade of A or B. Three to five credits a quarter. To enroll for more than three credits the instructor's permission is necessary. Autumn, winter, spring. Giuntoni.

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.*

231, 232, 233. *Italian Literature of XIII and XIVc*—May be taken with credit by those who have had 201, 202, 203. Open to all students who can read Italian. Research according to ability, and special interests of the students. One to five credits a quarter; autumn, winter, spring. Goggio.

#### IV. PROVENÇAL

223. *Old Provençal*—Readings, mostly epic and lyric. Three credits; spring. Goggio.

#### V. SPANISH

Requirements of the department: Spanish 159, 101, 102, 103, Educ. 160U, 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 courses, except graduate, for which they have the prerequisite.

1-2, 3. *Elementary*—Each of the courses 1, 2, 3 is repeated each quarter. No credit will be given for Span. 1 until 2 has been completed. Five credits a quarter; autumn, winter, spring.

4, 5, 6. *Reading of Modern Authors*—Reading of some of the best works of the nineteenth century. Span. 4, 5, 6, may be combined with 7, 8, 9, making a five-hour course each quarter. Prerequisite to Span. 4 is 3 or equivalent. Three credits a quarter; autumn, winter, spring.

7, 8, 9. *Grammar, Composition, Conversation*—May be combined with Span. 4, 5, 6, making a five-hour course. Prerequisite to Span. 7 is 3. Span. 7 is prerequisite to 8. Two credits a quarter; autumn, winter, spring.

101, 102, 103. *Advanced Composition and Conversation*—Prerequisite Span. 9. Three credits a quarter; 101, 102, repeated each quarter; 103 in winter and spring. Ober, Garcia-Prada, Sanchez, Wilson.

104, 105, 106. *Advanced Reading*—Prerequisite, Spanish 6 and 9. This course should be taken with Span. 101, 102, 103. Two credits a quarter; 104, 105 repeated each quarter; 106 in winter and spring. Ober, Garcia-Prada, Sanchez, Wilson.

118, 119, 120. *Survey of Spanish Literature*—Selected texts, collateral readings, lectures. Prerequisite, Span. 6. Two credits a quarter; autumn, winter, spring. Umphrey.

\*Not offered in 1929-30.

121, 122, 123. *The Novel*—Lectures on the history of the Spanish novel from its beginning to the present. Assigned reading in Spanish, of novels to be read outside of class, and reports made to the class. Prerequisite, Spanish 102, or equivalent. Three credits a quarter; autumn, winter, spring. Umphrey.

131. *Lyric Poetry*—A study of the general rules of lyric poetry. Reading of some of the best lyrics of modern Spanish. Prerequisite, Spanish 101. Two credits; spring. Garcia-Prada.

\*141, 142, 143. *Spanish Drama*.

159. *Advanced Syntax*—Problems in syntax studied from the teacher's standpoint. Prerequisites, Span. 101, 102. Three credits; spring. Ober.

184, 185, 186. *Spanish American Literature*—Representative writings of Spanish American authors. Collateral reading and reports. Lectures. Prerequisites, Span. 102 or equivalent. Three credits a quarter; autumn, winter, spring. Umphrey.

*Teachers' Course in Spanish*—See Educ. 160U.

#### 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.

#### 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

\*Not offered in 1929-30.

may be taken with 13, 14, 15, making a five-hour course. Three credits a quarter; autumn, winter, spring. Vickner.

13-14-15. *Norwegian-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, reports 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.

\*Not offered in 1929-30.

## SOCIOLOGY

## Physics Building

*Professors Woolston,<sup>1</sup> McKenzie (Chairman); Associate Professor Price; Assistant Professors Hayner, Stern; Associates Hathway, Wander; Assistants Guthrie, ———.*

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 elections. 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 1 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:

- (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). Fee, \$1.50. Five credits; autumn, winter, spring. Stern, Price, Hayner, Wander, Guthrie, ———

55. *Human Ecology*—Factors and forces which determine the distribu-

<sup>1</sup> Absent on leave 1929-30.

tion of people and communities. A study of ecological concepts and processes: position, location, mobility, dominance, aggregation, segregation, centralization, invasion, succession. Materials fee, \$2.50. Five credits; autumn. 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, \$2.00. Three credits; autumn, winter. Hayner.

