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1953-1955 Course Catalog

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Circulation Desk

MONTANA STATE UNIVERSITY

BULLETIN

October, 1953
Number 451

1953-1955 Catalog Issue
and
Official Directory List



MONTANA STATE UNIVERSITY
MISSOULA

THE UNIVERSITY OF MONTANA

The University of Montana is constituted under the provisions of Chapter 92 of the Laws of the Thirteenth Legislative Assembly, approved March 14, 1913 (effective July 1, 1913).

The general control and supervision of the University are vested in the State Board of Education. For each of the component institutions there is a local executive board.

MONTANA STATE BOARD OF EDUCATION

J. HUGO ARONSON, Governor	Ex-Officio President
ARNOLD H. OLSEN, Attorney General	Ex-Officio
MARY M. CONDON, Supt. of Public Instruction	Ex-Officio Secretary
EMMET J. RILEY, 1954 Butte	HORACE J. DWYER, 1958 Anaconda
G. A. BOSLEY, 1955 Great Falls	CLARENCE L. POPHAM, 1959 Corvallis
GEO. N. LUND, 1956 Reserve	MRS. GEO. CHAMBERS, 1960 Cut Bank
MRS. F. H. PETRO, 1957 Miles City	MERRITT N. WARDEN, 1961 Kalispell

The University comprises the following institutions, schools, and departments:

MONTANA STATE UNIVERSITY, MISSOULA

Established February 17, 1893, and consisting of

The College of Arts and Sciences	The Biological Station (Flathead Lake)
The School of Law	The Forest and Conservation Experiment Station
The School of Pharmacy	The Forest Nursery
The School of Forestry	The Lubrecht Experimental Forest
The School of Journalism	The Division of Public Service
The School of Music	The Graduate School
The School of Business Administration	The Montana Cooperative Wildlife Research Unit
The School of Education	The University Press
The College of Fine Arts	
The Summer College	

Carl McFarland, President

MONTANA STATE COLLEGE, BOZEMAN

Established February 16, 1893, and consisting of

The Division of Agriculture	The Huntley Branch Station (Huntley)
The Division of Engineering	The Northern Montana Branch Station (Havre)
The Division of Household and Industrial Arts	The U. S. Range Station (Miles City)
The Division of Science	The Northwestern Branch Station (Creston)
The School of Nursing	The Engineering Experiment Station
The Agricultural Experiment Station	The Agricultural Extension Service
The Montana Grain Inspection Laboratory	The Agricultural Winter Short Course
The Montana Wool Laboratory	The Public Service Division
The Central Montana Branch Station (Moccasin)	The Summer Quarter
The Horticulture Branch Station (Corvallis)	The Graduate Division

R. R. Renne, President

MONTANA SCHOOL OF MINES, BUTTE

Established February 17, 1893, and consisting of

The Course in Mining Engineering	The Course in Metallurgical Engineering
The Bureau of Mines and Geology	The Course in Geological Engineering
The Course in Petroleum Engineering	

J. Robert Van Pelt, President

WESTERN MONTANA COLLEGE OF EDUCATION, DILLON

Established February 23, 1893, and consisting of

The Two-year Course in Teacher Education	The Two-year General College Course
The Four-year Course in Teacher Education	The Summer Quarter
The Teachers' Service Division	

Rush Jordan, President

EASTERN MONTANA COLLEGE OF EDUCATION, BILLINGS

Established March 12, 1925, and consisting of

The Four-year Curriculum in Teacher Education	The Two-year and One-year Pre-Professional Curricula
The Two-year Curriculum in Teacher Education	The Two-year Liberal Arts Curricula
The Two-year Basic Curricular Course	Summer Session

A. G. Peterson, President

NORTHERN MONTANA COLLEGE, HAVRE

Established March 8, 1913, and consisting of

The Two-year Liberal Arts and Pre-Professional Courses	
The Three-year Courses in Education and Medical Secretaryship	
The Summer Quarter	

L. O. Brockmann, President

MONTANA STATE UNIVERSITY

Missoula, Montana

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For publications and detailed information concerning the different schools and colleges address the Registrar of the particular institution concerned. Communications intended for the Executive Office of the University of Montana should be addressed to the State Capitol, Helena, Montana.

MONTANA STATE UNIVERSITY CALENDAR 1953-55

1953

AUTUMN QUARTER

September 20-26, Sunday through Saturday.....Orientation Week and
Registration
September 24-26, Thursday through Saturday.....Registration of Former
Students
September 28, MondayInstruction Begins
November 26, ThursdayThanksgiving Day, a Holiday
December 14-18, Monday through Friday.....Examinations
December 18, Friday, 5:20 p.m.Autumn Quarter Ends; Christmas
Recess Begins

1954

WINTER QUARTER

January 4, Monday.....Registration and Orientation of New Students;
Instruction Begins
February 17, WednesdayCharter Day
March 15-19, Monday through FridayExaminations
March 19, Friday, 5:20 p.m.Winter Quarter Ends

SPRING QUARTER

March 22, MondayRegistration and Orientation of New Students;
Instruction Begins
May 14-15, Friday and Saturday.....Interscholastic Track Meet
May 31, MondayMemorial Day Holiday
June 7, MondayCommencement
June 7-11, Monday Morning and Tuesday through Friday.....Examinations
June 11, Friday, 5:20 p.m.Spring Quarter Ends

SUMMER SESSION

June 14, Monday (10 weeks and first term)Registration
June 15, TuesdayInstruction Begins
July 5, MondayIndependence Day Holiday
July 19, MondaySecond Term Begins
August 20, FridaySession Ends

AUTUMN QUARTER

September 19-25, Sunday through Saturday.....Orientation Week and
Registration
September 23-25, Thursday through Saturday.....Registration of Former
Students
September 27, Monday.....Instruction Begins
November 25, ThursdayThanksgiving Day, a Holiday
December 13-17, Monday through Friday.....Examinations
December 17, Friday, 5:20 p.m.Autumn Quarter Ends; Christmas
Recess Begins

1955

WINTER QUARTER

January 3, Monday.....Registration and Orientation of New Students;
Instruction Begins
February 17, ThursdayCharter Day
March 14-18, Monday through FridayExaminations
March 18, Friday, 5:20 p.m.Winter Quarter Ends

SPRING QUARTER

March 21, Monday.....Registration and Orientation of New Students;
Instruction Begins
May 13-14, Friday and Saturday.....Interscholastic Track Meet
May 30, MondayMemorial Day, a Holiday
June 6, MondayCommencement
June 6-10, Monday Morning and Tuesday through Friday.....Examinations
June 10, Friday, 5:20 p.m.Spring Quarter Ends

- ARNOLDSON, LOUISE G. (Mrs.)**, Professor Emeritus of French.
Diplome D'Etudes Francaises de Touraine (Alliance Francaise-Universite de Poitiers), 1914; B.A., University of Utah, 1919; Docteur d l'Universite de Paris (Lettres), 1934.
- ASK, MARGARET DEAN (Mrs.)**, Assistant, Health and Physical Education.
B.A., Smith College, 1948.
- ATKINSON, E. A.**, Director of the Summer College; Chairman, Department of Psychology and Philosophy; Professor of Psychology.
B.A., University of Denver, 1920; M.A., Montana State University, 1922.
- BADGLEY, E. KIRK**, University Auditor, Assistant Controller (Professor).
(Acting Controller, effective March 15, 1953.)
B.A., Montana State University, 1924.
- BAKER, FRANK C.**, Assistant in Military Science and Tactics.
Master Sergeant, U. S. Army. (Appointed January 5, 1953.)
- BAKER, LORA M. (Mrs.)**, Assistant Head Resident, North Hall.
- BATEMAN, WILLIAM G.**, Professor Emeritus of Chemistry.
B.A., Stanford University, 1907; M.A., 1909; Ph.D., Yale University, 1916.
- BEATTY, BENJAMIN W.**, Field Assistant, Forest and Conservation Experiment Station.
B.S., Montana State University, 1951.
- BENNETT, EDWARD E.**, Professor of History and Political Science.
B.A., University of Kansas, 1916; M.A., University of Wisconsin, 1923; Ph.D., 1925.
- BERRY, RUTH M. (Mrs.)**, Head Resident, South Hall.
- BISCHOFF, PAUL A.**, Professor of Spanish.
B.S., Montana State University, 1927; B.A., 1928; M.A., Oberlin College, 1932.
- BLAKE, GRACE E. (Mrs.)**, Head Resident Emeritus, South Hall.
- BLUE, JOSEPHINE C.**, Dietitian, Residence Halls.
B.S., University of Wisconsin, 1943.
- BOEKELHEIDE, IRVING**, Assistant Professor of Physics.
B.A., Dakota Wesleyan University, 1936; M.A., University of Minnesota, 1939; Ph.D., State University of Iowa, 1952.
- BONER, AGNES V.**, Instructor in English.
B.S., University of Minnesota, 1935; M.A., 1948.
- BOONE, WILLIAM T.**, Instructor in Business Administration.
LL.B., Montana State University, 1933.
- BRAY, THOMAS A.**, Assistant in Mathematics.
B.A., Montana State University, 1952.
- BREEN, ROBERT**, Director of Family Housing.
B.A., Montana State University, 1936.
- BRIGGS, EDWIN W.**, Professor of Law.
B.S., Oklahoma A. & M. College, 1927; LL.B., University of Oklahoma, 1932; LL.M., Harvard University, 1935.
- BRISSEY, FORREST L.**, Instructor in Psychology and Philosophy.
B.A., Montana State University, 1949; M.A., State University of Iowa, 1952.
- BROCKLEY, WILLIAM R.**, Assistant in Sociology and Anthropology.
B.A., St. Martin's College, 1950. (On staff Spring Quarter, 1953.)
- BROWDER, W. GORDON**, Chairman, Department of Sociology and Anthropology; Professor of Sociology.
B.A., University of Virginia, 1936; M.A., University of North Carolina, 1941; Ph.D., 1943.
- BROWMAN, LUDVIG G.**, Chairman, Department of Zoology; Professor of Zoology and Physiology.
B.S., University of Chicago, 1928; Ph.D., 1935.
- BROWN, WALTER L.**, Assistant Professor of English.
B.A., University of Idaho, 1938; M.A., 1939; Ph.D., University of California, 1952.

- BRUNS, PAUL E.**, Associate Professor of Forestry.
B.A., New York University, 1937; M.F., Yale University, 1940.
- BRUNSON, ROYAL B.**, Assistant Professor of Zoology.
B.S., Western Michigan College of Education, 1938; M.S., University of Michigan, 1945; Ph.D., 1947.
- BRYAN, GORDON H.**, Assistant Professor of Pharmacology.
B.S., Montana State University, 1940; M.S., 1947.
- BUDINA, JOHN W.**, Assistant in Military Science and Tactics.
Master Sergeant. U. S. Air Force.
- BUE, OLAF J.**, Professor of Journalism.
B.A., Montana State University, 1923; M.S.J., Northwestern University, 1941.
- BUKER, SAMUEL L.**, Lecturer in Psychology and Philosophy.
B.A., Montana State University, 1947; M.A., Northwestern University, 1950; Ph.D., 1952.
- BULL, CECIL**, Cataloger (Assistant Professor).
B.A., Brown University, 1935; B.A.L.S., University of Michigan, 1947.
- BURGESS, ROBERT M.**, Acting Chairman, Department of Foreign Languages; Assistant Professor of Foreign Languages.
B.A., Bridgewater College, 1928; M.A., University of Virginia, 1936; Ph.D., University of California, 1951.
- BURNS, JOHN M.**, Assistant in Air Science and Tactics.
Master Sergeant, U. S. Air Force.
- CALL, TRACEY G.**, Associate Professor of Pharmacognosy.
B.S., University of Idaho, Southern Branch, 1940; M.S., University of Maryland, 1944; B.A., Brigham Young University, 1947.
- CAMPBELL, KATHLEEN R.**, Librarian (Professor).
B.S., University of Denver, 1934; M.S., 1939.
- CARLETON, LINUS J.**, Acting Dean, School of Education; Professor of Education.
B.A., Intermountain Union College, 1925; M.Ed., Montana State University, 1940. (On leave of absence Autumn and Winter Quarters, 1952-53.)
- CARPENTER, NAN C.**, Assistant Professor of English.
B.Mus., Hollins College, 1934; M.A., University of North Carolina, 1941; M.A., Yale University, 1945; Ph.D., 1948.
- CARROLL, JAMES W.**, Instructor in Sociology and Anthropology.
B.A., University of Kansas City, 1946; M.A., University of Florida, 1947. (On leave of absence, 1952-53.)
- CARSON, HERBERT M.**, Assistant Professor of English (in Speech).
B.A., University of Illinois, 1938; M.A., State University of Iowa, 1950.
- CASTLE, GORDON B.**, Dean of the Graduate School; Director of the Biological Station; Professor of Zoology.
B.A., Wabash College, 1928; M.A., University of California, 1930; Ph.D., 1934. (Title effective September 1, 1952.)
- CHADWICK, PERN.** Assistant in Military Science and Tactics.
Sergeant First Class, U. S. Army. (Appointed January 3, 1953.)
- CHAMBERLIN, EUGENE K.**, Assistant Professor of History and Political Science.
B.A., University of California, 1939; M.A., 1940; Ph.D., 1949.
- CHAPMAN, JOHN A.**, Instructor in Zoology.
B.A., College of Wooster, 1940; M.A., Wesleyan University (Connecticut), 1942; Ph.D., University of California, 1949.
- CHATLAND, HAROLD**, Chairman, Department of Mathematics; Professor of Mathematics.
B.A., McMaster University, 1934; M.S., University of Chicago, 1935; Ph.D., 1937. (Title effective September 1, 1952.)
- CHEATUM, E. L.**, Associate Professor of Zoology; Leader of the Montana Cooperative Wildlife Research Unit.
B.A., Southern Methodist University, 1934; M.S., University of Michigan, 1935; Ph.D., 1948. (Resigned September 11, 1952.)
- CHESSIN, MEYER**, Instructor in Botany.
B.S., University of California, 1941; Ph.D., 1950.

- CHILDEARS, LUCILLE, Assistant Reference Librarian (Instructor).
B.A., Ottawa University, 1939; B.S.L.S., University of Denver, 1940;
M.A., 1949.
- CHINSKE, EDWARD S., Assistant Professor of Health and Physical Education; Head Football Coach.
B.A., Montana State University, 1930.
- CHUMRAU, PAUL J., Director of Placement Bureau (Also Business Manager, Athletics, effective January 1, 1953).
B.A., Montana State University, 1939.
- CLAPP, MARY B. (Mrs.), Assistant Professor of English.
B.A., University of North Dakota, 1903; M.A., 1906.
- CLARK, FAY G., Professor of Forestry.
B.A., University of Michigan, 1912; M.S.F., 1914.
- CLARK, HOMER H., Assistant Professor of Law.
B.A., Amherst College, 1939; LL.B., Harvard University, 1942; LL.M., 1952.
- CLARK, WESLEY P., Professor Emeritus of Classical Languages; Dean Emeritus of Graduate School.
B.A., University of Richmond, 1903; M.A., 1904; Ph.D., University of Chicago, 1928.
- CLARKE, S. KENDRICK, Manager, Residence Halls.
B.A., Montana State University, 1926.
- CLOW, MAURINE, Associate Dean of Students; Professor of Psychology and Philosophy.
B.A., Stanford University, 1934; M.A., 1936; Ph.D., 1946.
- COAD, FRANCIS E., Associate Professor of Law.
B.A., University of Oregon, 1929; J.D., 1931; LL.M., Columbia University, 1932. (Deceased September 20, 1952.)
- COGSWELL, ANDREW C., Director, Division of Public Service; Professor of Journalism.
B.A., Montana State University, 1927; M.A., University of Minnesota, 1943.
- COLDIRON, WILLIAM H., Assistant Professor of Law.
B.A., Morehead (Kentucky) State College, 1938; LL.B., University of Kentucky, 1947.
- COLE, LOIS D. (Mrs.), Instructor in Music.
B.Mus., Montana State University, 1943.
- COLEMAN, RUFUS A., Professor of English.
B.A., Whitman College, 1909; M.A., Columbia University, 1914; Ph.D., Boston University, 1938.
- COLVILL, FRANCES L. (Mrs.), Instructor in Business Administration.
B.A., Montana State University, 1929.
- COONEY, ROBERT F., Research Associate, Forest and Conservation Experiment Station.
B.S.F., Montana State University, 1932.
- COSTELLO, DANIEL J., Assistant in Military Science and Tactics.
Master Sergeant, U. S. Army. (Transferred September 4, 1952.)
- CRAFT, GEORGE A., Instructor in Mathematics.
B.S., Miami University (Ohio), 1939; M.A., Indiana University, 1950.
- CRAIGHEAD, JOHN J., Assistant Professor of Zoology; Leader of the Montana Cooperative Wildlife Research Unit.
B.A., Pennsylvania State College, 1939; M.S., University of Michigan, 1940; Ph.D., 1950. (Appointed November 24, 1952.)
- CROSS, GEORGE W., Instructor in Health and Physical Education.
B.S., Indiana University, 1951.
- CUNNINGHAM, FRED C., Assistant to Director of Athletics.
B.A., Montana State University, 1949. (Resigned December 31, 1952.)
- DAHLBERG, GEORGE P., Associate Professor of Health and Physical Education; Basketball Coach; Assistant Football Coach.
B.A., Montana State University, 1925.

- DAVIS, ARTHUR E., Assistant in Mathematics.
B.A., Montana State University, 1952. (On staff Winter and Spring Quarters, 1952-53.)
- DEGREENE, KENYON B., Instructor in Psychology and Philosophy.
B.A., University of California at Los Angeles, 1946; M.A., 1949; Ph.D., 1953. (Appointed February 1, 1953.)
- DELAND, MARY F. (Mrs.), Assistant Cataloger (Instructor).
B.A., University of Wyoming, 1932; B.S.L.S., University of Washington, 1933.
- DEMARIS, E. JOE, Assistant Professor of Business Administration.
B.A., Whitman College, 1942; C.P.A., Washington, 1946; M.A., Montana State University, 1949.
- DEW, JAMES E., Assistant Professor of Fine Arts.
B.A., Oberlin College, 1946; M.A., 1947.
- DEW, JANE (Mrs.), Assistant Professor of Health and Physical Education.
B.Ed., University of California at Los Angeles, 1935; M.A., University of Oregon, 1937.
- DIETERT, REUBEN A., Professor of Botany.
B.A., DePauw University, 1925; M.S., Michigan State College, 1927; Ph.D., State University of Iowa, 1937.
- DUGAN, EDWARD B., Professor of Journalism.
B.J., University of Missouri, 1932; M.A., 1940.
- DURKEE, L. LELAND, Assistant Professor of German.
B.S., University of Massachusetts, 1926; M.A., Columbia University, 1934. (Deceased March 29, 1953.)
- DWYER, EDWIN O., Instructor in Business Administration.
B.A., North Dakota State Teachers College, 1939; M.B.A., University of California at Los Angeles, 1947; C.P.A., Montana, 1952.
- DWYER, ROBERT J., Instructor in Sociology and Anthropology.
B.S., University of Idaho, 1942; M.A., 1947.
- EKLUND, CARL M., Lecturer in Virology.
B.A., University of Minnesota, 1925; M.D., 1932.
- ELROD, MORTON J., Professor Emeritus of Biology.
B.A., Simpson College, 1887; M.A., 1890; M.S., 1902; Ph.D., Illinois Wesleyan University, 1905; LL.D. (Honorary), Montana State University, 1938. (Deceased January 18, 1953.)
- ELY, ROY J. W., Chairman, Department of Economics; Professor of Economics.
B.S. in B.A., University of Nebraska, 1924; M.A., 1925; Ph.D., 1937.
- EMBLER, DONALD J., Professor of Business Administration.
B.A., Ohio University, 1932; M.B.A., University of Pennsylvania, 1935; Ph.D., Columbia University, 1944; C.P.A., Montana, 1950.
- ENGBERG, ROBERT W., Instructor in Military Science and Tactics.
First Lieutenant, U. S. Army.
- EPHRON, MARGUERITE II. (Mrs.), Assistant Professor of Latin and Humanities.
B.A., Montana State University, 1931; M.A., 1932.
- ESLYN, WALLACE E., Research Fellow in Forest and Conservation Experiment Station.
B.S., Montana State University, 1950.
- FEDER, WILLIAM S., Assistant in Air Science and Tactics.
Technical Sergeant, U. S. Air Force.
- FERGUSON, MARY ELROD (Mrs.), Assistant Director, Museum and Northwest Historical Collection (Assistant Professor).
B.S., Montana State University, 1911; M.A., Columbia University, 1934.
- FERNETTE, WINSOR, Visiting Instructor in Forestry.
B.S.F., Montana State University, 1949. (On staff Spring Quarter, 1953.)
- FIEDLER, LESLIE A., Associate Professor of English (in Humanities).
B.A., New York University, 1938; M.A., University of Wisconsin, 1939; Ph.D., 1941. (Leave of absence, 1952-53.)

- FORD, JAMES L. C., Dean, School of Journalism; Professor of Journalism.
B.A., Lawrence College, 1928; M.A., University of Wisconsin, 1939; Ph.D.,
University of Minnesota, 1948.
- FOSMIRE, FREDERICK R., Instructor in Psychology and Philosophy.
B.A., University of Texas, 1948; M.A., 1949; Ph.D., 1952.
- FREEMAN, EDMUND L., Professor of English.
B.A., Missouri Wesleyan College, 1915; M.A., Northwestern University,
1924.
- FRITZ, EDMUND T., Instructor in Business Administration.
B.A., Montana State University, 1930; LL.B., 1930.
- FROST, BENJAMIN R., Assistant Professor of Education.
B.S., University of North Dakota, 1933; M.A., University of Minnesota,
1940.
- FROST, EDWIN C., Associate Professor of Air Science and Tactics.
Major, U. S. Air Force.
- GARLINGTON, J. C., Assistant Professor of Law.
B.A., Montana State University, 1930; LL.B., 1930.
- GARN, PHIL R., Assistant Professor of Military Science and Tactics.
Captain, U. S. Army.
- GEDICKIAN, HASMIG G., Assistant Professor of Music.
B.Mus., Shenandoah Conservatory of Music, 1943; M.Mus., Northwestern
University, 1946.
- GILBERT, VEDDER M., Assistant Professor of English.
B.A., Union College, 1936; M.A., Cornell University, 1938; Ph.D., 1952.
- GLEASON, HELEN, Chairman, Department of Home Economics; Professor
of Home Economics.
B.S., Teachers College, Columbia University, 1922; M.A., Columbia Uni-
versity, 1927.
- GLOCKZIN, ALBERT R., Instructor in Geology.
B.S., St. Norbert College, 1939; M.S., Louisiana State University, 1942.
- GORDON, INA C. (Mrs.), Head Resident Emeritus, Corbin Hall.
- GRAY, J. JUSTIN, Assistant Professor of Music.
B.Mus., University of Michigan, 1942; M.Mus., Eastman School of Music,
1946.
- GRIMES, WILMA H. (Mrs.), Instructor in English.
B.A., University of Wisconsin, 1928; M.A., Northwestern University, 1947.
- GUYOR, EDITH L., Circulation Librarian (Instructor).
B.S., University of Minnesota, 1929; M.A., 1936; B.S.L.S., 1949.
- HAMILTON, GEORGE S., Assistant in Military Science and Tactics.
Master Sergeant, U. S. Army. (Transferred January 20, 1953.)
- HAMILTON, STANLEY K., Assistant Professor of English.
B.A., State University of Iowa, 1941; M.A., 1948; Ph.D., University of
Utah, 1951.
- HAMMEN, OSCAR J., Associate Professor of History and Political Science.
B.A., Northwestern College, 1929; B.A., University of Wisconsin, 1930;
Ph.D., 1941.
- HANSEN, BERT B., Professor of English.
B.A., University of South Dakota, 1922; M.A., University of Washington,
1929.
- HANSEN, MILTON C., Assistant in Military Science and Tactics.
Master Sergeant, Infantry, U. S. Army. (Transferred May 20, 1953.)
- HARRIS, JOHN A., Chairman, Department of Social Work; Associate Pro-
fessor of Social Work.
B.A., Pennsylvania State College, 1932; M.S., New York School of Social
Work, 1949.
- HARVEY, LEROY H., Assistant Professor of Botany.
B.S., Western Michigan College of Education, 1936; M.S., University of
Michigan, 1946; Ph.D., 1948.
- HELBING, ALBERT T., Professor of Business Administration.
Ph.B., Denison University, 1923; Ph.D., The Johns Hopkins University,
1929.

- HENNINGSEN, FRED A.**, Acting Assistant Professor of Business Administration.
B.A., Montana State University, 1946; M.A., 1948; C.P.A., Montana, 1948.
- HERINGMAN, BERNARD**, Instructor in English.
B.A., The Johns Hopkins University, 1944; M.A., Columbia University, 1948.
- HERTLER, CHARLES F.**, Chairman, Department of Health and Physical Education; Associate Professor of Health and Physical Education.
B.P.E., Indianapolis Normal College, 1932; M.A., Teachers College, Columbia University, 1936; B.S. in Education, Indiana University, 1942.
- HETLER, DONALD M.**, Chairman, Department of Bacteriology and Hygiene; Professor of Bacteriology.
B.A., University of Kansas, 1918; M.A., 1923; Ph.D., Yale University, 1926.
- HINZE, LEROY W.**, Assistant Professor of English (in Dramatics).
B.A., University of Wisconsin, 1944; M.A., Cornell University, 1947. (Leave of absence, 1952-53.)
- HOFFMAN, RUDOLPH O.**, Professor of French.
Ph.C., State University, Ghent, Belgium, 1910; M.A., University of Wisconsin, 1921; Diplome Supérieur d'Etudes de Civilization Française (Université de Paris), 1929.
- HOFLICH, HAROLD J.**, Director, Bureau of Business and Economic Research; Professor of Business Administration.
B.A., University of Oregon, 1925; Ph.D., University of California, 1933.
- HONKALA, FRED S.**, Assistant Professor of Geology.
B.S., University of New Hampshire, 1940; M.A., University of Missouri, 1942; Ph.D., University of Michigan, 1949.
- HOWARD, JOSEPH W.**, Professor of Chemistry.
B.A., Shurtleff College, 1912; M.A., University of Illinois, 1913; Ph.D., 1915.
- HOYER, BILL H.**, Lecturer in Bacteriology.
B.S., University of Washington, 1943; M.S., 1945; Ph.D., University of Minnesota, 1948.
- HUBBARD, CLYDE W.**, Director of Athletics.
Ph.G., Oregon State College, 1917; B.S., 1921. (Resigned December 31, 1952.)
- HUCKO, JEANNE (Mrs.)**, Dietitian, Residence Halls.
B.A., Montana State University, 1949.
- HUMMEL, J. GEORGE**, Instructor in Music.
B.S., Juilliard School of Music, 1949; M.A., Columbia University, 1950.
- HUNTER, LARRY C.**, Assistant in Mathematics.
B.A., Montana State University, 1952.
- JEFFERS, EDMUND E.**, Assistant Professor of Bacteriology and Hygiene.
B.A., Luther College, 1934; M.S.P.H., University of Michigan, 1940.
- JEPPESEN, C. RULON**, Professor of Physics.
B.A., Brigham Young University, 1928; M.A., University of California, 1930; Ph.D., 1932.
- JESSE, RICHARD H.**, Vice President; Chairman, Department of Chemistry; Professor of Chemistry.
B.A., University of Missouri, 1902; M.A., Harvard University, 1907; Ph.D., 1909.
- JOHNSON, DOROTHY M.**, Assistant Professor of Journalism.
B.A., Montana State University, 1928. (On staff Spring Quarter, 1953.)
- JOLY, COLETTE**, Assistant in Foreign Languages.
B.A., Montana State University, 1952. (On staff Winter and Spring Quarters, 1952-53.)
- JUDAY, RICHARD E.**, Assistant Professor of Chemistry.
B.A., Harvard University, 1939; Ph.D., University of Wisconsin, 1943.
- KARLIN, JULES A.**, Assistant Professor of History and Political Science.
B.S., Georgetown University, 1936; M.A., University of North Carolina, 1937; Ph.D., University of Minnesota, 1940.
- KELLNER, EDWIN G.**, Instructor in Psychology and Philosophy.
B.A., Texas Christian University, 1942; M.A., Montana State University, 1948.

- KNAPP, HENRY W.**, Assistant Professor of Education.
B.A., State Teachers College (Valley City, North Dakota), 1939; M.Ed., Montana State University, 1947.
- KNUDSEN, SVERRE J.**, Visiting Instructor in Education.
B.A., Montana State University, 1938; M.Ed., 1949. (On staff Autumn and Winter Quarters, 1952-53.)
- KOEHLER, GEORGE H.**, Associate Professor of Air Science and Tactics.
Major, U. S. Air Force; B.A., Willamette University, 1933.
- KRAMER, JOSEPH**, Associate Professor of Botany.
B.S., University of Nebraska, 1921; M.A., 1923; Ph.D., 1936.
- KRIER, JESSICA (Mrs.)**, Instructor in Home Economics.
B.S., University of Connecticut, 1949; M.A., Yale University, 1951.
- KRIER, JOHN P.**, Assistant Professor of Forestry.
B.S., University of Idaho, 1947; M.S., 1948; Ph.D., Yale University, 1951.
- KROEKER, HERBERT R.**, Assistant Professor of Economics.
B.A., Bethel College, 1938; M.A., University of Kansas, 1942; Ph.D., University of Nebraska, 1952.
- KROEKER, LILLIAN M. (Mrs.)**, Kindergarten Teacher.
B.S., McPherson College, 1939.
- LACKMAN, DAVID B.**, Lecturer in Immunology.
B.S., University of Connecticut, 1933; Ph.D., University of Pennsylvania, 1937.
- LAMLEY, ROBERT**, Research Fellow, Forest and Conservation Experiment Station.
B.S., Montana State University, 1952. (Resigned March 20, 1953.)
- LAROM, HENRY V.**, Instructor in English; Director, Northern Rocky Mountain Regional Arts Roundup.
B.A., Montana State University, 1932; M.A., 1951.
- LEAPHART, CHARLES W.**, Dean, School of Law; Professor of Law.
B.A., University of Missouri, 1905; M.A., 1906; LL.B., Harvard University, 1913; S.J.D., 1929.
- LEMMON, DONALD**, Assistant in Military Science and Tactics.
Master Sergeant, U. S. Army. (Transferred January 20, 1953.)
- LENNON, E. JAMES**, Instructor in English.
B.A., Anderson College, 1949; M.S., University of Wisconsin, 1950; Ph.D., 1952.
- LEONARD, RICHARD G.**, Assistant in Air Science and Tactics.
Master Sergeant, U. S. Air Force.
- LESTER, JOHN**, Professor of Music.
B.A., B.Mus., Southwestern University (Texas), 1922; Studied in Nice, France, 1923-26; Milan, Italy, 1927-30.
- LIEDING, CALVIN A.**, Assistant in Forestry; Research Fellow, Forest and Conservation Experiment Station.
B.S., Montana State University, 1951.
- LINE, ROBERT C.**, Professor of Business Administration.
B.A., Montana State University, 1910; M.A., Harvard University, 1912.
- LOHN, SHERMAN V.**, Instructor in Law.
B.A., Montana State University, 1946; LL.B., 1947; LL.M., Harvard University, 1949. (On staff Spring Quarter, 1953.)
- LOMMASSON, EMMA B. (Mrs.)**, Assistant Registrar (Instructor).
B.A., Montana State University, 1933; M.A., 1939.
- LORAN, MURIEL R.**, Assistant Professor of Pharmacy.
B.S., Long Island University, 1947; M.S., Philadelphia College of Pharmacy and Science, 1948; Ph.D., Ohio State University, 1951.
- LORY, EARL C.**, Professor of Chemistry.
B.S., Colorado A. & M. College, 1928; Ph.D., Johns Hopkins University, 1932.
- MACARTHUR, ELEANOR**, Assistant Manager of Residence Halls; Assistant Professor of Home Economics.
B.A., Montana State University, 1930.

- MCCAULEY, CLARENCE V.**, Professor of Air Science and Tactics.
Lieutenant Colonel, U. S. Air Force; B.A., University of California at Los Angeles, 1936.
- McFARLAND, CARL**, President and Professor of Law.
B.A., Montana State University, 1928; M.A., 1929; LL.B., 1930; LL.D., 1949 (Honorary); S.J.D., Harvard University, 1932.
- MCGINNIS, RALPH Y.**, Associate Professor of English (in Speech).
B.A., Kent State University, 1932; M.A., Northwestern University, 1938.
- MCLAUGHLIN, KENNETH P.**, Chairman, Department of Geology; Associate Professor of Geology.
B.A., University of Missouri, 1939; M.A., 1941; Ph.D., Louisiana State University, 1947.
- MADDOCK, WILLIAM E.**, Professor Emeritus of Education.
B.L., Earlham College, 1894; B.A., Harvard University, 1904; M.A., Stanford University, 1922.
- MALOUF, CARLING I.**, Assistant Professor of Anthropology.
B.S., University of Utah, 1939; M.S., 1940.
- MANSFIELD, MICHAEL J.**, Assistant Professor of History and Political Science.
B.A., Montana State University, 1933; M.A., 1934. (Leave of absence, 1952-53.)
- MARSAGLIA, GEORGE**, Assistant Professor of Mathematics.
B.S., Colorado A. & M. College, 1946; M.A., Ohio State University, 1948; Ph.D., 1950.
- MARTELL, EARL W.**, Editor of Publications (Instructor).
B.A., Montana State University, 1939.
- MARTINSON, ALVHILD**, Instructor in Business Administration.
B.A., State Teachers College (Minot, North Dakota), 1936; M.Ed., Montana State University, 1950.
- MARVIN, EDWIN L.**, Professor of Psychology and Philosophy.
B.A., Central College (Missouri), 1921; M.A., Harvard University, 1923.
- MASON, DAVID R.**, Professor of Law.
LL.B., University of South Dakota, 1924; B.A., 1926; S.J.D., Harvard University, 1927.
- MAY, CHARLES A.**, Assistant in Air Science and Tactics.
Master Sergeant, U. S. Army.
- MERRIAM, HAROLD G.**, Chairman, Division of Humanities; Chairman, Department of English; Professor of English.
B.A., University of Wyoming, 1905; B.A., Oxford University, England, 1907; M.A., 1912; Ph.D., Columbia University, 1939.
- MERRILL, A. S.**, Dean of the Faculty; Dean of the College of Arts and Sciences; Professor of Mathematics.
B.A., Colgate University, 1911; M.A., 1914; Ph.D., University of Chicago, 1916. (Title effective September 1, 1952.)
- MILBURN, FRANK W.**, Director of Athletics; Freshman Football Coach; Varsity Baseball Coach; Professor of Health and Physical Education.
B.A., United States Military Academy, 1914. (Title effective January 1, 1953. Leave of absence, Winter Quarter, 1953.)
- MILLER, HARRIET E.**, Head Resident, North Hall.
B.A., Whitman College, 1941; M.A., University of Pennsylvania, 1949.
- MILLER, J EARLL**, Chairman, Division of Social Sciences; Chairman, Department of History and Political Science; Professor of History and Political Science.
B.A., University of Kansas, 1910; LL.B., 1912; M.A., University of Illinois, 1914; Ph.D., 1917.
- MIRRELEES, LUCIA B.**, Professor Emeritus of English.
B.A., Stanford University, 1909; Ph.D., 1924.
- MOLLETT, CHARLES E. F.**, Professor Emeritus of Pharmacognosy.
Ph.C., University of Kansas, 1904; B.A., Montana State University, 1920; M.S., University of Kansas, 1927.

- MONTGOMERY, RUBY (Mrs.)**, Instructor in Foreign Languages (part time).
B.A., Montana State University, 1915; M.A., 1935. (Appointed April 1, 1953.)
- MOODY, JOHN L.**, Instructor in Education; Tennis Coach.
B.S., Rocky Mountain College, 1943; M.Ed., Montana State University, 1951.
- MOORE, JOHN E.**, Associate Professor of English.
B.A., University of Michigan, 1936; M.A., 1937. (Leave of absence, 1952-53.)
- MOORE, KENNETH E.**, Instructor in Forestry.
B.S., University of Connecticut, 1934; M.F., Yale University, 1946.
- MORRIS, MELVIN S.**, Professor of Forestry.
B.S., Colorado A. & M. College, 1930; M.S., 1932.
- MURPHEY, GLADYS F. (Mrs.)**, Assistant Head Resident, New Hall.
B.A., Montana State University, 1913.
- MURPHY, CALVIN L.**, Assistant Controller.
B.A., Montana State University, 1949.
- MYERS, VERA T. (Mrs.)**, Statistician and Assistant in Mathematics.
B.A., Bryn Mawr College, 1948; M.A., Ohio State University, 1950.
- MYERS, WILLIAM M. JR.**, Assistant Professor of Mathematics.
B.A., Denison University, 1946; M.A., Ohio State University, 1948; Ph.D., 1952.
- NELSON, RITA M. (Mrs.)**, Assistant Acquisitions Librarian (Instructor).
B.A., Montana State University, 1934.
- OAKLAND, LLOYD C.**, Professor of Music.
B.S. in Mus., Cornell College, 1930; M.Mus., Northwestern University, 1936.
- OLSEN, LAVERNE G. (Mrs.)**, Instructor in Home Economics.
B.S., North Dakota State College, 1942.
- ORMSBEE, RICHARD A.**, Lecturer in Biochemistry.
B.A., Montana State University, 1936; M.S., Washington State College, 1938; Ph.D., Brown University, 1941.
- ORR, JACK E.**, Dean, School of Pharmacy; Professor of Pharmacy.
B.S., Purdue University, 1940; Ph.D., University of Wisconsin, 1943.
- OSTROM, T. G.**, Associate Professor of Mathematics.
B.A., University of Minnesota, 1937; B.S., 1939; M.A., 1939; Ph.D., 1947.
- OSWALD, ROBERT M.**, Instructor in Health and Physical Education.
B.A., Montana State University, 1947.
- PAINTER, DONALD W.**, Associate Professor of Air Science and Tactics.
Major, U. S. Air Force; B.S., Utah State College, 1938.
- PATTEN, O. M.**, Extension Farm Forester and Nurseryman.
B.S., Colorado A. & M. College, 1935.
- PATTERSON, ANN EILEEN**, Acquisitions Librarian (Instructor).
B.A., Northern Michigan College of Education, 1934; B.A.L.S., University of Michigan, 1941; M.A.L.S., 1943.
- PAYNE, THOMAS**, Assistant Professor of History and Political Science.
B.A., Westminster College (Missouri), 1941; M.A., University of Chicago, 1948; Ph.D., 1951.
- PHILLIPS, PAUL C.**, Director, Museum and Northwest Historical Collection; Professor of History and Political Science.
B.A., Indiana University, 1906; M.A., 1909; Ph.D., University of Illinois, 1911.
- PISHKIN, VLADIMIR**, Assistant in Psychology and Philosophy.
B.A., Montana State University, 1951. (On staff Autumn Quarter, 1952.)
- PLATT, ANNE C.**, Professor of Home Economics.
B.S., University of Washington, 1917; M.S., 1928.
- PORTER, ERCIL D.**, Professor of Military Science and Tactics.
Colonel, Infantry, U. S. Army.
- PORTER, MORRIS W.**, Assistant in Air Science and Tactics.
Master Sergeant, U. S. Air Force.

- PRICE, SANFORD G., Associate Professor of Air Science and Tactics.
Major, U. S. Air Force.
- PRINCE, GRADY E., Assistant in Military Science and Tactics.
Sergeant First Class, U. S. Army.
- PRINS, ROBERT F., Instructor in English.
B.A., University of Washington, 1942; M.A., 1948.
- RAMSKILL, BERNICE B. (Mrs.), Associate Professor of Music.
- RAY, CHARLES G., Associate Professor of Military Science and Tactics.
Major, U. S. Army.
- RICHMAN, LUTHER A., Dean, School of Music; Professor of Music.
B.S., Northwest Missouri State Teachers College, 1925; B.Mus., Cincinnati Conservatory of Music, 1928; M.Mus., 1930; D.Mus., (Honorary), 1937; M.A., University of Cincinnati, 1930; D.Ed., 1938.
- RIGGLE, FERDINAND W., Assistant in Military Science and Tactics.
Sergeant First Class, U. S. Army. (Appointed May 28, 1953.)
- RIMEL, VERA S. (Mrs.), Head Resident, New Hall.
- ROBINSON, R. H., Instructor in Business Administration.
B.A., Montana State University, 1940; LL.B., 1948.
- ROSS, DONALD, Instructor in Journalism.
B.A., University of Wisconsin, 1949; M.A., 1952.
- RUSSEL, CHARLOTTE, Law Librarian and Secretary Emeritus.
- RYDELL, O. F., Assistant Professor of Business Administration.
B.S., University of Notre Dame, 1938; C.P.A., Montana, 1948; M.A., Montana State University, 1950.
- SALVIN, SAMUEL B., Lecturer in Mycology.
B.A., Harvard University, 1935; M.Ed., 1937; M.A., 1938; Ph.D., 1941.
- SAPPENFIELD, BERT R., Associate Professor of Psychology and Philosophy.
B.A., DePauw University, 1935; M.A., New York University, 1938; Ph.D., 1941.
- SCHEUCH, FREDERICK C., President Emeritus; Professor Emeritus of Modern Languages.
M.E., Purdue University, 1893; A.C., 1894; LL.D. (Honorary), Montana State University, 1938.
- SCHREIBER, WILLIAM E., Professor Emeritus of Physical Education.
B.A., University of Wisconsin, 1904.
- SCHWARTZ, MORTIMER D., Librarian and Assistant Professor of Law.
LL.B., Boston University, 1949; LL.M., 1950; M.S., Columbia University, 1951.
- SEVERSEN, KERMIT E., Counselor; Instructor in Psychology and Philosophy.
B.Ed., Milwaukee State Teachers College, 1932; Ph.M., University of Wisconsin, 1939.
- SEVERY, J. W., Chairman, Division of Biological Sciences; Chairman, Department of Botany; Professor of Botany.
B.A., Oberlin College, 1915; M.S., Washington University, 1926; Ph.D., University of Wisconsin, 1931.
- SHALLENBERGER, G. D., Chairman, Division of Physical Sciences; Chairman, Department of Physics; Professor of Physics.
B.S., Oklahoma A. & M. College, 1912; B.S., Tulane University of Louisiana, 1917; M.S., 1919; Ph.D., University of Chicago, 1923.
- SHEPARD, CHARLES C., Lecturer in Biophysics.
B.S., Northwestern University, 1936; M.S., 1938; B.M., 1940; M.D., 1941.
- SHIPLEY, ROBERT E., Assistant in Military Science and Tactics.
Sergeant First Class, U. S. Army.
- SHOEMAKER, THEODORE H., Assistant Professor of Spanish.
B.A., Montana State University, 1936; M.A., University of California, 1938; Ph.D., University of Wisconsin, 1941.
- SHORT, JAMES E., Assistant Professor of Education. (Acting Dean, Autumn and Winter Quarters, 1952-53.)
B.Ed., Western Montana College of Education, 1935; M.Ed., University of Washington, 1947; Ed.D., 1949.

- SHUCK, GORDON R., Assistant Professor of Chemistry.
B.S., University of Washington, 1940; M.S., 1942; Ph.D., 1947.
- SMITH, DAVID W., Instructor in History and Political Science.
B.S., University of Utah, 1947; M.A., 1948.
- SMITH, FLORENCE M. (Mrs.), Professor of Organ and Accompanist.
- SMITH, LEO, Registrar; Associate Professor of Education.
B.S., Whitman College, 1927; M.A., University of Washington, 1934.
- SMITH, RUSSELL E., Assistant Professor of Law.
LL.B., Montana State University, 1931.
- SMITH, THEODORE H., Dean, School of Business Administration; Professor of Business Administration.
B.A., Heidelberg College, 1921; M.B.A., Northwestern University, 1926; Ph.D., Ohio State University, 1940.
- SORENSEN, THORA, Associate Professor of Spanish.
B.A., Montana State University, 1927; M.A., 1945; Ph.D., Mexico National University, 1948.
- SOUTHERN, JOHN W., Assistant in Military Science and Tactics.
Master Sergeant, U. S. Army. (Appointed May 28, 1953.)
- SPAULDING, T. C., Professor of Forestry.
B.S., Montana State University, 1906; M.S.F., University of Michigan, 1909.
- SPEER, J. B., Controller; Professor of Business Administration.
B.A., Montana State University, 1908; LL.B., University of Michigan, 1916.
- SPEER, LUCILE E., Documents and Serials Librarian (Associate Professor).
B.A., Montana State University, 1924; M.A., University of Chicago, 1925.
- STAEHLE, JOHN F., Assistant Professor of Education.
B.A., Pacific University, 1941; M.A., University of Oregon, 1947; Ed.D., 1951.
- STANLEY, SYLVIA G. (Mrs.), Head Teacher Nursery School (Instructor).
B.S., Columbia University, 1944.
- STEVENSON, JESSICA L., Instructor in Business Administration.
B.A., Colorado State College of Education, 1923; M.A., Columbia University, 1945.
- STEWART, JOHN M., Associate Professor of Chemistry.
B.A., Montana State University, 1941; Ph.D., University of Illinois, 1944.
- STOODLEY, AGNES L., Associate Professor of Health and Physical Education.
B.A., San Jose State College, 1927; M.S., University of Wisconsin, 1932; Ed.D., Stanford University, 1947.
- STRUCKMAN, ROBERT P., Assistant Professor of Journalism.
B.A., Montana State University, 1933; M.A., 1947.
- SUCHY, JOHN F., Professor of Pharmaceutical Chemistry.
Ph.C., B.S., Montana State University, 1917; M.S., University of Colorado, 1927; Ph.D., 1934.
- SUTTON, ROBERT, Instructor in Music.
B.Mus., University of Alabama, 1948; M.Mus., Eastman School of Music, 1949.
- SWACKHAMER, JOHN W., Assistant Professor of Economics.
B.A., Lafayette College, 1946; M.A., State University of Iowa, 1947; Ph.D., 1949.
- SWEARINGEN, T. G., Maintenance Engineer.
B.A., Montana State University, 1920.
- TASCHER, HAROLD, Associate Professor of Social Work.
B.A., University of Illinois, 1925; M.A., 1926; Ph.D., 1932.
- TAYLOR, NORMAN E., Instructor in Business Administration.
B.A., University of California, 1941; M.B.A., University of Minnesota, 1947.
- TEEL, STANLEY M., Professor of Music.
B.Mus., DePauw University, 1925; M.Ed., Montana State University, 1943.

- THOMAS, BART E., Professor Emeritus of Spanish.
B.S., Wisconsin State Teachers College, 1901; B.A., Montana State University, 1924; Ph.D., University of Wisconsin, 1937.
- THOMPSON, JANE (Mrs.), Head Resident, Corbin Hall.
- THORSRUD, DEANNE (Mrs.), Instructor in Health and Physical Education.
B.A., Montana State University, 1950.
- TOELLE, J. HOWARD, Dixon Professor of Law.
B.A., Indiana University, 1913; LL.B., 1914; M.A., 1916; LL.M., Harvard University, 1925.
- TURNER, ROBERT T., Associate Professor of History and Political Science.
B.A., University of California at Los Angeles, 1933; M.A., 1940; Ph.D., 1945.
- VAN DUSER, CYRILE C., Manager, Montana Student Union (Instructor).
B.A., Montana State University, 1927.
- VOGT, VERNON C., Instructor in Economics.
B.S., University of Wisconsin, 1948; M.S., 1950.
- WALBRIDGE, THOMAS A., JR., Assistant Professor of Forestry.
B.S.F., University of Washington, 1942; M.S.F., Montana State University, 1948.
- WALDRON, ELLIS L., Assistant Professor of History and Political Science.
B.A., Ohio State University, 1936; M.A., University of Wisconsin, 1939; Ph.D., 1953.
- WATERS, CHARLES W., Professor of Forestry and Botany.
B.S., B.L., Berea College, 1919; M.A., Ohio State University, 1921; Ph.D., University of Michigan, 1927.
- WEISBERG, A. HERMAN, Professor Emeritus of Music.
Studied Leipzig Royal Conservatory, Germany, 1901-1903; Paris, 1903-1904.
- WEISBERG, FLORA B. (Mrs.), Assistant Professor Emeritus of German.
B.A., Montana State University, 1928.
- WEISEL, GEORGE F., Assistant Professor of Zoology.
B.A., Montana State University, 1940; M.A., 1942; Ph.D., University of California at Los Angeles, 1949.
- WEISS, DAVID W., JR., Instructor in English (Drama).
B.A., University of Wisconsin, 1950; M.A., 1951.
- WENDT, RUDOLPH, Associate Professor of Music.
B.Mus., Eastman School of Music, 1936; M.Mus., 1946.
- WHITE, M. CATHERINE, Assistant Librarian and Reference Librarian (Associate Professor).
B.A., Montana State University, 1927; M.A., 1940.
- WHITESEL, THEODORE L., Associate Professor of Business Administration.
B.Ed., Eastern Illinois State College, 1931; B.S., University of Illinois, 1932; M.S., 1933; Ph.D., 1952.
- WILLIAMS, ELLA L., Assistant in Museum.
B.A., Pennsylvania State College, 1951. (On staff Winter Quarter, 1953.)
- WILLIAMS, ROSS A., Dean of the School of Forestry; Director of Montana Forest and Conservation Experiment Station; Professor of Forestry.
B.S.F., Montana State University, 1921; M.F., Yale University, 1923.
- WILSON, BRENDA F. (Mrs.), Professor of Business Administration.
B.A., Montana State University, 1932; M.A., University of Southern California, 1939.
- WILSON, VINCENT, Assistant Professor of Health and Physical Education.
B.A., Montana State University, 1943; M.A., New York University, 1947.
- WOLLOCK, ABE, Instructor in English (Drama).
B.A., Brooklyn College, 1947; M.A., Cornell University, 1948. (Leave of absence, 1952-53.)
- WOOD, BRUCE K. (Rev.), Director, Affiliated School of Religion (Assistant Professor).
B.A., Manchester College, 1941; B.D., M.A., Yale University, 1946.

- WOOD, CLARA C. (Rev.), Associate Director, Affiliated School of Religion (Assistant Professor).
B.A., Manchester College, 1940; B.D., Yale University, 1945; M.A., 1946.
- WREN, MELVIN C., Professor of History and Political Science.
B.A., State University of Iowa, 1936; M.A., 1938; Ph.D., 1939.
- WRIGHT, M. P., Director, Health Service (Assistant Professor).
B.S., Ball State Teachers College, 1938; M.B., Chicago Medical School, 1948; M.D., 1949.
- WRIGHT, PHILIP L., Professor of Zoology.
B.S., University of New Hampshire, 1935; M.S., 1937; Ph.D., University of Wisconsin, 1940.
- WUNDERLICH, HERBERT J., Dean of Students; Professor of Education.
B.A., University of Idaho, 1928; M.A., Harvard University, 1933; Ed.D., Stanford University, 1952.
- YATES, LELAND M., Instructor in Chemistry (in charge of storeroom).
B.A., Montana State University, 1938; M.A., 1940.
- ZEGER, JOHN F., Instructor in Health and Physical Education; Assistant Football Coach.
B.A., University of Washington, 1949.
- ZEIGLER, GEORGE T., Assistant Professor of Air Science and Tactics.
Captain, U. S. Air Force; B.S., Montana State University, 1948.
- ZEUTY, EDWARD J., Associate Professor of Air Science and Tactics.
Major, U. S. Air Force.