57. *Child Welfare*—Rights of childhood to health, education, recreation, protection; measures now in use to secure them. Three credits; winter. Hathway.

61. *The Small Town*—Ecological and sociological changes taking place in the small communal units. Special study of the towns and villages of Washington. Three credits; spring. McKenzie.

62. *Play and Leisure Time*—The fundamental patterns, commercialization, institutional organization and ecology of recreational activity. Materials fee, \$2.00. Three credits; spring. Hayner.

63. *Community Organization*—Social conditions and theories that underlie the modern community organization movement. Experiments and methods that have evolved to prevent disorganization. Case studies of attempts at community organization. Three credits; spring. Hathway.

64. *Field of Social Work*—Historical background and development of social work as a specialized field. Present scope, aims and methods. Typical problems and agencies; field trips. Three credits; autumn. Hathway.

65. *The City*—Factors determining the growth, structure and composition of cities. Case studies of typical cities throughout the world. Should if possible be preceded by Soc. 55. Five credits; winter. 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.

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.

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.

80. *Social Pathology*—The social factors involved and methods of dealing with physical defectiveness, feeble-mindedness, insanity, narcotics, alcoholism, prostitution, poverty, vagrancy, juvenile and adult delinquency. Five credits; autumn. Hayner.

90. *Social Change*—Innovation and conditioning factors. Sociological analyses and typical processes, contrasted with reform programs. Inertia, vested interests, leadership, trends. Prerequisite, five hours sociology or anthropology. Five credits, winter. Price.

97. *America in Civilization*—The processes at work in the formation of the American culture pattern will be analyzed in terms of culture accumulation and diffusion, cultural inertia and cultural lag. Prerequisite, five hours sociology or anthropology. Not open to students who have had credit for Soc. 197. Five credits; winter. Stern.

103. *Problems of Maladjustment*—(Offered in Extension Service.)

105. *Industrial Groups*—An analysis of the modern industrial population, with reference to the formation of interest groups, such as trade and professional associations, employers' associations, trade unions, company unions, producers' co-operative, etc. These organizations will be studied in respect to their genesis, structure, codes, policies, aims and methods, and the part they play in social conflict and social control. Five credits; spring. Wander.

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. Wander.

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. Wander.

\*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 5 hours economics. Fee, \$2.50. Five 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.

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.

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.

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. Price.

\*151. *Social Conflict.*

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; spring. 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.

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\*Not offered in 1929-30.

\*154. *Charity Organisation and Administration.*

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*—Social, economic and hereditary causes of crime. Study of the criminal and his group relations. Five credits; spring. Hayner.

158. *Personality Problems*—Survey of the literature on personality; case studies of personality problems. Materials fee, \$2.00. Two credits; autumn. Hayner.

\*159. *Penology.*

164. *Social Education*—Purpose, content and method of courses intended to promote good citizenship. Critical discussion of programs and texts used in Washington schools. Recommended for teachers of social science subjects. Prerequisite, fifteen hours social science. Two credits; spring. ———.

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.

184. *Cultural Contact (The Pacific Rim)*—Routes and areas. Incentives and organizations involved—economic, missionary, diplomatic, etc. Problems of divergence in social ritual, technique, ideology, status. Prerequisite, 10 hours sociology or equivalent. Three credits; autumn. Price.

185. *Cultural Conflict (The Pacific Rim)*—Friction and norms of adjudication; status, disorganization, and self-defense; funding attitudes; shifting regions of discussion and compromise; accentuators. Prerequisite, 10 hours sociology or equivalent. Three credits; winter. Price.