GRADUATE ASSISTANTS

- BJORKLUND, RICHARD G., Graduate Assistant in Zoology.
B.S., Montana State University, 1951.
- COLE, JAMES H., Graduate Assistant in Music.
B.Mus., Montana State University, 1952.
- CUNNINGHAM, LOUIS J., Graduate Assistant in History and Political Science.
B.A., College of St. Thomas, 1952.
- DEZUR, ROBERT S., Graduate Assistant in Mathematics.
B.A., Montana State University, 1952.
- DUTTON, EARL B., Graduate Assistant in English.
B.A., University of Wisconsin, 1952. (Resigned March 21, 1953.)
- FLESHMAN, DONNA, Graduate Assistant in Modern Languages.
B.A., Montana State University, 1952.
- GROFF, SIDNEY L., Graduate Assistant in Geology.
B.A., Montana State University, 1941.
- HILL, LAWRENCE A., Graduate Assistant in History and Political Science.
B.A., Montana State University, 1952.
- HOLDEN, MARJORIE, Graduate Assistant in Botany.
B.A., Oberlin College, 1950.
- INGLE, NOREEN, Graduate Assistant in Education.
B.A., Montana State University, 1947.
- JACKSON, RONALD B., Graduate Assistant in Education.
B.A., Suffolk University, 1951.
- KOCH, WILLIAM G., Graduate Assistant in Chemistry.
B.A., University of Notre Dame, 1947.
- LEADER, RALPH J., Graduate Assistant in Forestry.
B.S., University of Arizona, 1951.
- LECHLEITNER, ROBERT R., Graduate Assistant in Zoology.
B.S., Montana State University, 1951.
- MILLER, REUBEN G., Graduate Assistant in Economics.
B.A., LaSalle College, 1952.
- PFROMMER, EUGENE R., Graduate Assistant in Sociology.
B.S., Purdue University, 1952.

- RAYMOND, RICHARD G., Graduate Assistant in Bacteriology.
B.A., Montana State University, 1951.
- ROSS, M. EILEEN S. (Mrs.), Graduate Assistant in English.
B.S., Lewis and Clark College, 1951.
- ROSS, ROBERT G., Graduate Assistant in English.
B.A., Lewis and Clark College, 1952.
- STORY, JOEL M., Graduate Assistant in Music.
B.Mus., Montana State University, 1948.
- STRANGE, WILLIAM C., Graduate Assistant in English.
B.A., Whitman College, 1952.
- WARD, JOSEPH T., Graduate Assistant in English.
B.A., University of Notre Dame, 1948.
- WRIGHT, JAMES P., Graduate Assistant in Physics.
B.A., Montana State University, 1950. (Resigned December 31, 1952.)

PARTIAL LIST OF NEW FACULTY APPOINTMENTS FOR 1953-54

- ALEXANDER, MARGARET A., Instructor in Business Administration.
B.S., University of North Dakota, 1937; M.Ed., University of Washington, 1952.
- BONNIN, GUNTHER M., Assistant Professor of Foreign Languages.
B.A., Reed College, 1943; M.A., Stanford University, 1948; Ph.D., 1949.
- BREEN, ROBERT W., Director, Family Housing.
B.A., Montana State University, 1936.
- BUSH, BARBARA JO (Mrs.), Dietitian, Residence Halls.
B.A., Montana State University, 1952.
- BYRNE, ROBERT LEE, Instructor in Health and Physical Education—Athletics.
B.S., Montana State University, 1952.
- COX, GENE S., Assistant Professor of Forestry.
B.S., Duke University, 1947; M.F., 1948; Ph.D., 1953.
- DRUMMOND, DON M., Assistant Professor of Forestry.
B.S.F., Utah State Agricultural College, 1937; M.F., Louisiana State University, 1939.
- FISCHER, ROBERT E., Acquisitions Librarian (Instructor).
B.A., University of Minnesota, 1952; M.S. in L.S., Western Reserve University, 1953.
- FOLSOM, GWENDOLYN B., Research Assistant and Secretary, President's Office.
B.A., George Washington University, 1933; M.A., Catholic University, 1935.
- HASHISAKI, JOSEPH, Assistant Professor of Mathematics.
B.A., Montana State University, 1940; M.A., University of Illinois, 1951; Ph.D., 1953.
- HAYS, SAMUEL H. (Lt. Col.), Professor, Military Science and Tactics.
B.S., United States Military Academy, 1942; M.A., Columbia University, 1950.
- HOLLANDSWORTH, HELEN L., Assistant Professor of Home Economics.
B.S., Montana State College, 1937; M.S., Oregon State College, 1949.
- JAKOBSON, MARK J., Assistant Professor of Physics.
B.A., Montana State University, 1944; M.A., 1947; Ph.D., University of California, 1951.
- KLEMMEDSON, JAMES O., Instructor in Forestry.
B.S.F., University of California, 1950; M.S., Colorado State College, 1953.
- MAZULA, BETTY LOUISE (Mrs.), Assistant in Health and Physical Education.
B.A., Montana State University, 1945; M.A., Columbia University Teachers College, 1946.
- OHANIAN, EDWARD, Instructor in English.
B.A., University of Southern California, 1947; M.A., 1950; Ph.D., 1952.

- ORR, ALICIA SHULAR (Mrs.), Dietitian, Residence Halls.
B.S., Montana State College, 1951.
- RANKIN, FLORENCE O. (Mrs.), Assistant Head Resident, North Hall.
- SHADE, ELWOOD B., Instructor in Forestry.
B.A., Juniata College, 1936; B.S.F., Pennsylvania State College, 1945;
M.F., 1948.
- VOGT, MARY ALICE (Mrs.), Acting Instructor in Foreign Languages.
B.A., University of Omaha, 1945; M.A., University of Wisconsin, 1946.
- WATERBURY, THOMAS L., Assistant Professor of Law.
B.A., University of Michigan, 1948; J.D., University of Michigan Law
School, 1950.
- WEIDMAN, ROBERT M., Instructor in Geology.
B.S., California Institute of Technology, 1944; M.A., Indiana University,
1949.
- WHITE, WALLACE T., Head Resident, Craig Hall.
B.S., University of Illinois, 1949; M.A., 1951.
- WIGHT, RAY W., Assistant Professor of Journalism.
B.A., University of Utah, 1934; M.A., 1947.

SPECIAL APPOINTMENTS FOR SUMMER SESSION, 1952

- ARMACOST, RICHARD R., Visiting Professor of Education.
- BALDWIN, BOYD F., Visiting Instructor in Education.
- BARNES, DORI (Mrs.), Extension Instructor in English.
- BARNES, LARRY, Extension Instructor in English.
- BENNEE, MIRIAM, Visiting Instructor in Education.
- BISHOP, HELEN M., Visiting Professor of Education.
- BROOKS, VAN WYCK, Visiting Lecturer in English.
- CHUBBUCK, R. DANIEL, Visiting Professor of Education.
- CROWN, JOHN R., Visiting Lecturer in Music.
- CURRY, PEGGY S., Visiting Lecturer in English.
- DAVIDSON, DAVID, Visiting Professor of English.
- DAVIS, DAVID E., Visiting Professor at Biological Station.
- DOTY, GERALD H., Visiting Professor of Music.
- EMMERT, W. L., Visiting Instructor in Education.
- FOX, NORMAN A., Visiting Lecturer in English.
- GEBHART, JAMES W., Visiting Professor of Education.
- GIBSON, E. DANA, Visiting Professor of Education and Business Administration.
- GRAY, WAYNE T., Visiting Professor of Sociology and Anthropology.
- HARTSELL, ONNIE M., Visiting Instructor in Music.
- HOLM, JAMES N., Visiting Professor of English.
- HUFFMAN, ELZA, Visiting Instructor in Education.
- HUMMEL, LEE (Mrs.), Director of High School Music Week Camp.
- JOHNSON, DOROTHY M., Visiting Lecturer in English.
- KLINGBEIL, MAX, Visiting Professor of Education.
- LAKE, ERNEST G., Visiting Lecturer in Education.
- LAROM, MARY (Mrs.), Visiting Instructor in Fine Arts.
- LOBAUGH, DEAN, Visiting Lecturer in Education.
- LYON, KATHRYN, Visiting Instructor in Home Economics.
- MCCRERY, LESTER, Visiting Professor of English.
- MANGRAVITE, PEPPINO, Visiting Lecturer in Fine Arts.

- MARCHUS, FLOYD, Visiting Professor of Education.
MATTELL, CHARLES, Visiting Instructor in Education.
MOSER, WILBUR E., Visiting Professor of Education.
NIBLACK, STEPHEN L., Visiting Instructor in Music.
NICHOLSON, LAURA, Visiting Lecturer in Education and Business Administration.
PECK, CLEMEN M., Extension Instructor in English.
PEPE, PHILIP, Visiting Lecturer in Education and Business Administration.
PRESCOTT, GERALD W., Visiting Professor at Biological Station.
REICHELDERFER, PAUL V., Visiting Professor of Mathematics.
ROGENSACK, DELINDA, Visiting Lecturer in Music.
ROSEBERRY, ARTHUR S., Visiting Instructor in Education.
ROWE, JOHN L., Visiting Professor of Education and Business Administration.
SELKE, ERICH, Visiting Lecturer in Education.
STAFFANSON, ROBERT L., Visiting Instructor in Music.
THOMPSON, L. O., Visiting Instructor in Education.
TONE, BEN, Extension Instructor in English.
URLAUB, JOHN, Visiting Instructor in Education.
VACURA, BODLEY, Visiting Instructor in Education.
WATSON, FRANK J., Visiting Professor of Education.
WYLDER, ROBERT C., Visiting Instructor in English.
YERIAN, C. THEODORE, Visiting Lecturer in Education and Business Administration.

STATE BOARD OF EXAMINERS IN ACCOUNTANCY

- ROWLAND, ALFRED J.—C.P.A., Miles City, Chairman.
HAMILTON, MACK—B.A., C.P.A., Great Falls, Secretary.
FINLAY, WILLIAM B., JR.—B.C.S., C.P.A., Great Falls.

MONTANA STATE UNIVERSITY

In 1893 the Third Legislative Assembly of Montana chartered the University of Montana and located it at Missoula. Later legislation called it the State University of Montana. Still later statutes refer to it as Montana State University, by which name it is now generally known.

Missoula is a residential city of approximately 30,000 about 100 miles west of the continental divide on the headwaters of the Columbia river system in west central Montana. Located at an elevation of 3200 feet, it is served by two transcontinental railroads, bus lines operating on the main east-west north-south U.S. highways, and by air.

SUPPORT AND ENDOWMENT

Federal land grants made available during territorial days were allocated to Montana State University on its creation. It continues, however, to receive its main support in the form of biennial legislative appropriations and student fees. It also receives gifts, grants, and endowments for scholarships, teaching, development, and research from private and other sources. The Montana State University Endowment Foundation, among others, is a separately chartered and managed trust which receives, manages, and distributes private contributions for University purposes.

CAMPUS AND PHYSICAL PLANT

The main campus spreads over 125 acres; and there are extensive adjuncts such as the Golf Course (155 acres), Biological Station (160 acres), the Forest Nursery (200 acres), and the Experimental Forest (20,000 acres). The physical plant includes twenty-three brick and masonry buildings, of which five were completed in 1953, as well as numerous other structures for storage and other purposes.

Special instructional facilities also include the Biological Station, 80 miles north of the campus on Flathead Lake with buildings for housing and research; the Forest Nursery and the Experimental Forest near the campus; the Wildlife Research Unit; and the University Press, located in the Journalism building. In addition to the general library there are separate libraries for chemistry, forestry, journalism, law, music, and pharmacy. Special museums and collections include those relating to anthropology, biology, botany, geology, and history.

CONTROL AND ADMINISTRATION

Subject to the Constitution and statutes, general control and supervision of all Montana state institutions of higher education are vested in the eleven-member State Board of Education. There is also a local three-member Executive Board for each institution. The immediate administration of each institution is vested in a president.

By statute the State's combined system of higher education is called "The University of Montana." An executive office and executive secretary are located in the State Capitol at Helena, Montana, mainly for the handling of administrative routine between the institutions and the State Board of Education and other state offices and departments.

The right is reserved to change any of the rules and regulations of the University at any time including those relating to admission, instruction, and graduation. The right to withdraw curricula and specific

courses as well as to impose or increase fees is similarly reserved. All such changes are effective at such times as the proper authorities determine and apply not only to prospective students but also to those who, at such times, are already enrolled in the University.

COURSES OF INSTRUCTION

Fields of instruction at Montana State University are described throughout this catalog. No degrees are offered by the University in fields in which it is not fully accredited.

To a considerable extent Montana policy forbids the duplication of specialized instruction in its state institutions of higher education. Engineering and agriculture are thus taught at Montana State College at Bozeman, Montana, except that Forest Engineering is taught at Montana State University at Missoula and mining and petroleum engineering are offered at the State School of Mines at Butte. Elementary teacher training is conducted at Western Montana College of Education at Dillon, Eastern Montana College of Education at Billings, and Northern Montana College at Havre; but students may take graduate work in this field at Montana State University and they may also utilize undergraduate University credit to secure, upon taking additional work at teachers' colleges, elementary teachers' certificates or degrees.

BIOLOGICAL STATION

The University Biological Station is located at Yellow Bay on the east shore of Flathead Lake, 90 miles north of Missoula. The University controls 160 acres, including four islands and also has permission to carry on investigation on Wild Horse Island which has an area of approximately 2000 acres.

Facilities include an administration-recreation building, a four-room laboratory, three one-room laboratories, a kitchen and dining hall, a bath house and thirty one-room cabins.

During the summer, field courses and research in Botany and Zoology are offered for upper division and graduate students. By virtue of the station's location, there is a great variety of opportunity for research.

For further information, write to the Director, Biological Station, Montana State University.

WILDLIFE RESEARCH UNIT

ASSISTANT PROFESSOR JOHN J. CRAIGHEAD (Leader);
PROFESSORS MELVIN S. MORRIS (Assistant Leader), PHILIP
L. WRIGHT (Assistant Leader).

The Montana Cooperative Wildlife Research Unit was established at Montana State University in 1949. The Unit is controlled, staffed and supported cooperatively by the Montana Fish and Game Commission, the Fish and Wildlife Service of the U. S. Department of Interior, the Wildlife Management Institute of Washington, D. C., and Montana State University.

The purpose of the Cooperative Wildlife Research Unit is stated in the Memorandum of Understanding signed jointly by representatives of the above cooperating agencies as follows: . . . "to provide full active cooperation in the advancement, organization, and operation of wildlife education, research, extension and demonstration programs. . . ."

The Montana Unit through its graduate research fellowship program investigates wildlife problems approved by the Montana Fish and Game Commission in order to make it possible for the Commission to improve management of the wildlife resources for the benefit of the citizens of Montana. At the same time this research work carried on under the supervision of the Unit Leader and University Faculty contributes to the training of graduate students in the fields of Wildlife Management and Wildlife Technology.

Graduate work in wildlife may be taken with the area of concentration either in wildlife management or in wildlife technology. It will ordinarily require two years work beyond the Bachelor's Degree to fulfill the requirement for a degree of Master of Science in Wildlife Technology. Concentration in the area of wildlife management will ordinarily lead to the degree of Master of Science in Forestry or the Master of Forestry degree depending upon the time and curriculum undertaken.

The Cooperative Wildlife Research Unit allocates funds for four or more graduate research fellowships for students working toward the degree of Master of Science in Wildlife Technology, or Master of Science in Forestry with the area of concentration in wildlife management. Candidates for fellowships should submit formal applications with a transcript of college credits and letters of reference by April 1.

For further information with regard to curricula and requirements for graduate work in the wildlife field, write to the Unit Leader, Dean of the School of Forestry, or Chairman of the Department of Zoology.

TYPOGRAPHICAL LABORATORY AND PRESS

The Journalism Typographical Laboratory and University Press serves both as a laboratory operation for instruction in the School of Journalism and to take care of the printing of educational, research, and informational materials of Montana State University.

SUMMER COLLEGE

The Summer Session of ten-weeks is divided into two five-week terms. Students may attend either five-week term or the full ten-week session. The 1954 Summer Session will open June 14 and close August 20; the first five-week term, June 14 to July 16; the second five-week term, July 19 to August 20.

Courses will be offered in all departments and schools except Pharmacy and Forestry, including graduate work as well as undergraduate work.

Special field work in Botany and Zoology is given at the University Biological Station at Flathead Lake. Regular courses in Botany and Zoology are given on the campus.

Three regular Summer Sessions, of ten weeks each, satisfy the residence requirements for the Master's degree.

All courses required for Montana secondary teachers' certificates will be offered. Graduate work will include courses for secondary teachers, elementary teachers, and for the administrator's credentials.

Students in the Summer Session who are not registered as candidates for degrees will, upon request to the Registrar, receive a certified transcript for courses satisfactorily completed.

Full information regarding the Summer Session may be obtained from the Registrar or the Director of the Summer College.

ACCREDITATION

Montana State University is fully accredited by the Northwest Association of Secondary and Higher Schools.

THE LIBRARY

More than 372,747 volumes and government documents are housed in the library building and in departmental libraries.

The library receives 900 periodicals in addition to newspapers and college exchanges, the current numbers of which are available in the reading room.

Any student may obtain "stack permission" for one year by securing the signature of a faculty member and the approval of the librarian. Any reputable person not connected with the University may obtain admittance to the stacks with the signature of the librarian on a pass card.

FINANCIAL OBLIGATIONS

Students who owe bills to the University for fees, fines, board and room in the residence halls, and other charges are not permitted to register for the succeeding quarter, secure transcript of record, or obtain diplomas until the obligation is paid or satisfactorily adjusted. Similar action is taken where students owe bills to student organizations whose books are kept in the business offices of Montana State University, including charges for board and room in fraternity and sorority houses.

STUDENT FEES. The following is a detailed schedule of fees authorized for the college year 1953-54 in all schools and departments except where otherwise specified. Fees are subject to modification by action of the State Board of Education.

ALL STUDENTS REGISTERED FOR SEVEN OR MORE CREDITS:

Registration	\$5.00	} Waived to holders of Montana high school and University honor scholarships.
Incidental (for laboratory supplies in all courses, locker fees, gymnasium towel service, diploma, etc.)	15.00	
Building	5.00	
Student Union Building	4.00	
Student Activity	10.00	} Optional to students who have a B.A. or B.S. degree and to students registered for less than seven credits.
For support of activities sponsored by the Associated Students of Montana State University.		
Health Service	5.00	} Required of all students enrolled for class work.
	<hr/> \$44.00	
General deposit (charges for loss, breakage, and fines deducted)	10.00	} Paid once each year and unused portion refunded.
	<hr/> \$54.00	
Total, first quarter in attendance	\$54.00	
Majors in School of Music pay an additional fee (per quarter)	\$20.00	
Non-residents (out-of-state) pay additional (per quarter)	\$50.00	} If registered for less than seven credits, \$4.00 per credit with minimum of \$8.00 per quarter.

Students who have not resided in the State of Montana for at least 12 months immediately prior to entering Montana State University and whose parents are not residents of the state are required to pay the non-resident fee (autumn, winter, spring quarters). For detailed statement of student entitled to exemption from this fee write to the Registrar.

WAR SERVICE FEE EXEMPTIONS. The registration and incidental fees are waived for honorably discharged persons who served with the United States armed forces in any of its wars and who were bona fide residents of Montana at the time of their entry into the armed forces. This is in accordance with an act of the Legislature of 1943 as amended by the Legislature of 1945. These exemptions are not available to students who are eligible to qualify for benefits under Federal Laws.

LIMITED REGISTRANTS (students registered for less than seven credits) : Registration Fee \$5.00; Incidental Fee \$7.50; General Deposit \$5.00; Building Fee \$2.50; Student Union Building \$2.00; Health Service \$5.00; Student Activity \$10.00 (optional). *Non-residents pay \$4.00 per credit with minimum of \$8.00.* "Listeners" (students who enroll for courses without credit) pay the same fees as students enrolled for less than seven credits.

SPECIAL ATTENDANCE FEE, payable by adults not in regular attendance the preceding quarter, and who are not registered for credit and do not participate in class work. Each course (per quarter), \$2.00.

GRADUATE STUDENTS pay the same fees as undergraduate students except that graduate students whose program requires expensive equipment, laboratory supplies and additional books may be required to pay a graduate laboratory-incidental fee not to exceed \$25.00 per quarter. The student activity fee is optional to students who have a B.S. or B.A. degree.

FEES FOR SPECIAL PURPOSES :

LATE REGISTRATION, payable Winter and Spring quarters by students in attendance Autumn or Winter, respectively, who have not registered during the designated period for registration of former students, \$2.00.

LATE PAYMENT, payable by students who pay their fees after the prescribed final day for payment of any quarter: for each college day, \$1.00, not exceeding a total of \$5.00 (not charged students registered for less than seven credits).

CHANGE OF ENROLLMENT, payable for each change of enrollment card filed after the first week of the quarter, \$1.00; after the second week, \$2.00.

SPECIAL EXAMINATION, for each special examination, \$2.00; maximum, \$5.00 for any one quarter.

REMOVAL OF INCOMPLETES (not due to illness or fault of institution) \$2.00.

TRANSCRIPT OF RECORD (first transcript is free) \$1.00. Transcripts ordered at one time in quantities are charged for at the rate of \$1.00 for one plus 50¢ each for all additional.

Certain departments require field trips the cost of which is a personal expense prorated among the students in the course. Check the department involved in such courses.

Fees for correspondence study are listed in the Correspondence Study Catalog. Fees for summer college are listed in the Summer College Bulletin and for the Biological Station in the Biological Station Bulletin.

REFUNDS. All fees are refunded to students who withdraw during the period of registration and before the beginning of classes, in which registration is cancelled. No refunds of above fees are made after the fourth week of instruction (except Music).

Refunds are calculated from date of application for refund and not from date of last attendance at classes except in cases of illness or other unavoidable causes. No refunds are made if application for refund is delayed beyond close of quarter for which the fees were charged.

	WEEK OF INSTRUCTION			
	FIRST	SECOND	THIRD	FOURTH
Registration (\$5.00)	None	None	None	None
Incidental (\$15.00)	75%	50%	50%	None
Building (\$5.00)	100%	50%	50%	None
Student Union Building (\$4.00).....	None	None	None	None
Student Activity (\$10.00)	100%	50%	50%	None
Health Service (\$5.00)	100%	50%	50%	None
(No refunds if medical service furnished or physical examinations taken.)				
Non-Resident Tuition (\$50.00)	80%	60%	40%	20%
School of Music Majors (\$20.00).....	Refund based on charge of \$1.75 per lesson for the number of weeks elapsed since the beginning of the quarter.			

PAYMENT OF FEES by check in exact amount of bill is preferable. The University does not accept non-bankable paper in payment of bills. Personal checks are not cashed except in payment of University bills.

RAILWAY FARE REFUND. In accordance with the provisions of Chapter 41 of the Session Laws of 1925, enacted by the Nineteenth Legislative Assembly, and under regulations established by the State Board of Education, railroad fare in excess of fifteen dollars actually paid by any student for a round trip by the most direct route available between his Montana home and Montana State University once each year, will be refunded. The amount of the refund will be based upon the railroad or bus fare over the shortest route and at the lowest rate. Students must present receipts for the fare thus paid.

In order to be entitled to the refund students must carry satisfactorily a normal amount of work, and must be in attendance either throughout the college year or through the summer quarter.

Claims for refunds must be presented within thirty days after the close of the term in which the student was last in attendance.

REQUIREMENTS FOR ADMISSION

Applications for admission should be sent to the *Registrar, Montana State University, Missoula, Montana*, on a form which may be obtained from the high school principal or by writing to the Registrar at the University. If possible, applications for admission should be sent in at least a month before registration. *The following credentials are required: (a) Completed application and high school transcript on forms provided by Montana State University. (b) Official transcript from each college attended, including institutions attended while in military service, carrying a statement of honorable dismissal from the last college attended.*

GENERAL ADMISSION. Applicants for admission must be of good moral character. Veterans of any branch of the United States Armed Forces should present a discharge marked other than "dishonorable."

Graduates of any fully accredited high school or academy are admitted to regular standing. The completion of a high school or preparatory course of four years, including three years of English and one year of American history and government, is the standard for regular admission.

Students transferring from other colleges will be required to meet these requirements.

HIGH SCHOOL PREPARATION. Although general admission to the University is granted as indicated above, additional units of high school work are needed for certain professional curricula. High school courses should be chosen to meet requirements for the curriculum selected, otherwise, additional time may be required in college. The student should check the curriculum of his choice and take in high school those courses listed as "needed" where such courses are indicated under "High School Preparation." The "recommended courses" under "High School Preparation" would be helpful, but no loss of time would be involved if the student did not take them in high school.

ADMISSION BY EXAMINATION. Any person not a graduate of an accredited high school may meet regular admission requirements by passing examinations on not less than fifteen units of secondary school work. These examinations must cover the specifically required courses in English and American history and government. Credit is allowed the student for any courses taken in an accredited high school; thus the examinations need only cover those units of work lacking for general admission.

CONDITIONAL ADMISSION. A person who has attended an accredited high school for four years, but lacks one course for graduation therefrom other than the required courses in English and American history and government, will be admitted on condition that the deficiency is made up within a year.

ADMISSION BY TRANSFER FROM OTHER COLLEGES AND UNIVERSITIES. A student who has attended another institution of higher education of recognized standing will be admitted to Montana State University upon presentation of a statement from the registrar of the former college or university showing that the student has met regular entrance requirements and is eligible to return to that school or showing that his record is such as would assure his admission to, or reinstatement at, this University had he previously been one of its students. Graduates of approved two-year normal and junior colleges are regularly admitted to junior standing at Montana State University. Credits earned at Montana State College, Montana School of Mines, Northern Montana College, Eastern Montana College of Education, and Western Montana College of Education may be transferred to the University. However, a number of highly specialized curricula are offered at these units of the University of Montana; consequently a student who changes his objective either while continuing in an institution or in changing from one institution to another must expect to lose time thereby. Excess credits earned in completing a two-year course of junior college rank may not be used to decrease the two years usually required to complete senior college work at Montana State University.

ADMISSION AS SPECIAL STUDENTS. Persons 21 years of age or over who are not graduates of high schools, who cannot offer all the requirements for admission, and who are not candidates for degrees may be admitted as special students upon passing general aptitude and English placement tests and the submission of satisfactory evidence that they are prepared to pursue successfully the courses they desire. Such special students may acquire status as regular students and become can-

didates for degrees either (a) by taking entrance examinations or (b) by transferring to entrance credit sufficient credits earned in the University to make up all entrance requirements for admission to regular standing. A special student may not register for his seventh quarter of residence, including summer sessions, until all entrance units required for admission to regular standing are made up.

UNCLASSIFIED STUDENTS. Students permitted to select their subjects without reference to the requirements of any prescribed course of study may register as unclassified students.

REGISTRATION AND GENERAL REGULATIONS

Time for registration is set aside during Orientation week. One day at the beginning of other quarters is also used for this purpose. A student's registration is subject to the approval of an appointed faculty adviser until choice of major field of study has been made; after this choice, the head (or his delegate) of the department or school in which the curriculum is offered becomes the adviser.

ORIENTATION WEEK. The first week of autumn quarter is set aside for the orientation and registration of new students. The program includes: (1) Acquainting the student with the campus, the classroom buildings, and residence halls. (2) Explaining the University program in detail—the types of instruction offered and the careers for which a student may prepare at the University. (3) A physical examination. (4) Various tests to help the student determine University aptitudes and the courses in which he or she will learn most effectively. (5) Social gatherings at which students may become acquainted with fellow classmates, students of other classes, and members of the faculty. (6) Official registration in the University, with the assistance of a member of the faculty in the selection of courses.

REQUIRED COURSES. Regular students must so arrange their studies, quarter by quarter, that they will normally complete all required courses and group requirements by the end of their third year at the University except in their fields of specialization.

MAXIMUM CREDIT LOAD. Except for students registered in an approved curriculum, the maximum credit load per quarter is as follows: (1) For Freshmen, fifteen credits plus physical education and ROTC as required; (2) For Sophomores, sixteen credits plus physical education and ROTC as required; (3) Juniors and Seniors may register for sixteen credits except that students with approximately B average grades may be permitted by their advisers to register for eighteen credits.

In addition to these allowed numbers of credits per quarter, freshmen may take two additional credits and sophomores one additional credit selected from applied or ensemble music, applied acting and stagecraft, current events and imaginative writing. The student must maintain a C average during the previous quarter in residence in order to be permitted to carry these added credits. Pre-college courses in English Composition or Mathematics which carry no credit, count toward the maximum load according to the number of class hours per week.

CHANGES OF ENROLLMENT. Applications for changes in enrollment must be made by the student on proper forms and filed at the Registrar's Office.

WITHDRAWAL FROM A COURSE. (1) During the first four weeks of a quarter, a student may withdraw from a course in which he has registered with the consent of his adviser, the instructor concerned and the chairman of the department or school in which the student is majoring. A "W" (withdrawal) will be assigned. (2) During the

period from the fourth through the sixth week, the student must secure consent as in (1) above and also secure consent of the chairman of the Board of Advisers. In these cases the instructor must indicate whether the student is passing or failing. If the student is passing a "W" will be assigned; if failing a grade of F will be assigned unless changed for due cause by joint action of the instructor involved, the adviser and the chairman of the Board of Advisers. (3) During the period from the sixth through the ninth week of the quarter a student withdrawing from a course receives a grade of F unless changed for due cause by joint action of the instructor involved, the adviser and the chairman of the Board of Advisers. (4) After the ninth week the student who withdraws receives a grade, usually incomplete. (5) All withdrawals must be formal and must be recorded by the student with the Registrar on proper forms secured from the registrar's office.

WITHDRAWALS FROM THE UNIVERSITY. Students who withdraw from the University during a quarter are required to fill out withdrawal forms in the Registrar's Office. If this is not done the student will not be entitled to certification of honorable dismissal. When withdrawal forms signed by the Dean or Associate Dean of Students are filed before the end of the ninth week of a quarter, grades of "W" are assigned. After the ninth week, the student who withdraws receives a grade, usually incomplete.

REPETITION OF COURSE. When a course in which a student has previously received credit is repeated with proper authorization, the credit and the first grade received are automatically cancelled and the credit and second grade are recorded, even if the second grade is lower. In order to obtain authorization to repeat a course, the student must file with the registrar at the time of registration a petition carrying approval of the adviser, the chairman of the department in which the student is majoring and of the chairman of the department in which the course is given.

INDEPENDENT WORK. Credit is allowed superior students of junior and senior standing for independent work in topics or problems chosen by themselves with the approval of the departments concerned and with the supervision of instructors. Such work must be registered for at the beginning of a quarter. The student cannot obtain a larger number of credits than he is registered for, but a smaller number may be completed and credit obtained with the instructor's approval.

VETERAN REGISTRATION. Veterans' subsistence payments from the Veteran's Administration are based on the number of hours of work for which the student is registered. A minimum of 12 credit hours is required for full subsistence under the veterans' bills for the second world war. A minimum of 14 credit hours is required for full payment under the Korean G. I. Bills.

DEGREES OFFERED

Bachelor's and Master's degrees are offered at Montana State University. More details about degrees offered and the requirements for degrees are to be found in the section of the catalog dealing with the Graduate School and also under the various alphabetically listed curricula.

GRADING SYSTEM

The class work of the student will be rated on a system of letter grades:

A—Work of the best grade; B—work better than average; C+ and C—average work; D—work below average, but barely passing; F—failure; +—pass without defining grade. The grade I—Incomplete, which

carries with it one of the passing grades, is given if all the work in a course has not been completed and there is sufficient reason for this.

Except for the final quarter, all grades for continuous courses must be followed by the letter "n". Such work carries no credit towards graduation until the entire course is completed. The grade of any quarter of a continuous course shall be final, except in thesis and law courses. In this case the letter "n", not accompanied by a grade, is assigned at the end of each quarter to indicate that the student is entitled to continue in the course; upon completing the course, a grade is given which applies to the whole course.

Grade points are computed as follows: 4 grade points for each credit of A; 3 grade points for each credit of B; $2\frac{1}{2}$ grade points for each credit of C+; 2 grade points for each credit of C; 1 grade point for each credit of D. In a subject in which an "incomplete" grade has been received, grade points are counted only after this incomplete has been removed.

To compute grade point averages for graduation, the total number of grade points for courses offered for graduation will be divided by the total number of credits earned in these courses.

REQUIREMENTS FOR GRADUATION

CANDIDACY FOR A DEGREE. Students of the University who are admitted as candidates for a degree must have satisfied the following conditions: (a) they must have fulfilled the entrance requirements of regular students; (b) they must complete the general University requirements shown in the following paragraphs. Students who are candidates for degrees or certificates must file formal applications with the Registrar on the date specified on Official University Notices. Applications must be filed at least one quarter preceding the quarter in which requirements are to be completed.

CREDITS REQUIRED FOR A DEGREE. The work in Montana State University is measured in terms of credit. One credit represents three hours of time per week for one quarter of twelve weeks. The time required for each credit may be distributed in any combination among preparation, recitation, lecture, or laboratory work. A total of 180 credits plus six credits in required physical education is necessary in all courses for graduation with a bachelor's degree except that more are required in Forestry, Law and Pharmacy. Candidates for the degree of Bachelor of Science in Forestry must complete 186 credits in addition to regular requirements in Physical Education and ROTC. Candidates for the degree of Bachelor of Laws must complete three years of Law totaling 126 credits in addition to the entrance requirements of the School of Law. Candidates for the degree of Bachelor of Science in Pharmacy must complete a five year course. Candidates for the Bachelor of Arts degree in the College of Arts and Sciences must complete 93 credits in that college.

CREDITS REQUIRED FOR A MAJOR. A department or school may require that the major students complete from 40 to 55 credits in the chosen field. Not more than 65 credits, including 5 credits earned in survey courses which are allowed in some curricula, may be counted towards graduation. This rule on maximum credits allowed does not apply in the Schools of Business Administration, Forestry, Journalism, Law, Music, or Pharmacy. Exceptions to these regulations may be made on the basis of entrance credits in the Departments of Foreign Languages and Mathematics.

Not more than 65 credits in one foreign language and not more than

90 credits in all foreign languages may be counted towards graduation in that area.

Not more than 90 credits of English, Drama and Speech for a combined major and teaching minor may be counted toward graduation.

Not more than 24 credits in ROTC nor 15 credits in religion may be counted towards graduation.

Except in the School of Music, not more than 12 credits in applied music nor 6 credits in ensemble music may be counted towards graduation.

Only students majoring in Business Administration, those taking a teaching major or minor in Business Administration or those following the curricula in Secretarial-Home Arts are allowed to present more than 19 credits earned in Business Administration 20, 21, 22 or 23ab.

GRADE POINT REQUIREMENTS. The average of the student's grades on the credits offered for graduation, must equal the official University average passing grade of "C". A "C" average is required for all courses in the major field of study for which a grade is received. A transfer student must meet the grade point requirement on credits earned at Montana State University as well as on his entire record.

SPECIALIZATION. A student must select a major field of study before entering the junior year at the University. Usually the selection will be made earlier.

REQUIRED COURSES. All candidates for the Bachelor's degree must meet the following requirements:

- (1) Physical Education, 6 quarters (6 credits) required of all freshmen and sophomore students unless excused for cause. Discharged veterans and students 27 or more years of age are excused from this requirement. All students are also required to pass the University swimming test.
- (2) ROTC, 6 quarters (6 credits) required of all freshmen and sophomore men unless excused for cause. Discharged veterans are excused from this requirement.
- (3) Freshman Composition English 11ab, 2 quarters (10 credits) or English 12abc, 3 quarters (9 credits). All students registering for the first time in either of these freshman composition courses take a placement examination; those who place high are excused from the first quarter of such composition courses (11a or 12a), and those who fail to demonstrate an acceptable college standard must take English A without credit before enrolling in English 11a or 12a. Students who receive a grade of "A" in English 11a are not required to take English 11b, and those who receive an "A" in English 12b need not take English 12c.

GROUP REQUIREMENTS. Effective September 1, 1953, all candidates for the Bachelor's degree, except candidates for the Bachelor of Laws, Bachelor of Science in Forestry, Bachelor of Science in Pharmacy, or Bachelor of Music must present for graduation at least twelve credits from each of the groups I, II, and III following. Credits must be included from at least two of the sub-groups as listed under groups I, II, and III, except that course General 13abc (15 credits) and course General 15abc (15 credits) will satisfy the requirements in groups I and III respectively.

Group I. Astronomy (Math A-11), Bacteriology, Botany, Chemistry, General 13abc (15 credits), Geology, Mathematics, Physics, Zoology.

Group II. Anthropology, Economics, History, Journalism (only courses 11, 36 to a maximum of 3 credits and 90), Political Science, Sociology.

Group III. Fine Arts (course 31abc only), English (literature courses only), Foreign Languages (literature courses only), General 15abc (15 credits), Philosophy, Psychology, Religion (courses 18 and 104 only), Music (course 35abc only).

FOREIGN LANGUAGE REQUIREMENT. In some curricula a knowledge of either a modern or classical foreign language is required. Such requirements may be satisfied by demonstrating a reading knowledge, by taking three years of the language in high school and passing a test thereon at the University, by two years in high school plus one quarter in the University, by one year in high school plus one year (three quarters) in the University, or by five quarters' study of the language at the University. Before students may continue in the University the study of a language begun in high school, they must take a placement examination. They may repeat for University credit one University quarter of the equivalent of their high school studies in the language if the placement test indicates that they are not prepared to take up the study where they left off in high school.

CORRESPONDENCE STUDY. Up to 45 credits earned by correspondence study may be counted toward graduation except that a student must earn 35 of his final 45 credits in resident study at the University.

VETERANS' CREDIT. Veterans may be granted three types of credit—for their work in college training programs such as C.T.D., A.S.T.P., and Navy V-12; for work completed in special service training courses in accordance with the recommendations of the American Council on Education; and not more than 12 "unassigned" credits at the rate of three credits for the first three months of service and one additional credit for each subsequent four months of service.

RESIDENCE REQUIREMENTS. Students who transfer credits earned elsewhere and seek a degree from Montana State University must, in addition to meeting other requirements of the University, earn not less than 45 credits, and devote not less than three quarters to resident study at the University; and 35 of the last 45 credits earned for a degree must be earned in resident study at the University.

REQUIREMENTS OF PARTICULAR CURRICULA. Candidates for a Bachelor's degree must comply with any requirements announced under a particular curriculum, in addition to meeting the general requirements listed here under requirements for graduation.

SENIOR EXAMINATIONS. Some departments and schools in the university require a senior comprehensive examination as part of graduation requirements. This examination does not in any way replace the regular quarterly examinations except that departments adopting or using these senior examinations may excuse their major students during the senior year from regular quarterly examinations in major department subjects. The examination is a written examination of at least three hours length, and in addition further oral or written examinations may be given. Examinations are given the last quarter of senior residence and are arranged in each department or school at the convenience of the persons concerned. If the student fails to pass this special examination, he shall be given another opportunity within the next six months without the necessity of taking additional courses. In case of a second failure, further opportunity will be granted at the discretion of the department or school concerned and the committee on

admission and graduation. For details, check under the alphabetically listed curricula in the catalog.

SENIOR EXAMINATIONS FOR HONORS. Effective September 1, 1953, a student who wishes to be graduated with honors or high honors must meet the following requirements: (1) For honors, in the beginning of his last quarter he must have an index of at least 3.1 for all credits registered for in his entire record as well as in the major field; (2) For high honors, at the beginning of his last quarter he must have an index of at least 3.5 for all credits registered for in his entire record as well as in the major field. A student who transfers credits earned elsewhere to this university must meet the scholastic index indicated on grades earned at Montana State University as well as on his entire record; (3) The student must take an examination, oral or written or both, as determined by the major department or school; (4) He must pass the examination with a grade of "A" or "B"; (5) After these qualifications have been met, the candidate for honors must then receive the recommendations of his major department and of the faculty of Montana State University.

STUDENT SERVICES

At Montana State University, an integrated program of student services is administered through the Division of Student Personnel Services. Satisfactory student growth, socially, emotionally, and educationally, is the purpose of the program. Student services concerned with the welfare of students include the deans of students, the counseling center, health service, placement service, student housing, student union, student loans, and undergraduate scholarships.

OFFICE OF DEAN OF STUDENTS

The Office of Dean of Students has responsibility for the coordination of student personnel services and general supervision of all student welfare. Through personal counsel and group activities, the Deans assist in making opportunities available to students for personal-social success, academic achievement, and experiences in the processes of democratic living. The Associate Dean has specific responsibility for all questions of social and academic welfare of women students, and the Dean similar responsibility for men.

COUNSELING CENTER

A counseling service has been established as a regular part of the University's program. Through a testing program, a psychologist in the Counseling Center helps the students determine suitable educational and vocational objectives. He assists students in study habits, reading techniques, and personal adjustments. An extensive library of occupational information is available in the Counseling Center to inform students on vocational opportunities.

STUDENT HEALTH SERVICE

The Student Health Service is maintained in order to safeguard the health of the students and to furnish competent medical service and nursing care to those who become ill. The privileges of the Health Service are available to all students who pay the required fee at the time of registration. Facilities and services available include:

- (1) Office and dispensary service by physician and nurses.
- (2) House calls by University physician only in case of emergencies or serious illness.

(3) Medicines used in dispensary and infirmary. Prescriptions will be filled at the University Pharmacy and charged to the students at cost, plus a small percentage for overhead.

(4) All office, dispensary, and physiotherapy treatments.

(5) Physical examinations on all entering students. These examinations are required.

(6) A chest X-ray will be given all students each year.

(7) Immunizations for: smallpox, typhoid fever, diphtheria and tetanus.

(8) Medical consultation when requested by University physician, but not to exceed \$10.00 each school year.

(9) Infirmary care up to 15 days per quarter.

(10) All medical and surgical diagnosis.

(11) All laboratory work and X-rays done in the University infirmary.

(12) Health certifications.

No allowance or payments are made by the Health service for:

(1) Eye refractions and glasses.

(2) Dental services and dental X-rays.

(3) Special nurses.

(4) Injuries occurring through accidents off the campus.

(5) Treatment of chronic illness.

(6) Allergy and obstetrical cases.

(7) Hospitalizations, surgery and surgeon fees.

(8) Physical examinations for outside employment.

The privileges of the Health Service are available only during the quarter for which the student is registered and has paid the required fee. The Health Service assumes no responsibility between quarters or during vacations.

PLACEMENT SERVICE

Through the University Placement Service, Montana State University endeavors to assist its graduates in finding positions suited to their interests and training. The services are also extended to business and other organizations in search of University trained personnel. The Placement Service also aids University graduates in later years respecting opportunities for which both a degree and experience are required. A registration fee of \$5.00 is charged those not registered as students in the University.

Similar services are provided for persons interested in teaching in the public schools. School authorities in need of teachers, principals, and superintendents use this facility. The Placement Service also aids teachers, principals, and superintendents in finding positions for which they have become qualified by training, ability, and experience.

STUDENT HOUSING

The Office of the Dean of Students has general supervision over the living accommodations of students. Residence facilities include five residence halls, two housing projects for married students, a women's cooperative house, eight fraternity and six sorority houses, and rooms in private homes.

Freshmen, both men and women, who do not live in their own homes while attending the University are required to live in the residence halls unless excused in special cases by the Deans of Students. Upperclass

women under 21 years of age are also required to live in women's residence halls or with approved student living groups.

RESIDENCE HALLS. Application forms for residence and detailed information may be obtained by writing the Registrar's Office, Montana State University. A \$10.00 deposit is required with each room application. If a room reservation is cancelled, notice in writing must be received by the Manager of Residence Halls on or before September 8 for fall quarter, December 8 for winter quarter, and March 8 for spring quarter. Students will be assigned to the residence halls in the order of application. Students who live in the residence halls are required to board in the hall dining rooms.

Rooms in the residence halls are furnished with single beds, chests or dressers, study table, chairs, and a wastebasket. Each bed is supplied with a mattress, mattress pad, pillow, pillow case, sheets, and two woolen blankets. Bed linen is laundered by the residence halls without extra charge. Window curtains are provided and maintained. Students should bring a bed spread, dresser scarf, towels, wash cloths, and a water glass. A study lamp and a small rug are desirable. Students should not bring electric cooking equipment, electric irons, furniture, or curtains.

Social life in the halls is encouraged through residence hall clubs and numerous activities. Adult counselors cooperate with the students in making living in the halls enjoyable and beneficial. A fee of \$1.00 per quarter is assessed the residents in each hall. This fund is expended for social activities which are planned by the group.

Board is provided for the residents of all halls in three dining rooms—Corbin, North and South Halls. Experienced dietitians provide appetizing and nutritionally adequate meals.

Rates: Board for the quarter is \$114.00 to \$129.50 depending upon the length of the quarter. Board rates are calculated at \$1.55 per day from the official opening to the official closing dates of any quarter, but do not include any three or four-day holidays during the quarter. Room rates by the quarter, per person are: One in a room, \$60; two in a room, \$50; more than two in a room, if any, \$10 less than rate for two in a room. Rates are subject to change.

FAMILY HOUSING. Married students may apply to the Family Housing Office for accommodations in low-cost, temporary housing. One, two and three bedroom units are available.

WOMEN'S COOPERATIVE HOUSE. A women's cooperative house provides an opportunity for girls to gain experience in group living while reducing expenses by sharing in the work of the house. This residence is under supervision of an approved housemother. Information may be obtained by writing to the President, Women's Cooperative House, 601 Daly Avenue, Missoula, Montana.

FRATERNITY AND SORORITY HOUSES. Eight national fraternities and six national sororities maintain their own residences under university supervision. Membership in fraternities and sororities is by invitation, but eligibility for initiation is based on satisfactory scholarship. Sorority houses are under the immediate supervision of resident housemothers, who are appointed with the approval of the Associate Dean of Students.

STUDENT UNION

The Student Union is the extra-curricular center of the campus. Every student registered at Montana State University is a member of the Student Union. Here students may hold meetings, have parties, meet friends, attend movies and participate in student activities. Facilities

of the Union include a coffee shop, bookstore, students' accounts office, Associated Students' office, yearbook office, meeting rooms, dark-room, lounge, game room, social center, and ballroom.

LOANS AND EMPLOYMENT

Limited loan funds are available to qualified upperclassmen in need of financial aid to complete their college work. Information about these may be obtained from the Office of Dean of Students.

Many students meet costs of attending the University by part-time work and scholarships. For freshmen to try to earn all expenses is inadvisable. Students should plan to use their available funds during the first year and increase their earnings as they become familiar with University life and work.

SCHOLARSHIPS AND PRIZES

The University offers many rewards for outstanding academic achievement. Many are available through the generosity of friends and alumni of the university. Graduate scholarships are administered by the Graduate Dean and undergraduate scholarships are administered by the Dean of Students. Prize awards related to specific departments are awarded by the department concerned. A list of scholarships and prizes may be secured by writing to the Dean of Students or to the Registrar.

STUDENT STANDARDS AND AFFAIRS

Consistent with its aims and purposes, the University requires all its students to conform to the usual standards of society and law-abiding citizenship. Every organization affiliated with the University or using the name of the University is required to conduct all its affairs in a manner creditable to the University. Organizations and individuals will be held responsible to this principle. The use of liquor and gambling are not permitted in University buildings or on University grounds. The use of liquor is not approved at social functions.

ABSENCES

ABSENCE INCURRED THROUGH ILLNESS. A student who is absent on account of illness should report the illness immediately to the Health Service and obtain a written excuse upon return.

ABSENCE INCURRED THROUGH PARTICIPATION IN DEPARTMENTAL OR EXTRA-CURRICULAR ACTIVITIES. Absences incurred when a student is on assigned departmental activity will be reported in advance to the Office of the Dean of the Faculty. When a student is representing the University in extra-curricular activities his absence will be reported in advance to the Dean of Students by those in charge of the activity. The offices will decide in each case whether notification to faculty members concerned shall be made by group notice or by individual leave of absence form. It is the student's responsibility to make certain, prior to departure, that his instructors have been notified, and that they agree to the absence.

LEAVES OF ABSENCE. Students who are compelled for personal reasons to be absent from the University should obtain a leave of absence in advance from the Dean of Students Office and from his instructors. In case of sudden emergency when it is not possible for the student to see his instructors, the student should notify the Dean of Students Office or the Registrar's Office of his intended absence.

In all cases, work which a student has missed through absence must be made up as his instructors direct.

STUDENT ORGANIZATIONS

OFFICIAL RECOGNITION OF STUDENT ORGANIZATIONS. Every student organization is required to register with and obtain recognition from the Dean of Students Office. Until such recognition has been granted, the organization is not entitled to the use of space in campus buildings, mention of its activities in campus publications, or the use of the name of the University.

FINANCIAL OBLIGATIONS OF STUDENT ORGANIZATIONS. The State Board of Education has made the following rule: "No contract shall be entered into and no financial obligation assumed by any student organization without the approval of the President or some member of the faculty designated by him."

FINANCIAL OBLIGATIONS OF INDIVIDUAL STUDENTS. Students who owe bills to the University for fees, fines, board and room in the residence halls, and other charges are not permitted to register for the succeeding quarter, secure transcript of record, or obtain diplomas until the obligation is paid or satisfactorily adjusted. Similar action is taken when students owe bills to student organizations whose books are kept in the business offices of Montana State University, including charges for board and room in fraternity and sorority houses.

SOCIAL FUNCTIONS

University social functions which are commenced or continued after 8:30 p.m. are to be held only on Friday and Saturday evenings, or the evening preceding a holiday and are to close not later than 12:00 p.m. Exceptions to these rules may be made by the Associate Dean of Students.

All social functions of student organizations at which women are present are to be approved by and scheduled with the Associate Dean of Students.

STUDENT MARRIAGES

Any marriage, either party of which is a student of the University, must be publicly announced. For this purpose notice of the marriage must be filed promptly with the Registrar. All students on matriculation must indicate on the entrance blank whether married or single. Falsification or willful suppression of any information called for on the form will be grounds for cancellation of matriculation.

ACTIVITIES

The University encourages a full and well-rounded program of activities designed to stimulate students' intellectual, vocational, and social interests. Among the types of student extra-curricular activities are student government, societies and clubs of students engaged in particular studies, professional and honorary organizations, athletic clubs or teams for men or women, student publications, musical organizations, church groups, and residence hall clubs.