186. *Culture Accommodation (The Pacific Rim)*—Effects of alien products and techniques; group-defense innovations; imported institutions. Cultural self-differentiation. Aims, traits, and trends. Prerequisite, 10 hours sociology or equivalent. Three credits; spring. Price.

\*191. *Advanced Case Work.*

194. *History of Social Thought I: From Primitive Times to the Industrial Revolution*—Movements in social thought will be presented through the teachings of outstanding representatives who will be 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, ten hours sociology or equivalent. Three credits; spring. Stern.

\*Not offered in 1929-30.



## 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.

201. *Public Opinion*—Character and operation of beliefs formed by general discussion. Problems of propaganda, criticism and education. Advanced students only. Two credits; winter.

207-208-209. *Community Research*—Original investigation of special community 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. Members of the department.

## ZOOLOGY

## Science Hall

*Professor Kincaid; Associate Professors Guberlet, E. V. Smith; Assistant Professors Miller, Hatch; Instructor Mentzer; 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. Miller.

102. *Experimental Zoology*—An experimental study of the organism as a dynamic unit, including problems of development, growth and regeneration, and response to external factors. Prerequisite, Zool. 1-2 or 3-4. Lab. fee, \$2. Five credits; spring. Miller.

106. *Plankton*—Classification, adaptations and interrelationships of the microscopic fauna of the sea. Field work in Puget Sound. Prerequisite, Zool. 1-2. Lab. fee, \$2. Five credits; autumn. Kincaid.

107. *Parasitology*—Animal parasites. Prerequisite, Zool. 1-2 or 3-4. Lab. fee, \$2. Five credits; spring. Guberlet.

108. *Limnology*—Classification and interrelationship of the organisms found in lakes and streams. Field work in the neighboring fresh-water bodies. Prerequisite, Zool. 1-2. Lab. fee, \$2. Five credits; spring. Kincaid.

111. *Entomology*—The structure, classification and economic relations of insects. Prerequisite, Zool. 1-2 or equivalent. Lab. fee, \$2. Five credits; spring. (Alternate with 112. Not given in 1930-1931.) Hatch.

112. *Insect Morphology*—The structure and taxonomy of insects. Prerequisite, Zool. 1-2 or equivalent. Lab. fee, \$2. Five credits; spring. (Alternate with 111. Not given in 1929-1930). Hatch.

121. *Microscopic Technique*—Methods of imbedding, sectioning and staining animal tissues. Prerequisite, Zool. 1-2 or its equivalent. Lab. fee, \$2. Three credits; winter. Guberlet.

125, 126. *Invertebrate Zoology*—The morphology, physiology, life history and habits of invertebrate animals, with special reference to the local marine fauna. Prerequisite, Zool. 1-2 or 3-4. Lab. fee, \$3.50. Five credits a quarter; autumn, winter. Miller.

127, 128. *Comparative Anatomy*—Comparative structure of the vertebrate animals. Prerequisite, Zool. 1-2 or 3-4. Lab. fee, \$3.50. Five credits a quarter; autumn, winter. Miller.

\*\*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. 160Z.

#### 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. Mentzer.

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. Goodsell, Smith.

20. *Physiology for Hospital Students*—A special course for hospital students. Lab. fee, \$1.50. Two credits; autumn, winter, spring. Mentzer, 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. Goodsell, 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. Mentzer.

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. Mentzer.

\*\*Will be offered if a sufficient number of students elect the course.

## SUMMER QUARTER

Burd, Henry Alfred, Ph.D.....Director

*Facilities*—The summer quarter is an integral part of the University year and its courses co-ordinate with those of the other quarters. It offers special opportunities for teachers and others whose regular work is suspended in the summer months.

Regular work is offered in the Colleges of Liberal Arts, Business Administration, Fine Arts, Science, the Graduate School, the Schools of Education, Journalism, and Law, and in the pre-medical course. The Puget Sound Biological Station at Friday Harbor maintains a session of nine weeks.