The new Auditorium-Field House, to be completed in 1953, occupies a ground area approximately the size of a standard city block. Movable seats, stages, floors, and other equipment make it usable as an auditorium, arena, practice field, etc. There is seating for over 6000 for basketball, 4000 for shows or concerts. Two large lobbies serve for displays and smaller meetings. It is to be used for convocations, commencement exercises, alumni reunions, pageants, military drill and formations, dances, basketball games, and indoor athletic practice or exhibitions.

ATHLETICS

Athletics, including intercollegiate athletics, are a useful and valuable part of the University program for the development and growth of interested students. Facilities are provided for participation in some form of athletics by every member of the student body. Montana State University is a member of the Mountain States Athletic Conference and adheres to all regulations of the Conference regarding eligibility. Aid to students may be given only in conformity with the regulations of the Mountain States Athletic Conference.

ANNUAL INTERSCHOLASTIC GAMES

For forty-seven years Montana State University has held an annual high school invitational meet for track and field contests, golf and tennis tournaments, a declamatory contest, Little Theater Festival, interscholastic debate, and meetings of the Interscholastic Editorial Association.

INTERCOLLEGIATE DEBATE

Montana State University engages in debate with the leading universities in the Northwest and occasionally with eastern universities. In addition to the regular debates, teams from Montana State University make a tour of the state each year. The activity of debate at the University affords opportunity for students in public address to combine academic, class, and practical experience.

PUBLICATIONS

The Associated Students of Montana State University publish a newspaper, *The Montana Kaimin*. The paper has become a permanent factor in campus life.

The Sentinel is a year book published by the Associated Students of the University. It contains a valuable record of the activities of each year.

SOCIETIES

The entire student body is organized into one society known as the Associated Students of Montana State University. This organization, through appropriate committees and officers, has charge of matters of general concern, such as athletics, oratory, debate, and entertainments.

The Associated Women students is an organization made up of all women students in the University for the purpose of regulating matters pertaining to the student life of its members.

The Student Religious Council, Student Christian Association, and various church clubs and associations carry on work for the religious and social life of the University.

In addition to several small musical ensembles, there are the following large organizations: The University A Cappella Choir, Men's Glee Club, Women's Glee Club, Mixed Chorus, University Symphonic Orchestra, and the University Symphonic and Marching Bands. These organizations provide music for university events during the year, and furnish an opportunity for all students who have musical talent to cultivate it as well as to participate in the social pleasures pertaining to such organizations.

The "M" Club is an organization of all Montana State University men who have won a letter in any branch of athletics.

The Montana Masquers is the University dramatics organization, open to students who have distinguished themselves in dramatics in any

capacity such as acting, stage managing, costuming, designing, etc. A series of plays is given throughout the year in Missoula, and occasionally a tour is made of the state.

Penetralia Chapter of Mortar Board is a national honorary organization for senior women devoted to service and promoting the best interests of the University.

Silent Sentinel is a local honorary organization for senior men chosen for their service and leadership in campus citizenship.

Bear Paw is an honorary for sophomore men who have evidenced loyalty and a desire to serve the University.

Alpha Phi Omega is a national service fraternity composed of college and university men who are or have been previously affiliated with the Boy Scouts.

Tanan-of-Spur, as a national honorary, recognizes outstanding sophomore women who have maintained high scholarship, leadership, character, and service.

The Women's Athletic Association is an organization devoted to the development of interest in the various sports for women.

The "M" Club (Women) is an athletic honor society for women.

Kappa Tau is a local honorary for seniors who have maintained outstanding scholarship records throughout their college work.

Alpha Lambda Delta is a national honorary for freshmen women who have maintained high scholarship.

Scabbard and Blade is a National Military Honorary Society for selected Advanced ROTC students. The Society is devoted to increasing interest in military activities, establishing standards of leadership and devotion to duty, and the development of those qualities essential to the efficient officer in the Armed Services.

Pershing Rifles is a national honorary for Basic ROTC students who demonstrate a high military aptitude. Selection of members is based upon a consideration of leadership qualities, military proficiency and academic ability.

The ROTC Sponsor Corps is a local women's military honorary society, organized to add color to military ceremonies and be of service to the campus.

The various departments and schools in the University have professional clubs and honorary organizations for their own students.

ORGANIZATION OF INSTRUCTION

COLLEGE OF ARTS AND SCIENCES

Anthropology	Mathematics
Bacteriology and Hygiene	Medical Technology
Biological Sciences	Philosophy
Botany	Physical Sciences
Chemistry	Physics
Drama	Political Science
Economics	Pre-Medical Sciences
English	Psychology
Fine Arts	Radio
French	Secretarial-Home Arts
Geology	Social Sciences
German	Social Work
Greek	Sociology
Health and Physical Education	Spanish
History	Speech
Home Economics	Wildlife Technology
Latin	Zoology

The College of Arts and Sciences has two primary objectives: To provide the student with a general liberal education and to give him the opportunity to attain competence in some special field of knowledge. The liberal education has as its objectives the development in the student of the habit of organized thinking; of the ability to communicate with others; of the appreciation of art, literature, music and the sciences; of responsibility in social behavior; and of emotional and intellectual maturity. The competence in a special field usually finds its expression in the problem of earning a living.

GRADUATE SCHOOL
 DIVISION OF PUBLIC SERVICE
 SCHOOL OF BUSINESS ADMINISTRATION
 SCHOOL OF EDUCATION
 SCHOOL OF FORESTRY
 SCHOOL OF JOURNALISM
 SCHOOL OF LAW
 SCHOOL OF MUSIC
 SCHOOL OF PHARMACY
 THE COLLEGE OF FINE ARTS
 RESERVE OFFICERS TRAINING CORPS
 SUMMER COLLEGE
 AFFILIATED SCHOOL OF RELIGION
 MONTANA COOPERATIVE WILDLIFE RESEARCH UNIT
 THE UNIVERSITY PRESS

COURSE NUMBERING SYSTEM

Note—In the following outline of courses, the length of a course and the quarter or quarters in which it is given are indicated immediately after its title. Courses numbered from 1 to 99 are offered for undergraduate credit only; those numbered from 100 to 199 are offered for credit to undergraduates of junior and senior standing and to graduates; those numbered from 200 to 299 are offered for graduate credit only. In the courses designated "continuous" the student may receive credit only upon the completion of the entire course. In courses numbered a, b, c, credits may be granted upon completion of a quarter's work. In continuous courses or in courses numbered a, b, c, the first quarter of a course is prerequisite to the second quarter and the second quarter is prerequisite to the third quarter, unless otherwise indicated. This outline is as nearly complete as it can be made and it affords the student information which is necessary in arranging his course. When the student has decided upon his major course, he is expected to follow closely the work which is outlined as the required course in that line of study or research.

The University reserves the right to withdraw any course for which fewer than five students are enrolled before the opening of the course. Such courses may be given only in special cases and with the written approval of the President.

BACTERIOLOGY

Professor Donald M. Hetler, Chairman; Assistant Professor Edmund E. Jeffers; Lecturers (at Rocky Mountain Laboratory, U. S. Public Health Service) Carl M. Eklund, Bill H. Hoyer, David B. Lackman, Richard A. Ormsbee, Samuel Salvin.

HIGH SCHOOL PREPARATION. In addition to the general requirement for admission to the University the student needs algebra and geometry. It is also recommended that the high school preparation include advanced algebra and French or German.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN BACTERIOLOGY. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Bacteriology: 40 or more credits including the following courses: Bacteriology 117, 118, 119, 121, 125, 131, 3 credits of 129. Also Chemistry 17 and 38ab; Physics 11abc or 20abc. In addition, major students must have a reading knowledge of a modern foreign language.

FOR UNDERGRADUATES

19. **ELEMENTARY BACTERIOLOGY.** 1 Q. Autumn. Summer. 5 cr. Open to all students, but may not be applied toward a major in bacteriology. Designed for nursing, home economics, and sociology students. Fundamentals of general bacteriology, pathogenic bacteriology, and immunology.

26. **GENERAL HYGIENE.** 1 Q. Winter. Summer. 3 cr. Open to all students. An informational course dealing with the subjects as related to the individual, the community, and the state. Bacterial and protozoan diseases, food, exercise, sleep, ventilation, drainage, disinfectants, quarantine, and public health. Not a laboratory course.

FOR UNDERGRADUATES AND GRADUATES

101ab. **PHARMACEUTICAL BACTERIOLOGY.** 2 Q. Autumn, winter. Continuous. 5 cr. each quarter. Prerequisites, Chemistry 38ab, Physics 11abc or 20abc. General coverage of fundamental bacteriology, pathogenic bacteriology, and immunology as it applies to the fields of pharmacy and medicine. These courses cannot be applied as partial credit for a major in the department.

103. **PARASITOLOGY.** 1 Q. Winter. 5 cr. Prerequisite, Zoology 10 and junior standing. An introduction to parasitology.

117. **GENERAL BACTERIOLOGY.** 1 Q. Autumn. 5 cr. Prerequisite, Chemistry 38ab and Physics 20abc or equivalent and consent of instructor. Laboratory technique; physiology of bacteria and effect of environmental factors on bacteria; microbiology of soil, water, milk, and other foods; microbiology in industry. Students who have taken Bacteriology 19 may not receive full credit for this work. This is a duplication of the course formerly numbered 119a.

118. **IMMUNOLOGY.** 1 Q. Winter. 5 cr. Prerequisite, course 117 and consent of instructor. General principles of immunity, and laboratory work in serology, animal experimentation, and clinical diagnosis. This is a duplication of the course formerly numbered 120.

119. **PATHOGENIC BACTERIOLOGY.** 1 Q. Spring. 5 cr. Prerequisite, course 118. The characteristics of micro-organisms and their relation to the etiology, prophylaxis, and control of infectious diseases. This is a duplication of the course formerly numbered 119b.

121. **DIAGNOSTIC BACTERIOLOGY.** 1 Q. Spring. 5 cr. Prerequisite, course 119 or concurrent registration. Laboratory work embraces the standard diagnostic methods used in hospitals and public health laboratories.

122. **BACTERIOLOGY OF FOODS AND WATER.** 1 Q. Winter. 5 cr. Prerequisite, course 19 or 117. Standard methods of water analysis. Examination of milk, oysters, meat, canned foods, etc. Laboratory.

125. **HEMATOLOGY.** 1 Q. Autumn or winter. 5 cr. Prerequisites, junior standing and course 119. An intensive study of the blood in health and disease.

126. **SANITATION AND PUBLIC HEALTH.** 1 Q. Spring. 5 cr. Prerequisite, junior standing, and course 19 or 117. Sanitation and disease prevention with relation to the community. Surveys, reports. Not given in 1953-55.

129. **BACTERIOLOGICAL JOURNALS.** 3 Q. Autumn, winter, spring. Summer. 1 cr. each quarter. Prerequisite, senior standing and 15 credits in bacteriology. Study of current bacteriological and public health literature.

131. **ADVANCED BACTERIOLOGY.** 1 to 3 Q. Autumn, winter, spring. 2-5 cr. each quarter. Prerequisite, consent of instructor and course 118. The results of modern experimental bacteriology and hygiene. Each student may be assigned individual work in advanced technique.

190. **SEMINAR.** 1 Q. Any quarter. 2-5 cr. Prerequisite, senior standing and 20 credits in bacteriology. Advanced study of various fields of bacteriology, immunology, parasitology and public health.

191. **ADVANCED IMMUNOLOGY.** 1 Q. Any quarter. 3-5 cr. Prerequisite, senior standing and course 118, study of the advanced theories and their applications in the field of immunology.

192. **VIRUSES.** 1 Q. Any quarter. 5 cr. Prerequisite, senior standing and course 119. Their detection, activities and application to medicine.

193. **MICRO-BIOLOGICAL PHYSIOLOGY.** 1 Q. Any quarter. 3-5 cr. Prerequisite, senior standing and 20 credits in bacteriology. Physiology of bacteria and related micro-organisms.

FOR GRADUATES

200. **ADVANCED BACTERIOLOGICAL PROBLEMS.** 1 to 3 Q. Autumn, winter, spring. Credit variable. Prerequisite, course 131 or equivalent and consent of instructor. Opportunity is given graduate students to pursue original or assigned investigations individually.

BIOLOGICAL SCIENCES

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra and geometry. It is also recommended that the high school preparation include a foreign language.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN BIOLOGICAL SCIENCES. The requirements in this major are listed as to enable the student to qualify for graduate study in either botany or zoology. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Biological Sciences: 57 or more credits in Biological Science including Bot. 11ab (General Botany), Bot. 12 (Classification of Spring Flora) or Bot. S61 (Introduction to Systematic Botany), Bot. 22 (Plant Physiology), Bot. 51 (Plant Ecology), Bot. 126 (Evolution, Zool. 10 (General Zoology, Zool. 15 (Field Zoology), Zool. 23 (Comparative Vertebrate Anatomy), Zool. 24 (Human Physiology), Bact. 19 (Elementary Bacteriology), Gen. 100 (Conservation of Natural and Human Resources).

The following courses must be completed: Chem. 11abc (General Chemistry) or Chem. 13ab (Inorganic Chemistry) and Chem. 13c (Qualitative Analysis), 2 quarters (3 recommended) of Physics 11abc or 20abc (General Physics).

Suggested electives: One or more quarters of Zool. 129 (Biological Literature). As much election as possible from the Humanities and Social Science fields.

A reading knowledge of a modern foreign language is required.

Students who plan to fulfill the requirements for a Secondary School Teaching Certificate should check with the Dean of the School of Education or the Registrar.

BOTANY

Professors Reuben A. Diettert, Joseph Kramer, J. W. Severy (Chairman), Charles W. Waters; Assistant Professors Meyer Chessin, LeRoy H. Harvey.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra and geometry. It is also recommended that the high school preparation include a foreign language.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN BOTANY. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Botany: 50 or more credits including Botany 11ab, 12, 21, 22, 126, 51, and at least one quarter of Botany 170. Zoology 125 may be applied in partial fulfillment of this credit requirement. The following courses must be completed: Zoology 10, 24, 15, 125, 3 credits of 129; Chemistry 11abc or 13ab. Electives from Botany 141, 142,

143, 160, S163, 164, S176, S199, 165, 168, S174, or General 13c. A reading knowledge of German or French is required for all majors in Botany.

Courses 51, S61, 125, 160, and 164 may require field trips extending some miles from the campus. Students are required to pay their pro rata share of transportation and insurance costs for such trips.

FOR UNDERGRADUATES

10a. FORESTRY BOTANY. 1 Q. Winter. 5 cr. No prerequisite. An introduction to the anatomy and physiology of the higher plants.

10b. FORESTRY BOTANY. 1 Q. Spring. 5 cr. No prerequisite. Outlines of the morphology and classification of the plant groups with particular emphasis upon the identification of the flowering plants of the local area; drill in the use of a manual. NOTE: The 10ab sequence is primarily for majors in forestry.

11a. GENERAL BOTANY. 1 Q. Autumn. Summer. 5 cr. No prerequisite. A presentation of the general principles of the anatomy and physiology of the flowering plants.

11b. GENERAL BOTANY. 1 Q. Winter. Summer. 5 cr. No prerequisite. A broad outline of the classification of the plant kingdom; tracing of the possible stages in the evolution and development of the vegetative and reproductive structures of plants.

12. CLASSIFICATION OF SPRING FLORA. 1 Q. Spring. 3 cr. Prerequisite, General 13a or Botany 10a or 11a. A laboratory and field introduction to the classification of the higher plants as exemplified in the spring flora.

13. PHARMACEUTICAL BOTANY. 1 Q. Autumn. 5 cr. No prerequisite. Anatomy and physiology of plants, with particular emphasis upon origin and structure of organs and tissues. Growth and related phenomena. Outlines of plant classification with particular reference to drug producing plants.

21. PLANT ANATOMY. 1 Q. Autumn. 5 cr. Prerequisite, Botany 10ab or 11ab and 12. Detailed study of origin of organs and tissues of plants and a comprehensive survey of the anatomy of the higher plants. Given in 1953-54 and in alternate years.

22. PLANT PHYSIOLOGY. 1 Q. Winter. 5 cr. Prerequisite, Botany 10a or 11ab and Chemistry 11abc or 13ab. The functions of the living plant and an attempt to interpret functions in terms of chemical and physical reactions. Laboratory observations of the various processes of plants under controlled conditions.

51. PLANT ECOLOGY. 1 Q. Spring. 5 cr. Prerequisite, Botany 10b or 12, and 22. The relation of vegetation to the factors of the environment; the influence of environmental factors upon the distribution of plants; the problems of plant succession; plant geography.

S61. AN INTRODUCTION TO SYSTEMATIC BOTANY. 1 Q. Summer. 4 cr. Open to all students. The classification of flowering plants and a survey of the origin and relationships of the higher plants. Plant identification; use of a manual; methods of collecting, preserving, and mounting plants. The work deals with the summer flora of Western Montana.

FOR UNDERGRADUATES AND GRADUATES

125. FOREST PATHOLOGY. 1 Q. Spring. 5 cr. Prerequisite, junior standing and Botany 51 and Forestry 26ab. The agencies of disease and decay of trees and structural timbers. Problems of government forests.

126. EVOLUTION. 1 Q. Winter. 3 cr. Prerequisite, Botany 10ab or 11ab and 12, and Zoology 10 and 15 and junior standing. The theories of evolution from the historical point of view; the nature of evolutionary processes, the evidence for evolution, and the factors of evolution. Not a laboratory course. Students may not receive credit for this course and the identical course Zoology 126.

129. BIOLOGICAL LITERATURE. 3 Q. Autumn, winter, spring. 1 cr. each quarter. Prerequisite, senior standing and 20 credits in Botany or Zoology and consent of the chairman of the Department of Botany or Zoology. Reviews of recent literature as a survey of the trend of investigation and experimentation in biological fields. Reports of special studies.

141. MORPHOLOGY OF THE THALLOPHYTES. 1 Q. Autumn. 5 cr. Prerequisite, junior standing and Botany 10ab or 11ab, and 12. A systematic study of the morphology and life histories of representative Thallophytes. Given in 1954-55 and in alternate years.

142. MORPHOLOGY OF THE BRYOPHYTES AND PTERIDOPHYTES. 1 Q. Winter. 4 cr. Prerequisite, junior standing and Botany 10ab or 11ab, and 12. Comparative morphology of the Bryophytes and Pteridophytes. Given in 1954-55 and in alternate years.

143. MORPHOLOGY OF THE SPERMATOPHYTES. 1 Q. Spring. 4 cr. Prerequisite, junior standing and Botany 10ab or 11ab, and 12. Morphology and life histories of representatives of the major groups of Gymnosperms and Angiosperms. Given in 1954-55 and in alternate years.

160. GENERAL SYSTEMATIC BOTANY. 1 Q. Spring. 5 cr. Prerequisite, junior standing and Botany 11ab and 12 or equivalent. The identification and classification of vascular plants; principles of nomenclature; ecological distribution; methods of collecting, preserving and mounting plants. Students who have received credit in 161b may not take this course for credit.

164. AGROSTOLOGY. 1 Q. Winter. 5 cr. Prerequisite, junior standing and Botany 10ab or 11ab and 12; 160 recommended. Identification, classification, and ecological relationships of grasses, sedges, and rushes. Students who have received credit in 161a may not take this course for credit.

165. MYCOLOGY. 1 Q. Autumn. 5 cr. Prerequisite, Botany 141 for Botany majors; Botany 125 for Forestry majors. The classification and relationships of the fungi, with training in their collection and preservation.

168. MICROTECHNIQUE. 1 Q. Any quarter, but preferably in the spring. 2-5 cr. Course may be repeated during a succeeding quarter to a maximum of 5 credits. Prerequisite, Botany 21. Methods of preparing microscopic slides; instruction in the paraffin method, venetian turpentine method, celloidin method, and the glycerine method.

170. ADVANCED BOTANY. 1 Q. Any quarter. 2-5 cr. General prerequisite, junior standing and consent of instructor.

(I) Physiology. Prerequisite, Botany 22.

(II) Ecology. Prerequisite, Botany 51.

(III) Morphology. Prerequisite, two quarters of Botany 141, 142 or 143.

(IV) Taxonomy. Prerequisite, Botany 160 and 164.

May be repeated during succeeding quarters.

FOR GRADUATES

200. ADVANCED BOTANICAL PROBLEMS. 1 to 3 Q. Any quarter. Credit variable. The department is prepared to arrange for properly qualified graduate students, courses in plant anatomy, ecology, morphology, physiology, or taxonomy.

COURSES OFFERED AT THE BIOLOGICAL STATION:

S163. AQUATIC FLOWERING PLANTS. 1 Q. Summer. 3 cr. Prerequisite, Botany 160. Identification, classification, and ecological distribution of the higher aquatic plants.

S164. AGROSTOLOGY. 1 Q. Summer. 3 cr. Prerequisite, Botany 160. Identification, classification and ecological relationships of the grasses, sedges, and rushes. Students who have received credit in the former course, 161a, may not take this course for credit.

S174. FRESH WATER ALGAE. 1 Q. Summer. 3 cr. Prerequisite, junior standing and Botany 11ab, and 12. Identification, classification, distribution. Life histories and limnological relationships of the algae of the Northern Rocky Mountains.

S176. BRYOPHYTES. 1 Q. Summer. 3 cr. Prerequisite, junior standing, Botany 11ab and 12 or equivalent. The taxonomy, morphology, and ecology of the Bryophytes of the Northern Rocky Mountains.

S199. SPECIAL PROBLEMS IN BOTANY. 1 Q. Summer. Credit variable (3-6). Course may be repeated not to exceed a maximum of 12 credits. Prerequisite, at least 20 credits in botany, junior standing and consent of instructor.

S200. ADVANCED BOTANICAL PROBLEMS. 1 to 3 Q. Credit variable. The department is prepared to arrange for properly qualified graduate students, courses in plant anatomy, ecology, morphology, physiology, or taxonomy.

BUSINESS ADMINISTRATION

Professors Roy J. W. Ely, Donald J. Emblen, Albert T. Helbing, Harold J. Hoflich, Robert C. Line, Theodore H. Smith (Dean), Brenda Farrell Wilson; Associate Professor Theodore L. Whitesel; Assistant Professors E. Joe DeMaris, Edwin O. Dwyer, Herbert R. Kroeker, O. F. Rydell, John W. Swackhamer; Acting Assistant Professor Fred A. Henningsen; Instructors Margaret Alexander, William T. Boone, Frances Colvill, Edmund T. Fritz, Alvahild Martinson, R. H. Robinson, Norman E. Taylor, Vernon C. Vogt.

THE PROGRAM IN THE SCHOOL OF BUSINESS ADMINISTRATION. Upon entering the University, a student indicating his or her desire to major in Business Administration is registered as a Pre-Business Administration major and a Business Administration School staff member is selected as adviser.

The first two years are occupied in completing the general university requirements and prerequisite course work for courses to be taken subsequently in the School of Business Administration.

The general university and Pre-Business Administration requirements include the following: English 11ab or 12abc, 9 or 10 cr.; Health and Physical Education 11abc, 12abc, 6 cr.; Mathematics and Science, 13-15 cr.; Economics 14ab, 8 cr.; History and Political Science, (17a recommended), 4 cr.; group requirements from Group III, 12-15 cr.; ESP 20, 3-5 cr.; Bus. Ad. 11ab, 10 cr.; ROTC (men), 6 cr. (Secretarial and business teaching majors are not required to take Pol. Sci. 17a and ESP 20.)

BUSINESS ADMINISTRATION MAJORS (junior standing required). To achieve the degree of Bachelor of Science in Business Administration the student must offer 180 credits (plus Health and Physical Education); successfully complete the general university and pre-business requirements; present not less than 96 credits (includes 6 credits in Health and Physical Education) of work taken in schools and departments other than the School of Business Administration; complete Bus. Ad. 123, 129, 134, 141abc, 151, 185 and Econ. 101; select an area of concentration; offer not less than a total of 75 credits in courses in the School of Business Administration and courses accepted as listed below:

- (a) Courses outside the School of Business Administration which may count toward the 75 credit requirement are: all courses offered by the Department of Economics except Econ. 10, English 61, History 125 and 126.
- (b) The following additional courses are acceptable in areas of concentration developed in the curriculum of the School of Business Administration:
 - Marketing area of concentration—Journalism 43, 44, Home Economics 17c, 18.
 - Management area of concentration—Psychology 140, 141.

Students majoring in Secretarial Science and Business Teaching are not required to take Bus. Ad. 141c, 185, and may substitute 105 for 129.

AREAS OF CONCENTRATION. Before the beginning of the third quarter of his junior year, the student shall select one of the following areas: Accounting, Public or Industrial; Banking, Finance and Insurance; Industrial Organization, Management and Personnel; Marketing, General or Retailing; General Business; Combination Business and Law; Secretarial; Business Teaching. The course work required in each of these areas of concentration is listed below. Deviations from the prescribed program must have the approval of the adviser in the area of concentration.

ACCOUNTING

Advisers, Emblen and DeMaris.

Students majoring in accounting will elect the course of study designed to provide training for either (1) industrial accounting or (2) public accounting.

A minimum of 40 credits in accounting subjects is required for a major in accounting. In addition, Bus. Ad. 133 is required for all majors in accounting, as well as Bus. Ad. 11ab, 12ab, 114ab.

The courses suggested for a specific curriculum are presented below and are in addition to the basic courses:

- (a) Industrial Accounting (19 credits)—Bus. Ad. 105, 113a, 145ab, 148, 191.
- (b) Public Accounting—a minimum of 16 credits from the following—Bus. Ad. 113ab, 115ab, 145ab, 146ab, 147, 149.

BANKING AND FINANCE

Adviser, Whitesel.

26-27 credits including Bus. Ad. 12a, 132, 133, 134, 135, 153, 156ab, and Eng. 61.

INSURANCE

Adviser, Henningsen.

26 credits including Bus. Ad. 124, 125, 126, 130, 131, 132, 153, and Eng. 61.

INDUSTRIAL ORGANIZATION, MANAGEMENT AND PERSONNEL

Adviser, Helbing.

31 credits including Bus. Ad. 114a, 153, 180, 181, 182, Econ. 113a, Eng. 61, Psych. 140, 141.

MARKETING

Adviser, Taylor.

30 credits including Bus. Ad. 132, 153, 155, 158, 159. In addition six credits shall be selected from the following courses: Bus. Ad. 107, 109, 152, 157, 160, 161, 194.

RETAILING

Adviser, Line.

30 credits including Bus. Ad. 132, 153, 155, 157, 159, 160, 161, Journ. 44. Women students may substitute Home Economics 17c, 18, and 82 for Bus. Ad. 153, 161 and Journ. 44. Bus. Ad. 109 and Journ. 43 are also recommended.

GENERAL BUSINESS

Advisers, Dwyer and Rydell.

25 credits including Bus. Ad. 20a, 25, 133, 153, 156a, 180, and 181 or 158, Eng. 61.

COMBINED COURSE IN BUSINESS ADMINISTRATION AND LAW

Adviser, Smith.

The university offers a combined curriculum which leads to the degree of Bachelor of Science in Business Administration at the end of four academic years and the degree of Bachelor of Laws at the end of six academic years (including one summer session). In this program a student must satisfy fully the University and School of Business Administration curriculum requirements and, during his junior year in the School of Business Administration, must complete Bus. Ad. 123, 129, 134, 151, 185, and Econ. 101, plus 13 additional credits as electives within the School of Business Administration (other than Bus. Ad. 141abc).

Upon completion of the foregoing program with at least a 2.0 index of grade points earned to courses undertaken, the student may be admitted to the School of Law. If so admitted, the student will receive the degree of Bachelor of Science in Business Administration at the end of the first academic year in the School of Law, provided the student is certified as having completed the work of the first year of law to the satisfaction of the School of Law.

SECRETARIAL SCIENCE

Advisers, Martinson and Alexander.

Candidates for the degree of Bachelor of Science in Business Administration concentrating in Secretarial Science are required to take the following courses in addition to the core courses in Business Administration: Bus. Ad. 21, 22abc, 23ab, 24ab, 25, 26, 27, 100. Most of these courses should be taken in the junior and senior years. If a student contemplates only a two-year program, by special permission these courses may be taken in his freshman and sophomore years.

BUSINESS TEACHING MAJORS

Adviser, Wilson.

A student planning to prepare for high school teaching may secure his or her degree from the School of Business Administration or the School of Education.

To secure the degree of Bachelor of Science in Business Administration

with a teaching certificate a student must meet the requirements of the School of Business Administration and include in his or her program the additional following courses in the Secretarial Science Department: Bus. Ad. 21, 22abc, 23a, 24a, 25, 26, 27.

BUREAU OF BUSINESS AND ECONOMIC RESEARCH. The Bureau of Business and Economic Research has been established as an integral part of the School of Business Administration to extend its services to the people of Montana (1) through research which will contribute to the most effective use of resources of Montana and the highest possible living standards; (2) by presenting analyses of current business conditions and developments, and by making studies which are useful and will be of particular interest and value to the Montana business communities and (3) by providing opportunities and assistance for research by faculty members and students, thus enriching the instruction of students and broadening the contribution of faculty members to the intellectual and economic life of the state.

ACCOUNTING

FOR UNDERGRADUATES

11ab. **ELEMENTARY ACCOUNTING.** 2 Q. Autumn, winter, spring, summer, 5 cr. each quarter. A student may be exempt from 11a upon passing a placement examination admitting him to 11b. Fundamental principles as applied to proprietorship, partnership, and corporation.

12ab. **INTERMEDIATE ACCOUNTING.** 2 Q. Autumn, winter. 4 cr. each quarter. Prerequisite, Bus. Ad. 11ab. Financial statements preparation and analysis. Examination of the needs of management for accounting information. Accounting theory as it applies to income determination and the valuation of assets, liabilities, and surplus. Special accounting problems of corporations. Students who have received credit in Bus. Ad. 14 may not receive credit for 12b.

113ab. **ADVANCED ACCOUNTING.** 2 Q. Autumn, winter. 4 credits each quarter. Prerequisite, Bus. Ad. 12ab. Problems of partnerships, installment sales, consignments, branch accounting, receivership accounting, accounting for estates and trusts. Emphasis is given to the theory and preparation of consolidated statements in the second quarter.

114ab. **COST ACCOUNTING.** 2 Q. Winter, spring. 3 cr. each quarter. Prerequisite, Bus. Ad. 11ab. The development of accounting information for management relative to production and distribution costs. Cost accounting systems applicable to various types of production situations are studied, e.g. job order, process, and standard cost systems.

115ab. **AUDITING.** 2 Q. Autumn, winter. 4 cr. each quarter. Prerequisite, Bus. Ad. 113ab. The general scope and purpose of auditing; the audit program, the analytical study of balance sheets and accounting records, with practical problems. The application of the theory of auditing to practical problems, the preparation of financial reports, with full analysis in approved form for submission to clients.

145ab. **INCOME TAX.** 2 Q. 145a, Autumn, Winter; 145b, Spring. 3 cr. each quarter. An intensive study of the federal income tax law as it applies to individuals, partnerships, and corporations with practical problems in the preparation of tax returns. Emphasis in the second quarter will be on corporation taxes, including the excess profits tax, and on tax research, both state and federal.

146ab. **ACCOUNTING SYSTEMS.** 2 Q. Autumn, winter. 3 cr. each quarter. Prerequisite, Bus. Ad. 113ab. Accounting problems and types of accounting records of the more common classes of business and government. These classes include: banks, mercantile stores, mining companies, city and state governments, public utilities, contractors, transportation companies, agricultural enterprises, and hotels.

147. **MUNICIPAL ACCOUNTING.** 1 Q. Spring. 3 cr. Prerequisite, Bus. Ad. 11ab and junior standing. A study of accounting principles and problems as applied to state and local governments, and other public institutions.

148. **MANAGERIAL ACCOUNTING.** 1 Q. Autumn. 4 cr. Prerequisite, Bus. Ad. 12ab and 114ab, and senior standing. A course for accounting majors who expect to prepare and interpret accounting reports specifically designed to aid management. The controllership function in modern management; preparation and use of business budgets; internal auditing; reporting and interpretation of cost data; other accounting control devices.

149. **C.P.A. PROBLEMS AND REVIEW.** 1 Q. Spring. 4 cr. Prerequisite, Bus. Ad. 146. This course is designed primarily for students preparing to take the examinations for the certificate of Certified Public Accountant. It furnishes a comprehensive review of questions and problems in accounting and auditing given by the American Institute of Accountants.

BANKING AND FINANCE

FOR UNDERGRADUATES

101. MONEY AND BANKING. 1 Q. Autumn. Summer. 4 cr. Prerequisite, junior standing and Econ. 14ab. A study of money and banking principles and institutions. Students having had Bus. Ad. 134 are not eligible for this course. Students may not receive credit for this course and the identical course Econ. 101.

103ab. PUBLIC UTILITY ECONOMICS. 2 Q. Autumn, winter. 4 cr. each quarter. (a) Prerequisite, junior standing and Econ. 14ab. Economics of utilities, history, regulation and rate making. (b) Prerequisite, Econ. 103a. River basins and federal power projects, public and private power. Montana's relation to power development. Students may not receive credit for this course and the identical course Econ. 103ab.

104. PUBLIC FINANCE. 1 Q. Winter. Summer. 4 cr. Prerequisite, junior standing and Econ. 14ab. Principles and problems of Federal financing. Students may not receive credit for this course and the identical course Econ. 104.

105. STATE AND LOCAL TAXATION. 1 Q. Spring. Summer. 4 cr. Prerequisite, junior standing and Econ. 14ab. A study of revenues and expenditures on state and local levels. Students may not receive credit for this course and the identical course Econ. 105.

123. PRINCIPLES OF INSURANCE. 1 Q. Autumn. Winter. Spring. 4 cr. Prerequisites, junior standing and Econ. 14ab. An introductory course covering the nature of risk, basic insurance principles, and practices in the more important branches of the insurance business. Students may not receive credit for this course and the identical course Econ. 123.

124. LIFE, ACCIDENT AND HEALTH INSURANCE. 1 Q. Winter. 3 cr. Prerequisite, junior standing, Bus. Ad. 123. A study of the principles and practices of sound life insurance covering forms and kinds of policies, rate making, settlement options, reserves and surplus, and government regulation.

125. PROPERTY INSURANCE. 1 Q. Spring. 3 cr. Prerequisite, junior standing and Bus. Ad. 123. A study of fire insurance and allied lines covering forms and kinds of policies, rate making, reserves and regulation.

126. CASUALTY INSURANCE. 1 Q. Spring. 3 cr. Prerequisite, junior standing and Bus. Ad. 123. A study of automobile, accident and health and other casualty insurance including workmen's compensation, pension plans, and other group coverage.

130. SOCIAL INSURANCE. 1 Q. Spring. 3 cr. Prerequisite, Econ. 14ab and Bus. Ad. 123. Legal, economic and social aspects of the relation of these insurances to collective bargaining and industrial unrest. Students may not receive credit for this course and the identical course Econ. 130.

131. REAL ESTATE. 1 Q. Autumn. Spring. 4 cr. Prerequisite, junior standing and Econ. 14ab. Factors that affect value of real estate; markets, title and real estate transfers.

132. CREDIT AND CREDIT ADMINISTRATION. 1 Q. Autumn. Winter. 4 cr. Prerequisite, junior standing and Bus. Ad. 134 or Econ. 101. The general nature and functions of credit, credit instruments, the credit executive, operation of the credit department, sources of credit information, acceptance of credit risk and establishment of credit limits and collections.

133. CORPORATION FINANCE. 1 Q. Autumn. Spring. 5 cr. Prerequisite, junior standing and Bus. Ad. 134. The position of corporate organization in modern business; the financial side of organization and promotion; the financial policy with reference to underwriting; capitalization; earnings; surplus; insolvency; receivership and reorganization. Problems and methods of social control. The financial organization of particular corporations. Students may not receive credit for this course and the identical course Econ. 133.

134. FINANCIAL ORGANIZATION. 1 Q. Autumn. Winter. Spring. 5 cr. Prerequisite, junior standing and Econ. 14ab. An introduction to business finance. The course includes an analysis of the financial institutions, commercial banks, investment banks, savings banks, insurance companies, mortgage companies, savings and loan associations, sales finance companies, discount houses, factors and the relationship between these institutions and commercial and industrial enterprises.

135. BANK MANAGEMENT. 1 Q. Spring. 4 cr. Prerequisite, junior standing and Bus. Ad. 101 or 134. A study of the principal problems confronting the executives of commercial banks—liquidity, loan and investment policy, credit analysis, loan administration, interbank borrowing, bank operating costs, bank earnings, and relations with customers, government, and the public.

136. SECURITY AND COMMODITY MARKETS. 1 Q. Winter. 4 cr. Prerequisite, Bus. Ad. 134 and senior standing. The operation of the organized security and commodity exchanges, with special emphasis on the New York Stock Exchange and the Chicago Board of Trade; the relation of the organized exchanges to market stability and orderly pricing.

154. INVESTMENTS. 1 Q. Winter. 3 cr. Prerequisite, Bus. Ad. 134 or Econ. 101. Investment principles from the standpoint of the investor. Includes study of investment objectives, investment media, mechanics of investment, tests of investment values, financial analysis of corporate and governmental securities, and investment plans for individuals and institutions.

156ab. BUSINESS CYCLES AND BUSINESS FORECASTING. 2 Q. Winter, 4 cr.; Spring, 2 cr. Prerequisite, Bus. Ad. 134 or Econ. 101 and senior standing. History, measurement, and analysis of fluctuations in business activity; factors influencing employment, production, prices and national income; problems of interpretation and forecasting; consideration of policies intended to stabilize business conditions. 156a is a prerequisite for 156b. Students may not receive credit for this course and the identical course Econ. 156ab.

BUSINESS LAW

FOR UNDERGRADUATES

141abc. BUSINESS LAW. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Prerequisite, junior standing; must be taken in sequence. 141abc are required of all Business Administration students (those students specializing in Secretarial Science and Commercial Teaching are excused from 141c.) (141a) Introduction, contracts, sales; (141b) agency, negotiable instruments; (141c) partnerships, corporations. Pre-law students are not eligible to take this course.

INDUSTRIAL ORGANIZATION, PRODUCTION AND MANAGEMENT

FOR UNDERGRADUATES

Econ. 114. INDUSTRIAL RELATIONS. 1 Q. Spring. 3 cr. Prerequisite, junior standing and Econ. 14ab or consent of instructor for other than departmental majors. A study of the principles and problems that govern the relations of management and labor.

129. INDUSTRIAL ORGANIZATION AND MANAGEMENT. 1 Q. Autumn. Winter. Spring. 4 cr. Prerequisite, junior standing and Econ. 14ab. An introductory survey of the principles of administration as applied to the organization and operation of manufacturing. It is the basic course in production management. It deals with such problems as: building and maintaining the internal organization; plant location and layout; materials procurement and handling; production planning and control; work simplification and methods of improvement; wage and salary administration and other human relations problems such as hiring, training, job evaluation and collective bargaining. Students may not receive credit for this course and the identical course Econ. 129.

162. RETAIL DRUG STORE MANAGEMENT. 1 Q. Winter. 4 cr. Prerequisite, Bus. Ad. 151 and a major in pharmacy. Buying, pricing, selling, store arrangement display, drug store advertising, credit control, financing and operation ratios.

180. AMERICAN INDUSTRIES. 1 Q. Autumn. Winter. 4 cr. Prerequisite, Bus. Ad. 151. The course deals with complicated economic problems and the technological processes of selected manufacturing industries. It gives a comprehensive picture of the major industries, location factors, their significance in the economy, the structure of each industry and the question of national policy relating thereto because of competition or oligopoly.

181. PERSONNEL MANAGEMENT. 1 Q. Winter. Spring. 4 cr. Prerequisite, Bus. Ad. 129 and senior standing. An introductory course dealing with the genesis of personnel problems. The course will cover the organization and functions of a personnel department including in this job evaluation, selection, training of employees, employee incentives, and social controls.

182. REGULATION OF INDUSTRY. 1 Q. Spring. 4 cr. Prerequisites, senior standing, Bus. Ad. 129 and 151. This course deals with the government relationships, with industrial activity, including: efforts to maintain competition; meeting the problem of economic concentration and combination; regulatory practices; patents; interference with free enterprise; direct controls of various phases of economic life and the action of the courts concerning the constitutionality of regulatory legislation.

185. BUSINESS STATISTICS. 1 Q. Every quarter. 4 cr. Prerequisites, Math. 25, Econ. 14ab, and junior standing. An evaluation and technical study of the measurement of central tendency and dispersion, sampling analysis, index number construction and time series composition, and specialized correlation techniques as applied to business and economic data. This is as

much a course in reading and interpretation of statistics as in construction of the standard measures.

186. COMMERCIAL AND TRADE ASSOCIATIONS. 1 Q. Spring. 2 cr. Prerequisite, senior standing. The growth and economic justification of trade associations; a study of their functions, policies, programs, and legal aspects.

MARKETING

FOR UNDERGRADUATES

102. TRANSPORTATION. 1 Q. Spring. 4 cr. Prerequisite, junior standing and Econ. 14ab. The principles of railway, ocean, and waterway, motor truck and bus, and air transportation. Students may not receive credit for this course and the identical course Econ. 102.

109. ECONOMICS OF CONSUMPTION. 1 Q. Winter. 3 cr. Prerequisite, junior standing and Econ. 14ab. An analysis of the final stages of the economic process. Students may not receive credit for this course and the identical course Econ. 109.

151. MARKETING. 1 Q. Autumn. Winter. Spring. Summer. 5 cr. Prerequisite, junior standing and Econ. 14ab. The prevailing methods of marketing as they apply to consumer goods, producer goods and raw materials. A study of marketing institutions, marketing functions, merchandising, price policies, and government regulations. Students may not receive credit for this course and the identical course Econ. 151.

152. FOREIGN TRADE. 1 Q. Spring. 4 cr. Prerequisite, Bus. Ad. 151. (Prerequisite of Bus. Ad. 151 waived for seniors majoring in Political Science.) Theories, principles and methods of international trade. Economic resources and products of the principal countries, their chief exports and imports. Students may not receive credit for this course and the identical course Econ. 152.

153. MARKET RESEARCH AND MARKET ANALYSIS. 1 Q. Autumn. Spring. 3 cr. Prerequisite, Bus. Ad. 151 and senior standing. Techniques of planning, research, and analysis involved in the study of sales, consumer acceptance, purchasing power, and kindred market factors. Special emphasis on application, with problems drawn from data of current significance in general marketing and special-commodity fields.

155. ADVERTISING PROCEDURE. 1 Q. Autumn. Winter. Spring. 4 cr. Prerequisite, Bus. Ad. 151. This course is designed to acquaint the students with fundamental principles of advertising as they present themselves to the business executive and to afford some training in the technique of planning and directing advertising campaigns.

157. SALESMANSHIP. 1 Q. Winter. Summer. 3 cr. Prerequisite, Bus. Ad. 151. This course covers the study of sales fundamentals, sales technique and strategy. Practice is given in personal selling.

158. SALES MANAGEMENT. 1 Q. Autumn. Winter. 4 cr. Prerequisite, Bus. Ad. 151 and senior standing. The case study method is largely applied in this course. Together with Bus. Ad. 153 it is designed to cover the major problems encountered in the field of market management.

159. RETAILING. 1 Q. Autumn. Winter. Spring. 5 cr. Prerequisite, Bus. Ad. 151. Types of retail stores, location, buying, pricing, display, store selling, types of display advertising, and store costs.

160. RETAIL STORE MANAGEMENT. 1 Q. Winter. Spring. 4 cr. Prerequisite, Bus. Ad. 159. A special training course in the principles and practices of managing retail stores.

161. WHOLESALING. 1 Q. Winter. 4 cr. Prerequisite, Bus. Ad. 151. This course analyzes wholesale markets, wholesaling institutions, wholesaling functions as they apply to various commodity lines, with emphasis on purchasing and selling practices, policies as they apply to distribution methods, pricing and services.

194. PRICE AND PRICE POLICY. 1 Q. Spring. 4 cr. Prerequisite, Bus. Ad. 151, and senior standing. How firms and industries arrive at price decisions. An integration of price and value theory with practical business problems carried out through a combination of actual business cases and theoretical analysis.

COURSES NOT LISTED IN ANY SPECIFIC FIELD

165. WORKSHOP IN DISTRIBUTIVE EDUCATION. Two weeks, 44 hours per week. Spring. Summer. 1-4 cr. Prerequisite, two years business experience and consent of instructor. Problems of instruction, coordination and supervision in part-time cooperative classes in distributive education.

191. BUSINESS ADMINISTRATION SEMINAR. 1 Q. Any quarter. 2 cr. Prerequisite, senior or graduate standing. An intensive study of specific problems in Business Administration or Economics.

SECRETARIAL AND BUSINESS TEACHER TRAINING

Not more than 19 credits earned in Business Administration 20, 21, 22, 23, and 24 may be applied toward graduation by students not majoring in Business Administration, Secretarial-Home Arts, or earning a teaching major or minor in Business Administration.

20abc. BEGINNING TYPEWRITING. 3 Q. Autumn, winter, spring. 2 cr. each quarter. Prerequisite for 20a, none; for 20b, 20a or 15 words a minute in a 5 minute test; for 20c, 20b or 25 words a minute in a 10 minute test. Keyboard drills, copy work, speed and accuracy drills, letters.

21. ADVANCED TYPEWRITING. 1 Q. Autumn. Winter. Spring. 2 cr. Prerequisite, 20c or a minimum typing speed of 35 net words a minute. Letter forms, speed and accuracy drills, corrective work, business reports, rough draft, tabulation. Prerequisite for 24ab.

22abc. STENOGRAPHY. 3 Q. Autumn, winter, spring. 5 cr. each quarter. Combined shorthand and transcription practice; theory and dictation.

S22a. STENOGRAPHY. 1 Q. Summer. 2½ or 5 cr. Open to all students and teachers. Gregg Shorthand simplified. Also a demonstration class for Bus. Ad. S142 for teachers wishing to see the Simplified Method taught to beginners.

S22c. SIMPLIFIED GREGG SHORTHAND FOR TEACHERS. 1 Q. Summer. 2½ or 5 cr. Prerequisite, 22b, a speed of 60 words a minute for five minutes, or teaching experience in shorthand. Prerequisite for S142. Those having credits in 22c may receive credit in S22c.

23abc. ADVANCED STENOGRAPHY. 3 Q. Autumn, winter, spring. 5 cr. each quarter. Prerequisites, for 23a, 22c or dictation speed of 80 words a minute in a 5-minute test; for 23b, 23a or dictation speed of 100 words a minute in a 5-minute test; for 23c, 23b and 24b, or speed of 120 words a minute in shorthand. Concurrent registration in 24ab is required.

24ab. ADVANCED SHORTHAND TRANSCRIPTION. 2 Q. Winter, spring. 1 cr. each quarter. Prerequisite, minimum typing speed of 45 net words a minute or Bus. Ad. 21. Transcription at approximately two-thirds of the straight copy typing speed or about 35 words a minute with a mailable letter standard. Required of Advanced Stenography students.

25. OFFICE MACHINES PRACTICE. Calculators and Adding. 1 Q. Autumn. Winter. Spring. 2 cr. No prerequisites.

26. BEGINNING SECRETARIAL PRACTICE. 1 Q. Autumn. Winter. Spring. 2 cr. Prerequisite, 35 words a minute typing speed. Duplicating machines, Dictaphone, Ediphone and Pierce dictating and transcribing machines.

27. FILING. 1 Q. Autumn. 3 cr. This course includes Principles and Practice in Alphabetic, Numeric, Automatic, Geographic, Alphabetic Subject, Decimal Subject, and Soundex filing.

S30. ADVANCED TYPEWRITING. 1 Q. Summer. 1 cr. Prerequisite, Bus. Ad. 20c or 35 net words a minute. Improvement of skill through the use of electric typewriters.

32. METHODS OF TEACHING BUSINESS SUBJECTS. 1 Q. Autumn. 4 cr. Prerequisite, junior standing or teaching experience in business subjects; Bus. Ad. 11ab, 21, 22c, and 26. Required for teaching majors and minors in Business Administration. Objectives, methods, materials, and trends in the teaching of business subjects in high school. Demonstration lessons. Students may not receive credit for this course and Educ. 32.

100. ADVANCED SECRETARIAL PRACTICE. 1 Q. Spring. 5 cr. Prerequisite, senior standing or consent of instructor, and Bus. Ad. 23a, 21, 24a, 25, 26. Lecture and laboratory. A review, additional skill building, integration of office machines, dictation, transcription, and secretarial practice. A preparation for State Merit, Junior and Senior Civil Service. Requirements in the course are: 150 words a minute shorthand reading rate, 100 words dictation, and 35 words a minute transcription on mailable letters.

105. OFFICE MANAGEMENT. 1 Q. Autumn. Winter. Spring. Summer. 3 cr. Prerequisite, junior standing. An analysis of principles and methods of scientific office management and the effective handling of office procedure.

S106. INSTRUCTION IN OFFICE MACHINES PRACTICE. 1 Q. Summer. 3 cr. Prerequisite, junior standing, major or minor in Bus. Ad. or teaching experience and consent of instructor. Methods and procedures in teaching office machines, selection of materials and equipment, and discussion of individual teaching problems.

S107. INSTRUCTION IN SECRETARIAL PRACTICE. 1 Q. Summer. 2 cr. Prerequisite, junior standing, major or minor in Bus. Ad. or teaching experience and consent of instructor. Methods and procedures in teaching secretarial practice, duplicating the high school newspaper, teaching of filing and dictating and transcribing machines. Discussion of individual teaching problems.

S139. METHODS OF TEACHING BOOKKEEPING. 1 Q. Summer. 3 cr. Prerequisite, junior standing, Bus. Ad. 11ab and Educ. 32 or teaching experience in bookkeeping and consent of instructor. Methods and materials, testing, grading, standards, and trends in the teaching of bookkeeping. Students may not receive credit for this course and the identical course Educ. S139.

S142. PROBLEMS IN TEACHING GREGG SHORTHAND. 1 Q. Summer. 3 cr. Prerequisite, Bus. Ad. 22c, Educ. 32 or teaching experience in shorthand and consent of instructor. Methods of presentation and analysis of materials in Simplified Shorthand. Students may not receive credit for this course and the identical course Educ. S142.

S143. PROBLEMS IN TEACHING TYPEWRITING. 1 Q. Summer. 3 cr. Prerequisite, Bus. Ad. 21, Educ. 32 or teaching experience in typewriting and consent of instructor. Methods of presentation of keyboard, development of course of study, testing, grading, standards and trends in the teaching of typewriting. Students may not receive credit for this course and the identical course Educ. S143.