The laboratories and libraries are open and the various departments offer both undergraduate and graduate work equal in quality to that maintained during the rest of the year. In most departments three grades of work are offered: (a) courses for beginners, (b) courses for advanced undergraduates, and (c) courses for graduate students. In a large number of cases, heads of departments are in charge of the work. In addition to regular members of the faculty many prominent teachers from outside the University give courses.

*For Whom Intended*—The summer quarter affords special opportunities for the following classes of persons:

1. College and university graduates who wish to specialize in some field of study or to work for advanced degrees.
2. Superintendents and principals who wish to acquaint themselves with recent progress in education or to study special problems.
3. High school teachers who wish to advance in their special lines of work.
4. Supervisors and teachers of music, domestic science, drawing and other special fields of work, who will find many courses suited to their needs.
5. School teachers who wish to work toward college degrees.
6. Directors of gymnasiums and teachers of physical education and playground work. The University campus offers unusual opportunities for playground demonstrations, and special emphasis will be placed on this important phase of education. Seattle and the public schools afford objective illustrations of playground and recreation centers.
7. Undergraduates who for some good reason find it desirable to shorten the period of their college course.
8. Recent high school graduates who expect to enter the University in the fall and who wish to become familiar with the University before that time. High school pupils find this an advantageous plan.
9. Persons desiring training in child welfare work, social workers, Y.M.C.A. and Y.W.C.A. directors and teachers.
10. County superintendents who desire to study problems of rural school organization and social and community center work.
11. Candidates for certificates who need special courses in education and psychology or other subjects.
12. Persons who are preparing to become specialists in college and normal school positions.
13. Persons who desire practical field work in botany, geology and zoology in a region possessing unique facilities.
14. Students who wish regular courses in law or special courses in law in preparation for teaching commercial branches.

*Registration*—Registration for the summer quarter of 1930 may be completed on or before Saturday, June 14, at 12 M. Students expecting to be

in attendance during the last term only may register on or before Thursday, July 24, at 4:30 p.m. Students living outside of Seattle may, with the consent of the Registrar, register by mail. Write for application form.

*Admission*—The courses of the summer quarter are open to all persons eligible for admission to the University as either regular, unmatriculated, transient, or special students. As far as possible, all credentials for prospective students and applications for admission as unmatriculated, transient, or special students should be in the hands of the Registrar before the opening of the session.

*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  $7\frac{1}{2}$  credits each term or 15 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.

Persons expecting to be candidates for any degree or the normal diploma at the close of the quarter should make application through the registrar on registration at the beginning of the session.

*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 certain laboratory courses, the Law School, and special music courses requiring individual instruction. (See the statements of these courses for the special fees). No reduction of fees will be made because of late registration or early withdrawal. Open lectures are free to all students regularly registered in the summer quarter, and to the public.

*Master's Degrees Through Summer Quarter*—At each succeeding summer quarter a large number of graduate students are in attendance. Last summer about a third of the whole number of attendants were graduate students. Many were planning definitely to apply their work toward higher degrees. The University will accept 36 credits earned during at least three summer quarters as a fulfillment of the year of required residence.

*Home Study Courses*—The University has established home study courses in many departments. These will be of special advantage to summer quarter students who wish to continue their studies when not in residence.

*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.

*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 Teaching, Economics, Finance, Foreign Trade, General Business, Labor, Management, Marketing, Secretarial Training, and Transportation.

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.

## PUGET SOUND BIOLOGICAL STATION

FRIDAY HARBOR, WASHINGTON

Frye, Theodore Christian, Ph.D.....Director

The Puget Sound Biological Station is near Friday Harbor, Washington, the county seat of San Juan county. The population of the town is approximately 400. It is between Bellingham and Victoria, 30 miles from the former and 20 from the latter, in a direct line. The Station site is about a mile from the town by water, and about two miles by land. The town contains a bank, drug store, butcher shop, bakery, hardware store, garage, and a number of grocery and other stores; so one can make ordinary purchases there.