S149. UNIT COURSES IN BUSINESS EDUCATION. Summer. Credit variable. Prerequisite, a major or minor in Business Administration, teaching experience in commercial subjects, or consent of instructor. Several units may be taken in one or more summers, but the total credit in S149 may not exceed 10. Each unit will carry a specific designation of topic covered.

CHEMISTRY

Professors Joseph W. Howard, Richard H. Jesse (Chairman), Earl C. Lory; Associate Professors Richard E. Juday, John M. Stewart; Assistant Professor Gordon R. Shuck; Instructor Leonard M. Yates.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra and geometry. It is also recommended that the high school preparation include advanced algebra, chemistry and German.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN CHEMISTRY. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Chemistry: chemistry 11abc and 13c or 13abc, 15, 17, 4 credits of 111, 38, 102, 106, at least 5 credits from 103, 150, 160, 170, 3 credits of 113. At the time of his graduation a major student in Chemistry must have acquired a reading knowledge of German. Also college physics and mathematics through calculus. Elementary mineralogy is desirable.

Every student is required to pass a senior comprehensive examination.

FOR UNDERGRADUATES

11abc. GENERAL CHEMISTRY. 3 Q. Autumn, winter, spring. Continuous. 5 cr. each quarter. Open to students who present no entrance units and no college credit in chemistry.

13ab. INORGANIC CHEMISTRY. 2 Q. Autumn, winter. Continuous. 5 cr. each quarter. Prerequisite, one year of high school chemistry and passage of a placement examination. The fundamental laws of chemistry; properties and relations of the non-metallic and metallic elements. Students who have completed Chemistry 11abc may not receive credit for 13ab, but are eligible for credit in 13c.

13c. QUALITATIVE ANALYSIS. 1 Q. Spring. Summer. 5 cr. Prerequisite, Chemistry 11abc or 13ab. The theory and methods of qualitative analysis. Semi-micro techniques are used.

15. ADVANCED QUALITATIVE ANALYSIS. 1 Q. Winter. 5 cr. Prerequisite, Chemistry 13c. An extension of course 13c, including many of the less common elements.

17. QUANTITATIVE ANALYSIS. 1 Q. Spring. Summer. 5 cr. Prerequisite, Chemistry 13c. Introduction to quantitative gravimetric and volumetric methods.

19. ORGANIC CHEMISTRY. 1 Q. Winter. Summer. 5 cr. Prerequisite, Chemistry 11abc or 13ab. Brief survey of the field of organic chemistry. Intended primarily for students of home economics.

33ab. THE CARBON COMPOUNDS. 2 Q. Autumn, winter. Continuous. 5 cr. each quarter. Prerequisite, Chemistry 11abc or 13ab. Students who have taken Chemistry 19 will not receive full credit for this course. A detailed, systematic study of organic chemistry. Intended for chemistry, pharmacy, and pre-medical students. Students who have received credit in 101ab may not receive credit for this course.

40. **ELEMENTARY PHYSICAL CHEMISTRY.** 1 Q. Spring. 5 cr. Prerequisites, Chemistry 17, 38ab, 15 cr. of college physics. Those portions of physical chemistry which are of especial interest to prospective students of medicine.

FOR UNDERGRADUATES AND GRADUATES

102. **ORGANIC QUALITATIVE ANALYSIS.** 1 Q. Spring. 2 cr. Prerequisite, Chemistry 38ab. Systematic methods of identification of pure organic compounds and mixtures; general class reactions of organic chemistry.

103. **PHYSIOLOGICAL CHEMISTRY.** 1 Q. Spring. 5 or 6 cr. Prerequisite, Chemistry 19 or 38ab. Chemistry and metabolism of proteins, lipids, and carbohydrates; respiration; colloids.

106ab. **PHYSICAL CHEMISTRY.** 2 Q. Autumn, winter. Continuous. 10 cr. Prerequisite, Chemistry 17, 38ab, Physics 20abc, and Mathematics 23. The prerequisite in organic chemistry may be waived at the discretion of the instructor for students majoring in other departments who present two quarters of calculus and additional courses in physics. The more important methods, results, and problems of theoretical chemistry.

109. **INORGANIC INDUSTRIAL CHEMISTRY.** 1 Q. Spring. 5 cr. Prerequisite, Chemistry 13c and 38ab. The chemistry of industrial and engineering materials and the discussion of technical chemical processes. Given in alternate years.

110. **ORGANIC INDUSTRIAL CHEMISTRY.** 1 Q. Spring. 5 cr. Prerequisite, Chemistry 13c and 38ab. Given in alternate years.

111. **TECHNICAL ANALYSIS.** 1 Q. Autumn. Winter. Spring. Summer. 2-4 cr. Course may be taken two quarters for a total of not more than 4 credits. Prerequisite, Chemistry 17. Analysis of materials of commercial importance. The work is varied according to the needs of the individual.

113abc. **JOURNAL CLUB.** 3 Q. Autumn, winter, spring. 1 cr. each quarter. Prerequisite, Chemistry 17, 38ab, and a reading knowledge of German or French. Students may enter any quarter. Presentation and discussion of current journal literature by upperclassmen and the departmental staff. This course may be repeated for credit.

150. **ADVANCED INORGANIC CHEMISTRY.** 1 Q. Spring. 5 cr. Prerequisite, Chemistry 13abc (or 11abc and 13c), 17, 38ab and 102. Lectures and laboratory.

160. **ADVANCED ORGANIC CHEMISTRY.** 1 Q. Spring. 5 cr. Prerequisite, Chemistry 38ab and 102. Lectures and laboratory.

162. **ADVANCED ORGANIC LABORATORY TECHNIQUES.** 1 Q. Any quarter. 2-3 cr. Prerequisite, Chemistry 38ab. (Credit not allowed in both Chemistry 160 and 162.)

170. **ADVANCED PHYSICAL CHEMISTRY.** 1 Q. Spring. 5 cr. Prerequisite, Chemistry 106. Lectures and laboratory.

FOR GRADUATES

200. **ADVANCED COURSES AND RESEARCH.** The department is prepared to arrange for properly qualified students courses in inorganic, analytical, organic, physical, industrial chemistry, or in bio-chemistry.

ECONOMICS

Professors Roy J. W. Ely (Chairman), Albert T. Helbing, Robert C. Line; Assistant Professors Herbert R. Kroeker, John W. Swackhamer; Instructor Vernon C. Vogt.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN ECONOMICS. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Economics. Five quarters (23-25 credits) of a classical or modern language, or a reading knowledge of the language, or a minimum of 15 credits in addition to group requirements in philosophy and literature to be chosen from the following: Psychology 50, 55, one or both, and remainder of the 15 credits from English 55abc, 75abc, or 77abc.

ECONOMICS CONCENTRATION. Minimum of 50 credits in economics. Sophomore year: Economics 14ab, Political Science 17, Sociology 15 or 16. Junior and Senior years: Economics 101, 104, 111, 112, 113ab, 118. Remainder according to student's interests. History 125 and 126 and Political Science 136 may be counted toward a major in economics. Student may emphasize: general economic theory, labor economics, consumer economics,

utility economics, economics of finance, or world economics. It is recommended that the student take two or more of the following: History 21, Business Administration 11ab, Mathematics 25, Geology 10.

ECONOMICS AND SOCIOLOGY CONCENTRATION. Minimum of 60 credits. With the exception of 113b requirements are the same as for the economics concentration. Other courses required are: either Anthropology 15 or Sociology 16, Sociology 119, 120, 122, 123, 129.

FOR UNDERGRADUATES

10. **CULTURAL ECONOMICS.** 1 Q. Winter. 5 cr. Open to all students. A study of (1) man and his environment, (2) institutional development of economic society. (3) nature and elements of modern capitalism, (4) selected economic problems, and (5) economics in relation to other sciences.

14ab. **PRINCIPLES OF ECONOMICS.** 2 Q. Autumn, winter, spring, summer. Continuous. 4 cr. each quarter. 14a may be applied towards the degree of Bachelor of Science in Forestry. Prerequisite, sophomore standing.

19. **WORLD RESOURCES AND INDUSTRIES.** 1 Q. Spring. 4 cr. Prerequisite, sophomore standing. A description and analysis of the world's resources with emphasis on the economic principles involved in their appraisal, exploitation, and functioning.

FOR UNDERGRADUATES AND GRADUATES

101. **MONEY AND BANKING.** 1 Q. Autumn. Summer. 4 cr. Prerequisite, junior standing and course 14ab. A study of money and banking principles and institutions. Students having had Bus. Ad. 134 may not receive credit for this course. Students may not receive credit for this course and the identical Bus. Ad. 101.

102. **TRANSPORTATION.** 1 Q. Spring. 4 cr. Prerequisite, junior standing and course 14ab. The principles of railway, ocean and waterway, motor truck and bus, and air transportation. Students may not receive credit for this course and the identical course Bus. Ad. 102.

103ab. **PUBLIC UTILITY ECONOMICS.** 2 Q. Autumn, winter. 4 cr. each quarter. (a) Prerequisite, junior standing and course 14ab. Economics of utilities, history, regulation and rate making. (b) Prerequisite, course 103a. River basins and federal power projects. public and private power. Montana's relation to power development. Students may not receive credit for this course and the identical course Bus. Ad. 103ab.

104. **PUBLIC FINANCE.** 1 Q. Winter. Summer. 4 cr. Prerequisite, junior standing and course 14ab. Principles and problems of Federal financing. Students may not receive credit for this course and the identical course Bus. Ad. 104.

105. **STATE AND LOCAL TAXATION.** 1 Q. Spring. Summer. 4 cr. Prerequisite, junior standing and course 14ab. A study of revenues and expenditures on state and local levels. Students may not receive credit for this course and the identical course Bus. Ad. 105.

107. **CONTEMPORARY ECONOMIC PROBLEMS.** 1 Q. Spring. 4 cr. Prerequisite, junior standing and course 14ab. A study of current economic problems on the national and international levels.

109. **ECONOMICS OF CONSUMPTION.** 1 Q. Winter. Summer. 3 cr. Prerequisite, junior standing and course 14ab. An analysis of the final stages of the economic progress. Students may not receive credit for this course and the identical course Bus. Ad. 109.

110. **AGRICULTURAL ECONOMICS.** 1 Q. Autumn. 3 cr. Prerequisite, junior standing and course 14ab. The economic problems which confront the citizens of an agricultural community and the means applied or advocated as solutions.

111. **ADVANCED ECONOMICS.** 1 Q. Spring. Summer. 4 cr. Prerequisite, junior standing and course 14ab. An advanced course in the methods, concepts, and data of economics.

112. **DEVELOPMENT OF ECONOMIC THEORY.** 1 Q. Autumn. 4 cr. Prerequisite, junior standing and course 14ab. A history and analysis of economic theories, emphasizing the trends of economic thought since the days of the Greeks and Romans.

113ab. **LABOR ECONOMICS.** 2 Q. Autumn, winter. Summer. 3 cr. each quarter. Students may enter either quarter. Prerequisite, junior standing and course 14ab. (a) The origins, development and current status of the labor movement; structure, functions, ideologies, economic aspects of labor problems; (b) management-labor relations, government and labor, labor legislation, social security.

114. **INDUSTRIAL RELATIONS.** 1 Q. Spring. 3 cr. Prerequisite, junior standing and course 14ab, or consent of instructor for other than departmental majors. A study of the principles and problems that govern the relations of management and labor.

115. **ECONOMICS OF MONTANA.** 1 Q. Winter. Summer. 3 cr. Prerequisite, junior standing and course 14ab. A study of the factors and forces that determine the economic well-being of the people of Montana.

118. **SOCIAL SCIENCE METHODS.** 1 Q. Autumn. 4 cr. Prerequisite, junior standing and course 14ab. An introduction to the methods used in the studies included in the Social Sciences.

120. **COMPARATIVE ECONOMIC SYSTEMS.** 1 Q. Spring. 4 cr. Prerequisite, junior standing and course 14ab. A comparative study of the leading economic systems of the world.

123. **PRINCIPLES OF INSURANCE.** 1 Q. Autumn. 3 cr. Prerequisite, course 14ab. An introductory course covering the nature of risk, basic insurance principles, and practices in the more important branches of the insurance business. Students may not receive credit for this course and the identical course Bus. Ad. 123.

129. **INDUSTRIAL ORGANIZATION AND MANAGEMENT.** 1 Q. Autumn. Winter. Summer. 4 cr. Prerequisite, junior standing and course 14ab. An introductory survey of the principles of administration as applied to the organization and operation of manufacturing. It is the basic course in production management. It deals with such problems as: building and maintaining the internal organization; plant location and layout; materials procurement and handling; production planning and control; work simplification and methods of improvement; wage and salary administration and other human relations problems such as hiring, training, job evaluation and collective bargaining. Students may not receive credit for this course and the identical course Bus. Ad. 129.

130. **SOCIAL INSURANCE.** 1 Q. Spring. 3 cr. Prerequisite, junior standing and course 14ab. Legal, economic and social aspects of the relation of these insurances to collective bargaining and industrial unrest. Students may not receive credit for this course and the identical course Bus. Ad. 130.

133. **CORPORATION FINANCE.** 1 Q. Autumn. Spring. 5 cr. Prerequisite, junior standing and Bus. Ad. 134. The position of corporate organization in modern business; the financial policy with reference to underwriting; the financial side of organization and promotion; capitalization; earnings; surplus; insolvency; receivership and reorganization. Problems and methods of social control. The financial organization of particular corporations. Students may not receive credit for this course and the identical course Bus. Ad. 133.

151. **MARKETING.** 1 Q. Autumn. Winter. Spring. Summer. 5 cr. Prerequisite, junior standing and course 14ab. The prevailing methods of marketing as they apply to consumer goods, producer goods and raw materials. A study of marketing institutions, marketing functions, merchandising, price policies, and government regulations. Students may not receive credit for this course and the identical course Bus. Ad. 151.

152. **FOREIGN TRADE.** 1 Q. Spring. 4 cr. Prerequisite, Bus. Ad. 151. Theories, principles and methods of international trade. Economic resources and products of the principal countries, their chief exports and imports. Students may not receive credit for this course and the identical course Bus. Ad. 152.

155. **MONETARY THEORY, CREDIT AND PRICES.** 1 Q. Winter. 4 cr. Prerequisite, junior standing and course 101, or consent of the instructor. A study of the relationship between money and credit and economic activity.

156ab. **BUSINESS CYCLES AND BUSINESS FORECASTING.** 2 Q. Winter, 4 cr.; Spring, 2 cr. Prerequisite, Bus. Ad. 134 or Economics 101 and senior standing. History, measurement, and analysis of fluctuations in business activity; factors influencing employment, production, prices and national income; problems of interpretation and forecasting; consideration of policies intended to stabilize business conditions. 156a is a prerequisite for 156b. Students may not receive credit for this course and the identical course Bus. Ad. 156ab.

161. **WORLD ECONOMIC ORGANIZATIONS.** 1 Q. Spring. 3 cr. Prerequisite, junior standing and course 14ab, or consent of the instructor. Origin, organization, functions, problems, and future of international economic organizations.

190. **ADVANCED PROBLEMS.** Any quarter. 1-2 cr. Prerequisite, senior standing and consent of instructor.

195. **SEMINAR IN ECONOMICS.** 1 Q. Any quarter. 1-2 cr. Prerequisite, 16 credits in economics, junior standing and consent of instructor. Maximum of six credits may be counted toward a major.

FOR GRADUATES

201. **GRADUATE RESEARCH.** Any quarter. Credit variable. Prerequisite, graduate standing.

EDUCATION

Professors Walter R. Ames, Linus J. Carleton (Acting Dean), Herbert Wunderlich; Associate Professors James E. Short, Leo Smith; Assistant Professors Benjamin R. Frost, Henry W. Knapp, John Staehle.

Staff members of Cooperating Departments and Schools Who Offer Courses in Education: Professors Olaf J. Bue, Harold Chatland, Stanley M. Teel, Brenda Farrell Wilson; Associate Professors Charles F. Hertler, Thora Sorenson; Assistant Professors Helen Hollandsworth; Instructor Agnes V. Boner.

GENERAL INFORMATION. The School of Education at Montana State University is fully accredited by the American Association of Colleges of Teacher Education and by the Northwest Association of Secondary and Higher Schools.

It prepares students for teaching, supervising, or administering in the public schools; or for carrying on educational research.

Students who are preparing to teach particular subjects, either in junior or senior high schools, should ordinarily major in the principal subject to be taught; those preparing for counseling, supervising, administering, or research work usually major in education.

REQUIREMENTS FOR ADMISSION. Pre-education students should consult with their advisers as to courses to be taken in their freshman and sophomore years. Introduction to Psychology, while it does not count toward the Education major, is prerequisite to all courses in Education and should be taken in the freshman or sophomore year.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN EDUCATION. In addition to the general requirements for graduation listed earlier in the catalog candidates for the degree of Bachelor of Arts in Education must earn a minimum of 40 credits in Education, including the following required courses totaling 29 credits: Education 25abc, 26 (9 credits), 152, and 140 or their equivalents, and elective courses totaling 11 credits, selected from other courses in Education.

SECONDARY STATE CERTIFICATE. Montana State University recommends its graduates who meet state certification requirements to the State Department of Public Instruction. All such recommendations are approved by the Dean of the School of Education. The Secondary State Certificate meets the North Central and Northwest Accrediting Association's requirements. However, students who expect to teach in states other than Montana should investigate specific requirements because they differ in various states. Academic and professional requirements for Secondary State Certificates to teach in fully accredited high schools of Montana are as follows:

1. A Bachelor's Degree from Montana State University, or other approved institution of higher education.
2. Twenty-four or more quarter credits in education designated by the Dean of the School of Education. (See below.)
3. A teaching major of 45 or more quarter credits in a field taught in high school.
4. A teaching minor of 30 or more quarter credits in an additional field taught in high school.
5. Adjustment in the above minimum credit requirements may be made for the combination of high school and University work in foreign language and in mathematics.
6. The major or minor subject matter fields may include English, classical or modern languages, commercial work, journalism (minor only), mathematics, biological science, physical science, health and physical education, history and political science, economics and sociology, home economics, fine arts, music, and speech (minor only).

Students who expect to be certified to teach are required to file with the Dean of the School of Education at the beginning of their junior year a statement of their intended major and minor fields of specialization, which should include one teaching field of at least 45 quarter credits and one of at least 30 quarter credits. Each candidate for the Certificate who has not already received credit in Student Teaching (Educ. 26) will, at the beginning of the junior year, be assigned a definite quarter of the senior year in which he must register for that course.

Students who began their work on teaching certificate requirements before June, 1944, should consult with the Dean of the School of Education regarding the possibility of completing the requirements under the former plan of three teaching minors with a minimum of 25 credits in each.

Candidates for the teaching certificate must submit an application blank supplied by the State Department of Public Instruction, which includes a signed certificate of health and an oath of allegiance. Transcripts of all college work completed by the applicant must be submitted with the application.

SEQUENCE OF CERTIFICATION COURSES IN EDUCATION. The courses required for the teaching certificate should be taken both by Education majors and by non-majors in the following sequence:

Freshman year: Psych. 11. A prerequisite—not counted among the 24 credits required for the Secondary Certificate.

Sophomore or

Junior year: Educ. 25b, 4 credits; Educ. 25a, 4 credits.

Junior year: Educ. 25c, 4 credits.

Senior year: Educ. 26, a minimum of 5 credits is required.

Variation from this pattern of the required courses is permissible only with the approval of the Dean of the School of Education.

In addition to the 17 credits of Education courses listed above, the student must take 7 credits of electives to make up the required total of 24. A special methods course in the student's major or minor teaching field is recommended. Only one methods course, however, may be included in the 24 credits in Education required for the Secondary Teaching Certificate. A second quarter of Educ. 26 and Educ. 140 are also recommended.

FOR UNDERGRADUATES

25a. **EDUCATIONAL PSYCHOLOGY.** 1 Q. Autumn. Winter. Spring. Summer. 4 cr. Prerequisite, sophomore standing and Psychology 11. (It is recommended that 25b precede 25a.) Emphasis on psychological foundations of learning; individual differences; pupil growth and development; mental hygiene. Students may not receive credit for this course and Psych. 25a.

25b. **INTRODUCTION TO SECONDARY EDUCATION.** 1 Q. Autumn. Winter. Spring. Summer. 4 cr. Prerequisite, sophomore standing and Psychology 11. An overview of the American public school and its purposes. The development, structure, support and control of schools locally and nationally. Analysis of problems, issues, and trends in education today. Study of teaching as a profession.

25c. **SECONDARY SCHOOL TEACHING PROCEDURES.** 1 Q. Autumn. Winter. Spring. Summer. 4 cr. Prerequisite, junior standing and Education 25ab. Teaching procedures and materials; selection of content; lesson planning; testing and evaluation; emphasis on student participation using techniques generally applied in classroom instruction in high schools today.

26. **STUDENT TEACHING.** 1 Q. Autumn. Winter. Spring. Summer. Credit variable. Prerequisite, senior standing and Education 25abc. A minimum of 5 hours is required for certification; 9 hours for the B.A. in Education. Student Teaching may be elected for one or more quarters, but the total may not exceed 15 credits. Students at the time they take their first course in Education must submit to the Dean of the School of Education an Application for Student Teaching in order that the quarter or quarters in which they are to do their student teaching may be assigned. Course includes: observation of classroom teaching; preparation of lesson plans; teaching under supervision of critic teachers and staff of the School of Education in cooperation with Missoula County High School, the Missoula city schools, and other high schools in Western Montana; and weekly meetings with the University supervisor.

70. **LITERATURE FOR ADOLESCENTS.** 1 Q. Autumn. Summer. 3 cr. Prerequisite, junior standing. For English major and minor juniors and seniors. The course emphasizes wide reading and development of appreciation in the fields of literature for the junior and senior high schools. Traditional and modern literature will be studied and evaluated. The course will give a basis for the selection of prose and poetry suitable for adolescents.

FOR UNDERGRADUATES AND GRADUATES

S110. **SAFETY EDUCATION AND DRIVER TRAINING.** 1 Q. Summer. 3 cr. Prerequisite, senior standing and consent of instructor. Designed to prepare teachers for Safety Education and Driver Training courses in the high schools. Includes supervised experience in teaching driving, as well as theoretical aspects of driver education. Emphasis on general safety education. Course carried on in cooperation with the Montana Highway Patrol.

S111. **AIR EDUCATION WORKSHOP.** 1 Q. Summer. Credit variable. Prerequisite, junior standing and consent of Dean of the School of Education. A workshop for elementary and secondary teachers sponsored jointly by the Montana Aeronautics Commission, the State Department of Public Instruction, and the School of Education, Montana State University. Objective: in-

tensive study of the air age and its impact on society and the school. Procedures: lecture and discussion sessions led by the Workshop Director and resource personnel drawn from federal, state, and local air groups; study of air age materials including books, pamphlets, periodicals, and audio-visual aids; development of air education units for use in elementary or secondary classes; field work including demonstrations of uses of modern aircraft.

S115. CLASSROOM USE OF RADIO AND TELEVISION. 1 Q. Summer. 2 cr. Prerequisite, junior standing, Education 26 or teaching experience; consent of instructor. Effective classroom use of live broadcasts and transcriptions; use of radio and television techniques as culminating activities or in preparation of special school programs. Some laboratory experience in preparation and use of radio and television skits. Suitable for either elementary or secondary school teachers.

S118. TEACHING OF CONSERVATION IN GRADES 7-12. 1 Q. Summer. 5 weeks, 3 cr.; as part of the Conservation Education Workshop. Prerequisite, junior standing; Education 25c or equivalent and General 100 or concurrent registration therein; consent of instructor.

This course will be offered as an integral part of the Conservation Education Workshop. It will be handled as a workshop with general committee sessions and individual projects. Current conservation programs and materials will be analyzed. Development of materials for use in teaching conservation in Montana schools. Limited to students enrolled in the workshop.

119. MENTAL HEALTH IN THE CLASSROOM. 1 Q. Any quarter. 4 cr. Prerequisite, Psychology 116; or Education 25a, 140, and 152; or Education 25a and extensive teaching experience; consent of instructor. Offered by extension only. This course is designed for in-service training of classroom teachers. Whenever possible it will be given by the staff of one of the State Mental Hygiene Clinics. Students may not receive credit for this course and the identical course Psychology 119.

S121. SUPERVISION AND TEACHING OF THE LANGUAGE ARTS. 1 Q. Summer. 2-4 cr. Prerequisite, junior standing, teaching experience, consent of instructor. Analysis of current problems, trends and research findings pertinent to the development of an effective language arts program in grades 1-8. Will deal primarily with oral and written composition, spelling and handwriting. Not a course in teaching of reading or literature.

S122. SEMINAR IN CONSERVATION EDUCATION. Summer. May be taken for three credits if taken concurrently with Education S118 or for six credits if Education S118 and General 100 or equivalents have been taken. Prerequisite, junior standing, General 100, and Education S118 or concurrent registration therein, consent of instructor. Students will work in seminar, designing, selecting, and evaluating materials for the teaching of Conservation Education, or they may work out individual projects.

132. SECONDARY SCHOOL ADMINISTRATION. 1 Q. Winter. Summer. 3 cr. Prerequisite, junior standing and teaching experience. Study of problems involved in the daily administration of the American high school; definition of tasks, organization of staff, scheduling of classes, enrollment process, handling of supplies, management of extra-curricular activities, records and reports, teacher participation in administration, etc. Analysis of research and experience.

134. SCHOOL SUPERVISION. 1 Q. Spring. 4 cr. Summer, 2-4 cr. Prerequisite, Education 25a and teaching experience. Instruction—its quality, technique, rating, and improvement; discipline, supervised study, and other problems bearing upon the instructional side of school work.