San Juan county consists of an archipelago of something like 100 islands, separated by channels cut by glacial action. The northern islands of the county are composed of sandstone, comparatively easily eroded, and wearing into potholes. In the sandstone are occasional beds of fossils, notably on the Sucia Islands. On Waldron Island and the Sucia islands the sandstone was formerly cut for paving blocks for city streets.

Some of the islands are partly limestone, notably the north end of San Juan and the west side of Orcas. The largest lime works in Washington is at Roche Harbor, at the northwest corner of San Juan Island. However, comparatively little of the shore line of the archipelago is limestone.

Most of the islands are composed of metamorphic rock, which is very resistant to weathering and therefore changes very little. This is one of the reasons for the remarkable wealth of fauna and flora. Here and there are beaches of glacial material, or of sand, or flats of mud. There are no large streams on the island, and therefore the water is exceptionally free from river detritus. Through the channels between the islands the tides rush at times with a velocity of seven to ten miles an hour, filling and again draining the Gulf of Georgia. The gulf is a body of water roughly 100 x 20 miles, and the spring tides are about twelve feet. The channels in the Friday Harbor region are the chief points of entrance and escape for this immense volume of water. Thus the rocky points are swept clean of erosion deposits, the water is constantly aerated and changed, and a good habitat for water forms is insured. Some of the channels are 100 fathoms deep, thus affording opportunity for the study of forms and life from a considerable depth. Those who have been at the Station have again and again attested to the abundance of marine life. A 12-foot tide exposes a wide beach, and gives excellent opportunity for the study of shore life.

**Grounds and Buildings**—The site consists of 485 acres north of the town. Fresh water is piped in, and salt water is pumped from the sea. The laboratories are only a few yards from high tide. Five laboratories, about 24 x 56 feet, a research laboratory of 9 rooms, and a stockroom, are completed. These are built of cement, hollow tile, plaster, and roofing tile. They are permanent and practically fireproof. A kitchen and dining room, permanent in structure, accommodating 200, was built in 1924. The dining room also serves as a library.

**Stockroom**—Compound microscopes of simple make are supplied for class use from the University of Washington. Certain ordinary glassware, containers, and preservatives may be secured at the stockroom. It is the aim to have in the stockroom the things ordinarily called for. Unusual things cannot be supplied. Those wishing special apparatus should write to the director. It is best for research workers to bring their own microscopes. Instructors, assistants and students alike are charged with whatever they draw out of the stockroom.

The Station owns its own trawling boat, the gift of Robert Moran, of Rosario, Washington.

#### GENERAL INFORMATION

*Lectures*—General lectures by the station staff or by visitors are given as the occasion arises.

*Registration*—Experience has shown that it is wiser to register for one University course only, and all work is planned on that basis. Advanced students have found it profitable to begin some line of investigation in the same field in which they are carrying a course. All registration is at the Station.

*Credit*—Students giving their whole time to the work may earn 13 credits in 9 weeks. All University credit is recorded in the Station books in per cent; 70 per cent is the minimum for passing. Credits may be transferred directly from the Station books.

*Expense*—The first three items are for the whole term or any considerable part thereof:

Tuition fee (Normal Courses \$15.00).....	\$20.00
General laboratory fee .....	5.00
Tent, two or more per tent, each.....	6.50
Board, \$5.50 per week in advance.....	49.50
Stockroom, breakages, etc., (estimate).....	3.00
Books (estimate) .....	2.00
Incidentals (estimate) .....	5.00

Total.....\$91.00

The tuition goes toward paying the running expenses; the laboratory fee is for the maintenance of the equipment, not for stockroom breakages and losses.

For persons occupying the research rooms the total Station fee is \$50, covering tuition and laboratory fees.

The tents are mostly 10 x 12 feet, on board platforms with three-foot board wall, making the lowest part about five feet. Included in the rent are bed springs or cots, mattresses, camp chair, bucket, wash basin, and tumblers. During the time before and after the session the rental is \$1 a week, and the general fee is \$1 per week. Kerosene stoves may be rented for \$2.50 for the season. Bedclothes and pillows are not furnished, but they may be bought at the village. Persons coming to the Station should bring a sufficient supply of bedding for cold nights. A deposit of \$6.50 reserves half a tent for the 9 weeks. The tent sites are not equally desirable; and sometimes the demand exceeds the supply, but there has always been room in the village.

The combination living room, library and dining hall is 35 x 82 feet, with two alcoves for books, and seats 200 at meals. The floor is maple. Connected are kitchen and baths with cemented floors. The dining service is managed by the University of Washington Commons.

*Library*—The library contains about 2800 volumes, of which about 300 are bound volumes of reprints. A limited number of books are shipped to the Station every summer from the University of Washington.

For bulletin of the Puget Sound Biological Station address the publications editor, University of Washington. For other information address T. C. Frye, Director of the Puget Sound Biological Station, University of Washington, Seattle.

## 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-three 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 1929-30 the following activities:

- |   |                               |
|---|-------------------------------|
| 1. Evening Campus Classes                           | 4. Graduate Medical Lectures  |
| 2. Off Campus Classes (Seattle,<br>Everett, Tacoma) | 5. Graduate Nurses' Institute |
| 3. Home Study                                       | 6. Firland School for Nurses  |

About four hundred courses are available either through correspondence or in classes, at moderate fees. This Service is an integral part of the University, and is maintained by the State for educational services to those engaged in gainful employment who desire to pursue advanced study.

### UNIVERSITY CREDIT

Most of the courses at present offered by correspondence may be taken by properly qualified students for credits toward a university degree. Applicants for enrollment wishing to take courses for credit should send their credentials for entrance to the University, with their application, if these credentials are not already on file with the Registrar of the University. Credit work is of course subject to all rules and regulations of the University that are applicable. The work must be thorough, must show creditable grade and must be completed within a reasonable time, which is estimated to be not more than one year for five credit courses and proportionally less for shorter courses.

These qualifications are clearly stated, so that there may be no disappointment from expectations that cannot be fulfilled of an easy road to a degree. Home study and evening classes are not such a road. The work is slow and laborious; but it is worth all the time and money that it costs if considered from the standpoint of its value in scholarship, the pleasure that may be had from this mode of using one's time, and the widening of the horizon of one's mind.

### HOME STUDY COURSES AND UNIVERSITY DEGREES

Students who are unable to spend in residence the full number of years required for a university degree may take as many as half of the required credits for graduation through Home Study, provided that not less than one year of work is done in residence at the University of Washington. But in the senior year at least 36 of the 45 credits must be earned in residence. For such Home Study courses, the student should plan well in advance and with the advice of University authorities. The studies required in the freshman and sophomore years are more largely available for Home Study. There-

fore, to make a combination of Home Study and residence study, students should plan for the first rather than the latter part of the University course in Home Study.

Requirements for the University life diploma may be satisfied in part by Home Study credits.

Nine credits may be earned in approved Home Study courses toward the master's degree.

#### 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 no fees are refunded except upon rejection of the student or failure to give the course, or if the student is compelled to drop the course by conditions beyond his control. 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, dramatic art, economics and business administration, education, engineering, English language and literature, geology, Germanic languages and literature, history, home economics, hygiene of maternity and infancy, journalism, 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 pre-



vious 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 twelfth Graduate Medical Lectures were held July 16 to 20, 1928, 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 Sixth Graduate Nurses' Institute, July 23 to 27, inclusive.

#### HYGIENE OF MATERNITY AND INFANCY

The University Extension Service co-operates with the Washington State Department of Health, Division of Child Hygiene, and the Children's Bureau of the United States Department of Labor, in conducting a course in the Hygiene of Maternity and Infancy. This is a home study course in which more than 120 mothers enrolled during the year 1927-1928. This course does not give University credit and there is no fee for enrollment.

## 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 Director of the Engineering Experiment Station, University of Washington.

*The Puget Sound Biological Station Bulletins* 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 Puget Sound Biological Station, 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.

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### DEGREES

For list of degrees conferred, undergraduate honors, fellowships, scholarships and prizes awarded for the year 1928, see preceding catalogue. The lists for 1929 will be published in a succeeding catalogue.

### 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—1928-29

## 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	934	740	1064	424	427	374	525
Men.....	354	315	380	229	226	196	272
Women.....	580	425	684	195	201	178	253
Lib. Arts.....	614	482	642	2434	2382	1944	2710
Men.....	175	153	186	1102	1087	850	1264
Women.....	439	329	456	1332	1295	1094	1446
Science.....	204	166	288	885	821	808	1049
Men.....	61	67	86	364	359	343	432
Women.....	143	99	202	521	462	465	617
Bus. Admin.....	170	150	221	1052	972	879	1218
Men.....	122	113	173	835	778	691	975
Women.....	48	37	48	217	194	188	243
Education.....	506	318	574	174	201	211	213
Men.....	108	78	109	48	53	62	62
Women.....	398	240	465	126	148	149	151
Engineering.....	17	13	17	727	726	603	839
Men.....	17	13	17	725	725	601	837
Women.....	..	..	..	2	1	2	2
Fine Arts.....	162	115	179	844	789	769	931
Men.....	28	12	151	205	202	181	241
Women.....	134	103	151	639	587	588	690
Fisheries.....	..	1	1	107	87	69	117
Men.....	..	1	1	107	87	69	117
Forestry.....	3	3	3	130	139	118	153
Men.....	3	3	3	130	138	118	152
Women.....	..	..	..	..	1	..	1
Journalism.....	13	10	14	57	66	59	69
Men.....	6	5	7	29	33	35	36
Women.....	7	5	7	28	33	24	33
Law.....	42	35	47	235	231	221	254
Men.....	39	32	44	218	216	208	236
Women.....	3	3	3	17	15	13	18
Library Sci.....	3	1	3	50	51	47	51
Men.....	..	..	..	1	2	1	2
Women.....	3	1	3	49	49	46	49
Mines.....	..	..	..	31	33	22	37
Men.....	..	..	..	31	33	22	37
Pharmacy.....	4	2	4	132	135	121	143
Men.....	4	2	4	120	122	111	130
Women.....	..	..	..	12	13	10	13
TOTALS.....	2672	2036	3057	7282	7060	6245	8309
Men.....	917	794	1038	4144	4061	3488	4793
Women.....	1755	1242	2019	3138	2999	2757	3516

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—1928-29

## 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...	945	751	1078	486	471	418	598
Men.....	365	325	394	269	249	221	315
Women.....	580	426	684	217	222	197	283
Seniors.....	556	432	645	966	1188	1197	1072
Men.....	223	192	244	529	644	652	611
Women.....	333	240	401	437	544	545	461
Juniors.....	723	480	810	1389	1426	1426	1534
Men.....	186	149	217	791	802	811	875
Women.....	537	331	593	598	624	615	659
Sophomores..	260	216	296	1714	1674	1434	1923
Men.....	96	84	116	1009	1003	822	1163
Women.....	164	132	180	705	671	612	760
Freshmen....	138	134	178	2682	2261	1737	3118
Men.....	39	38	59	1530	1344	971	1804
Women.....	99	96	119	1152	917	766	1314
Specials.....	50	23	50	45	40	33	64
Men.....	8	6	8	16	19	10	25
Women.....	42	17	42	29	21	23	39
TOTALS.....	2672	2036	3057	7282	7060	6245	8309
Men.....	917	794	1038	4144	4061	3487	4793
Women.....	1755	1242	2019	3138	2999	2758	3516

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.....	8,309
During summer quarter.....	3,057
	11,366
Deduct summer quarter duplicates.....	599
	10,767

## EXTENSION STUDENTS

Extension Classes		
Men.....	919	
Women.....	2,528	3,447
Home Study		
Men.....	1,166	
Women.....	894	2,060
Total Extension.....		5,507

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