140. EDUCATIONAL AND VOCATIONAL GUIDANCE. 1 Q. Autumn. Winter. Spring. 4 cr. Summer, 2-4 cr. Prerequisite, junior standing; Education 25c or extensive teaching experience. Orientation to organization and administration of school guidance programs.

141. ORGANIZATION AND ADMINISTRATION OF THE SCHOOL LIBRARY. 1 Q. Winter. 4 cr. Summer, 2-4 cr. Prerequisite, junior standing and teaching experience. Designed for teachers without library training who serve as part-time librarians in school libraries. Objectives of school library service, simple library routines and procedures, integration of library and instruction, library equipment and costs.

145. AUDIO-VISUAL AIDS. 1 Q. Autumn. Spring. Summer. 3 cr. Prerequisite, junior standing and Education 25c or teaching experience. A practical course in effective instructional use of a wide variety of aids—pictures, strip films, slides, moving pictures, exhibits, etc. Will familiarize teachers with the actual operation of film projectors and other similar equipment. Primary emphasis will be placed on classroom use rather than the technical aspects of the subject.

148. PROBLEMS IN SPECIAL EDUCATION. 1 Q. Autumn. Summer. 2-4 cr. Prerequisite, junior standing, 12 credits in Education or Psychology and consent of instructor. Diagnostic and remedial techniques and specialized

procedures in teaching the handicapped and slow learner; some attention given to the bright and accelerated learner.

150. EDUCATIONAL ADMINISTRATION. 1 Q. Autumn. Winter. Summer. 4 cr. Prerequisite, junior standing; teaching experience, Education 26, or concurrent registration in 26; consent of instructor. Registration restricted to education majors, teachers with extensive experience and administrators. Administrative relationships at federal, state, and local levels; organization of local Boards of Education; duties of county and city school superintendents.

152. EDUCATIONAL MEASUREMENT. 1 Q. Autumn. Winter. Spring. Summer. 4 cr. Prerequisite, junior standing, Education 25c or equivalent, consent of instructor. Basic principles regarding measurement of educational outcomes; application of elementary statistical techniques to educational data; analysis of standardized tests; construction and use of teacher-made tests.

153. HEALTH EDUCATION. 1 Q. Spring. Summer (even years). 4 cr. Open to junior students. Required of all teaching majors and minors in Health and Physical Education. The aims, objectives, methods and possible curricula for teaching health education in the junior and senior high schools. Students may not receive credit for this course and the identical course H. & P.E. 153.

154. SEMINAR. Any quarter. Credit variable. Prerequisite, senior standing, Education 25c and consent of instructor. This course may be elected for 2 or more quarters for a total of not more than 10 credits. Group analysis and discussion of individual projects. Application to student's specific teaching situation where possible.

155. REMEDIAL READING. 1 Q. Autumn. Winter. Summer. 3 cr. Prerequisite, junior standing and teaching experience. Diagnosis and treatment of reading difficulties in elementary grades. Techniques and materials designed for classroom teachers, remedial specialists, and for principals who wish to set up a remedial program.

156. SCHOOL FINANCE. 1 Q. Spring. Summer. 3 cr. Prerequisite, senior standing and Education 150 or extensive experience as a principal or superintendent, consent of instructor. Sources of school revenue. Relative costs, inequalities, legal limitations and proper expenditures.

158. EDUCATIONAL SOCIOLOGY. 1 Q. Winter. Summer. 3 cr. Prerequisite, junior standing and Education 25abc. The role of education in modern social, economic and political life; the school as a social institution; problems of American life which affect and are affected by the work of the public schools.

159. THE JUNIOR HIGH SCHOOL. 1 Q. Winter. Summer. 4 cr. Prerequisite, senior standing and Education 25c. Objectives of the junior high school, organization, class scheduling, curriculum, extra-curricular activities, etc.

160. ELEMENTARY SCHOOL ADMINISTRATION. 1 Q. Winter. 4 cr. Summer, 2-4 cr. Prerequisite, senior standing and teaching experience. Administrative problems of the elementary school principal, organization of staff, grouping of pupils, office routine, pupil guidance and adjustment, utilization of building, supplies, custodial service, marking, promotion, reports to parents, community relationships, etc.

S161. CURRICULUM WORKSHOP. 1 Q. Summer. Credit variable to maximum of 8. Prerequisite, senior standing and consent of Dean of School of Education. Not more than 10 credits earned in workshop (course S161) may be applied to an undergraduate or a graduate degree. This course is organized as the Curriculum Revision Center for Montana secondary school courses.

162. PROBLEMS IN ELEMENTARY EDUCATION. 1 Q. Spring. 4 cr. Prerequisite, junior standing and Education 25c. The elementary school, its history, organization, management, curriculum, types of teaching; its special problems; the kindergarten and other features with which supervisors should be acquainted.

S164. SUPERVISION OF INSTRUCTION IN THE ELEMENTARY SCHOOL. 1 Q. Summer. 2-4 cr. Prerequisite, senior standing and teaching experience. Supervisory problems of the elementary school principal, professional stimulation of staff, clarification of objectives, curriculum planning, unit teaching, evaluation of outcomes, use of community resources in elementary school.

166. HISTORY OF EDUCATION. 1 Q. Autumn. 4 cr. Summer. 2-4 cr. Prerequisite, senior standing and Education 25c or teaching experience. Historical backgrounds of present-day problems in education. History of educational thought, school organization and support, curriculum development and teaching procedures.

167. OCCUPATIONAL INFORMATION. 1 Q. Winter. 3 cr. Summer. 2-4 cr. Prerequisite, Education 140, or equivalent. Major occupational

trends, sources of occupational information, techniques for conducting local occupational surveys, use of occupational information in group guidance.

168. TECHNIQUES OF COUNSELING. 1 Q. Autumn. Winter. 4 cr. Summer. 2-4 cr. Prerequisite, Education 140 and 152 or consent of the instructor. Practice and analysis of the more commonly used counselor tools. Major areas studied include records, placement and follow up, tests and inventories, check lists, interviewing use of referral resources.

S169. SEMINAR IN TESTING AND GUIDANCE. 1 Q. Summer. Credit variable to maximum of 4, depending upon duration of workshop. Prerequisite, junior standing, teaching experience, Education 140 or equivalent and consent of instructor. Concurrent registration in 140 will be accepted in exceptional instances. Only persons with responsibility for guidance and counseling programs allowed to enroll.

171. ELEMENTARY CURRICULUM. 1 Q. Autumn. 4 cr. Summer. 2-4 cr. Prerequisite, senior standing and teaching experience. Survey of elementary school curriculum; major trends in course content, grade placement, organization of materials and evaluation of outcomes. Of particular value to school administrators lacking training in elementary education.

S175. SUPERVISION AND TEACHING OF ARITHMETIC. 1 Q. Summer. 2-4 cr. Prerequisite, junior standing, Education 162 or equivalent, or extensive teaching experience. Analysis of curriculum trends, instructional materials, research, supervisory techniques relevant to a modern elementary school arithmetic program.

S176. SUPERVISION AND TEACHING OF SOCIAL STUDIES IN THE ELEMENTARY SCHOOL. 1 Q. Summer. 2-4 cr. Prerequisite, junior standing, and Education 162 or equivalent or extensive teaching experience. Study of modern philosophy of social studies instruction in grades 1-6 with emphasis upon curriculum trends, instructional practices, teacher-pupil planning and evaluation, unit organization of instruction, integration with other areas, and use of community resources.

177. SECONDARY CURRICULUM. 1 Q. Spring. Summer. 4 cr. Prerequisite, senior standing, Education 26, or teaching experience. Survey of secondary school curriculum; organization of materials; administration, evaluation, and trends in curriculum development.

S178. SUPERVISION AND TEACHING OF ELEMENTARY READING. 1 Q. Summer. 2-4 cr. Prerequisite, junior standing and Education 162 or equivalent, or extensive teaching experience. Intensive analysis of the characteristics of a good reading program in grades 1-6: objectives, methods and materials of instruction, evaluation, relationship to other work. Supervisory techniques applied specifically to the improvement of reading instruction.

S179. SUPERVISION AND TEACHING OF SCIENCE IN THE ELEMENTARY SCHOOL. 1 Q. Summer. 2-4 cr. Prerequisite, junior standing and Education 162 or equivalent or extensive teaching experience; consent of instructor. This course will consider problems of curriculum planning, grade placement of content, selection of suitable instructional materials and use of effective techniques in a well-rounded science program in the elementary school. Will deal primarily with work in grades 4-8.

S181. SCHOOL LIBRARY CATALOGUING AND BOOK SELECTION. 1 Q. Summer. 3 cr. Prerequisite, Education 141 or equivalent, consent of instructor. Designed as second level course for teacher-librarians, emphasizing effective technique in cataloguing and book selection. Considerable practice in working with materials of the type commonly found in school libraries.

S182. REFERENCE AND BIBLIOGRAPHY FOR THE SCHOOL LIBRARIAN. 1 Q. Summer. 3 cr. Prerequisite, Education 141 and S181 or equivalent, consent of instructor. An advanced course in librarianship. Study of basic reference books and other bibliographies most frequently used to answer reference questions in libraries. Some attention to reference methods, organization, devices, measurement, citation, and bibliographic form.

S184. EVALUATION OF LIBRARY MATERIALS AND SERVICES. 1 Q. Summer. 3 cr. Sources of information about library materials, criteria of evaluation for selection of books and periodicals. Procedures for reader's services and techniques of assisting pupils and teachers in the use of the library and of arousing reader interest and developing self reliance.

188. COUNSELING PRACTICE. 1 Q. Any quarter. 2-4 cr. Prerequisite, Education 168 or equivalent and consent of instructor. Qualified students will be given counseling and testing experience in neighboring Montana public schools. Case work under supervision. Weekly seminar discussion.

FOR GRADUATES

201. RESEARCH. Any quarter. Credit variable to maximum of 15. Prerequisite, graduate standing in Education and consent of instructor.

S233. SEMINAR IN STUDENT PERSONNEL. 1 Q. Summer. 3 cr. Prerequisite, graduate standing, advanced training and experience in the student personnel field, consent of instructor. Analysis of philosophical considerations, significant research findings, and current problems and trends in the student personnel field, with principal emphasis upon applications in the secondary schools.

S245. PRINCIPLES AND PROBLEMS OF BUSINESS EDUCATION. 1 Q. Summer. 3 cr. Prerequisite, graduate standing, a major or minor in business or teaching experience in business subjects. A study of the curriculum, basic principles, practices, problems and trends in business education.

S251. PLANNING THE SCHOOL BUILDING PROGRAM. 1 Q. Summer. 2-4 cr. Prerequisite, graduate standing, Education 150 or equivalent and consent of instructor. Analysis of effective administrative procedures in determining building needs, selecting a site, carrying through a bond issue, planning the building and carrying the project through to completion. Not a technical course in design and materials.

S253. PERSONNEL ADMINISTRATION. 1 Q. Summer. 3 cr. Prerequisite, graduate standing, Education 150, administrative experience, consent of instructor. Problems related to teaching and other personnel (not student) in elementary and secondary education selection, in-service training, assignment, promotion, tenure, welfare, and supervision.

254. SEMINAR. Any quarter. Credit variable. Prerequisite, graduate standing and consent of instructor. May be elected for 2 or more quarters for a total of not more than 10 credits. Independent work or group analysis of problems in specific areas of education. Transcripts will indicate project title or area of study.

265. ADVANCED EDUCATIONAL PSYCHOLOGY. 1 Q. Winter or spring. 4 cr. Summer. 3 cr. Prerequisite, Education 25a, graduate standing and teaching experience. Growth and development of children and youth, intelligence and special aptitudes, appraisal and diagnosis of mental development, learning process, personality adjustment—a systematic analysis of the field of educational psychology at the graduate level.

S272. PHILOSOPHY OF EDUCATION. 1 Q. Summer. 2-4 cr. Prerequisite, graduate standing in Education. Analysis of leading philosophical points of view in education; concepts of the individual, society, the educative process and the role of education in a democracy.

S278. SEMINAR IN SOCIOLOGICAL FOUNDATIONS OF EDUCATION. 1 Q. Summer. Credit variable. Prerequisite, Education 158 or S272 or their equivalent, graduate standing; consent of instructor. Designed to trace in some detail the background of education in its broadest sense as found in religion, the economic system, the family, the estate and other social institutions.

285. METHODS OF EDUCATIONAL RESEARCH. 1 Q. Autumn or winter. Summer. 4 cr. Prerequisite, graduate standing in the School of Education. Research problems; their statement, organization, techniques, tabulation of materials. Mathematical concepts necessary for interpretation of research data and conclusions. Required for a Master's degree in Education; candidates are urged to take this course in first quarter of graduate program.

INDEPENDENT WORK. Time and credit to be arranged. Prerequisite, consent of instructor. In a limited number of courses instruction may be given by individual conference.

SPECIAL METHODS COURSES IN SECONDARY TEACHING. Only one of the following Special Methods courses may be used in meeting the minimum professional education requirements of 24 credits for the Secondary State Certificate. If students desire to take more than one of them, they may do so, but must then offer more than 24 education credits. In many instances this will be advisable. These courses are offered in the School of Education by staff members of other departments and schools of the University.

32. METHODS OF TEACHING BUSINESS SUBJECTS. 1 Q. Autumn. 4 cr. Prerequisite, junior standing or teaching experience in business subjects; Business Administration 11ab, 21, 22c, and 26. Required for teaching majors and minors in Business Administration. Objectives, methods, materials, and trends in the teaching of business subjects in high school. Demonstration lessons. Students may not receive credit for this course and the identical course Business Administration 32.

102. METHODS OF TEACHING SPANISH. 1 Q. Spring. Summer. 3 cr. Prerequisite, Spanish 17. May be taken concurrently with 17. Required for teaching majors and minors in Spanish. Fundamental principles, concepts, objectives, and methods involved in the teaching of Spanish.

103. METHODS OF TEACHING FRENCH. 1 Q. Spring. Summer. 3 cr. Prerequisite, French 119. May be taken concurrently with 119. Re-

quired for teaching majors and minors in French. Fundamental principles, concepts, objectives, and methods involved in the teaching of French.

105. METHODS OF TEACHING ENGLISH. 1 Q. Winter. 4 cr. Prerequisite, senior standing. Required for teaching majors and minors in English. Objectives, methods, materials, including all phases of English library reading and book ordering, organization of units and laboratory practice in teaching.

S117. METHODS OF TEACHING SECONDARY SCIENCE. 1 Q. Summer. 2-4 cr. Prerequisite, junior standing, Education 25abc, and a minor in one of the science fields. Systematic analysis of problems involved in development of an adequate high school science program; curriculum, methods, instructional materials, laboratory procedures.

123abc. SCHOOL MUSIC. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Summer, 1½-3 cr. Prerequisite, Music 31a or concurrent registration. (a) Music methods and materials for elementary schools including child voice, rhythmic development, rote singing. (b) Music methods and materials for junior high school grades. (c) Music methods and materials for senior high schools including bands, orchestras, glee club, chorus, problems of community music, operettas, festivals. Students may not receive credit for this course and the identical course Music 123abc.

(Music 151 and 152 will also be accepted as special methods courses in Education.)

126. SCHOOL PUBLICATIONS. 1 Q. Spring. Summer. 3 cr. Prerequisite, junior standing and consent of instructor. A course for students who plan to teach journalism courses in high schools or act as advisers to school publications. Students may not receive credit for this course and the identical course Journ. 126.

131. ALGEBRA FOR TEACHERS. 1 Q. Winter, 4 cr. Summer, 2-4 cr. Prerequisite, Mathematics 110 or consent of the instructor. The processes of elementary algebra and arithmetic considered from a mature point of view for the teacher of high school algebra. Students may not receive credit for this course and the identical course Mathematics 131.

132. GEOMETRY FOR TEACHERS. 1 Q. Winter. 5 cr. Prerequisite, consent of the instructor. The subject matter of high school geometry compared with that of other geometries. Students may not receive credit for this course and the identical course Mathematics 132.

135. METHODS OF TEACHING PHYSICAL EDUCATION. 1 Q. Autumn. Summer (even years). 4 cr. Prerequisite, junior standing or consent of instructor. Required of all teaching majors and minors in Health and Physical Education. Consideration of materials suitable for the junior and senior high school programs. Demonstrations and practice in techniques of teaching activities using mass class and squad organization; techniques of lesson planning. Students may not receive credit for this course and the identical course H. & P.E. 135.

S139. PROBLEMS IN TEACHING BOOKKEEPING. 1 Q. Summer. 3 cr. Prerequisite, junior standing; Business Administration 11ab and Education 32 or teaching experience in bookkeeping and consent of instructor. Methods and materials, testing, grading, standards, and trends in the teaching of bookkeeping. Students may not receive credit for this course and the identical course Bus. Ad. S139.

S142. PROBLEMS IN TEACHING GREGG SHORTHAND. 1 Q. Summer. 3 cr. Prerequisite, Business Administration 22c, Education 32 or teaching experience in shorthand and consent of instructor. Methods of presentation and analysis of materials in Simplified Shorthand. Students may not receive credit for this course and the identical course Bus. Ad. S142.

S143. PROBLEMS IN TEACHING TYPEWRITING. 1 Q. Summer. 3 cr. Prerequisites, Business Administration 21, Education 32 or teaching experience in typewriting and consent of instructor. Methods of presentation of keyboard, development of course of study, testing, grading, standards and trends in the teaching of typewriting. Students may not receive credit for this course and the identical course Bus. Ad. S143.

S149. UNIT COURSES IN BUSINESS EDUCATION. Summer. Credit variable. Prerequisite, a major or minor in Business Administration, teaching experience in commercial subjects, or consent of instructor. Several units may be taken in one or more summers, but the total credit in S149 may not exceed 10. Each unit will carry a specific designation of topic covered.

163. METHODS OF TEACHING HOME ECONOMICS. 1 Q. Winter. Spring. 4 cr. Prerequisite, Education 25ab. The fundamental principles of organization, unit planning, and method of presentation of subject matter. This course introduces the student to the problems of teaching. Students may not receive credit for this course and Home Economics 163.

S172. IMPROVEMENT OF READING IN SECONDARY SCHOOLS. 1 Q. Summer. 2-4 cr. Prerequisite, junior standing and teaching experience. Systematic study of both the development and remedial work-type

reading programs for pupils in the middle and upper grades, as well as high school students. Basic principles, teaching techniques, materials of instruction and supervisory practices involved in the program for development of reading ability and basic study skills. Not a course in the teaching of literature.

173. METHODS OF TEACHING SOCIAL STUDIES IN SECONDARY SCHOOLS. 1 Q. Autumn or winter. 4 cr. Summer, 2-4 cr. Prerequisite, junior standing and Education 25c. Systematic analysis of problems involved in the teaching of the social studies in junior and senior high schools—curriculum, teaching techniques (particularly the development and presentation of units of instruction) and specific materials for use in the classroom.

183. ADVANCED PROBLEMS IN TEACHING HOME ECONOMICS. 1 Q. Spring. Summer, 3 cr. Prerequisite, Education 163 and 26, or consent of instructor. Consideration of problems and procedures dealing with satisfactory homemaking education in the upper grades and in high school. Students may not receive credit for this course and the identical course Home Economics 183.

COURSE REQUIREMENTS IN TEACHING MAJORS AND MINORS. Students who wish to qualify for the Secondary State Teaching Certificate must, according to the regulations of the State Department of Public Instruction, complete a minimum of 45 credits in a major teaching field and a minimum of 30 credits in a minor teaching field. In case the patterns of teaching majors and minors are changed by the State Department of Public Instruction, the University reserves the right to modify accordingly its requirements.

Major teaching requirements are not necessarily the same as major departmental requirements for graduation. The student might qualify for the state certificate in a subject field by earning 45 credits, but still not meet requirements for graduation as a major in a University department. On the other hand, students who graduate with a major in a subject field taught in Montana high schools will ordinarily qualify for the certificate, provided other requirements are met.

A listing of the course requirements for teaching majors or minors in each subject field may be secured from the Registrar or from the School of Education.

ENGLISH, SPEECH and DRAMA

Professors Rufus A. Coleman, Edmund L. Freeman, Bert B. Hansen, Harold G. Merriam (chairman); Associate Professors Walter L. Brown, Nan C. Carpenter, Mary B. Clapp, Leslie A. Fiedler, Ralph Y. McGinnis, John E. Moore; Assistant Professors Walter Van Tilburg Clark, Vedder M. Gilbert, LeRoy W. Hinze; Instructors Agnes V. Boner, Bernard Heringman, Henry V. Larom, Edward Ohanian, Abe Wollock.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN ENGLISH. In addition to the general requirements for graduation listed earlier in the catalog the student seeking the degree of Bachelor of Arts with a major in English must complete 45 or more credits in the department, including Speech and Drama, in accordance with the schedules on the following pages. The required courses in English are listed in the schedules given below, which are designed for students of different types of needs and interests. By the beginning of his junior year the student should have decided definitely which of the schedules he is to follow. F.A. 31abc; Music 35abc; Psych. 14; Psych. 52ab; Psych. 55; at least two quarters of study in sociology and in history, especially 13abc, are strongly recommended. A reading knowledge in the literature of some foreign language, classical or modern, is required. See also Speech and Drama.

Senior comprehensive examinations must be taken by all students who do major work in English or in Speech or in Drama.

Seniors in Schedules A and B will present for graduation an undergraduate thesis; in Schedule D, a body of creative writing.

Candidates for honors will take the senior comprehensive examinations and an additional examination in a special field of study. Any incoming senior who has a university index in his studies of 3.00 may announce his desire to become a candidate for honors.

REQUIRED IN ALL SCHEDULES:

Freshman Year: Eng. 12abc.

Sophomore Year: Eng. 30a or b.

SCHEDULE A is planned to give the prospective teacher of English in high schools and in adult education an understanding of the basic relations between literature and human life and a training in the techniques required of the successful teacher of English.

Sophomore Year: Eng. 59abc (two quarters). Junior and Senior Years: Educ. 105; Eng. 169abc (two quarters); 171abc (two quarters); 174bc; 191; 192 (one quarter, preferably Chaucer); 199 (two quarters, 4 cr.); Journ. 126. Journ. 33 is strongly recommended. The student should also prepare himself to handle speech and drama in the high school.

SCHEDULE B is designed for those students who look forward to graduate study in English to enable them to teach in colleges, universities, and schools providing adult education.

Sophomore Year: Eng. 57b, 59abc (two quarters).

Junior and Senior Years: Eng. 169abc (two quarters); 171abc and 174abc (three quarters); 187; 191; 192 (one quarter); 199 (two quarters, 4 cr.)

SCHEDULE C has been prepared for students who desire a purely liberal education with possible additional training in a professional field. The studies provide contact with the meaningful thought and emotion of the past and of the present, particularly in the humanities, and constitute an excellent approach to cultural maturity. The student may add training in any field, especially in librarianship, secretarial work, social service, personnel work, the arts, history, and languages.

Sophomore Year: Eng. 19 (or two quarters of 169abc, in the junior year); 59abc (two quarters); 57b or c.

Junior and Senior Years: Eng. 75abc (two quarters); 77abc (two quarters); 169abc (two quarters, or 19 in the sophomore year); 174abc (two quarters); 191.

SCHEDULE D is designed for students whose major interest is writing. It aims to help the student find himself and free his capacities for expression. The writing done comprises all kinds of writing other than for newspapers, although it is especially adapted to students who wish to develop abilities in the writing of fiction, poetry, essays, drama.

Sophomore Year: Eng. 19 (or two quarters of 169abc, in the junior year); 57abc (one quarter).

Junior and Senior Years: Eng. 70 or 72abc (at least 6 credits); 75abc (one quarter); 96 (two quarters); 160abc (at least 3 credits); 169abc (two quarters or 19, in the freshman or sophomore year); 171abc and 174abc (three quarters), 187, 191; Journ. 33. Journ. 34 is strongly recommended.

COMPOSITION, LANGUAGE AND LITERATURE

FOR UNDERGRADUATES

A. PREPARATORY COMPOSITION. 1 Q. Autumn. Winter. No credit. Sub-freshman course designed to meet the needs of freshmen who fail to establish an acceptable college performance in the English placement examination at the time of entrance.

NOTE: Either English 11ab (10 credits) or 12abc (9 credits) is required of all students in the freshman year except that those who place high in the examination given at the time of entrance may be exempted from 11a or 12a. Majors in the department complete the 12abc sequence. A student must complete the sequence he begins, i.e., he may not begin with English 11a and then change to 12b, etc. (See departmental or school curricula.)

11ab. FRESHMAN COMPOSITION. 2 Q. Autumn, winter. Winter, spring. Summer, 5 cr. each quarter. See NOTE above. Students who receive a grade of "A" in 11a are exempted from further work in composition. Through the writing of papers, the course offers training in gathering and organization of materials and development of ideas. Study of the structure, form, and variations of the English sentence and paragraph.

12abc. FRESHMAN COMPOSITION. 3 Q. Autumn, winter, spring, 3 cr. each quarter. See NOTE above. Students who receive a grade of "A" in 12b are exempted from further work in composition. Through the writing of papers, the course offers training in gathering and organization of materials and development of ideas. Study of the structure, form, and variations of the English sentence and paragraph.

17. IMAGINATIVE WRITING. 3 Q. Autumn, winter, spring. 1 cr. each quarter. Open only to freshmen. Students will be helped in a writing laboratory with any form of expression—stories, sketches, verse, personal expression. May be taken to a maximum of 3 credits.

19. TECHNIQUE OF POETRY. 1 Q. Spring. 4 cr. Summer. 2 or 4 cr. Open to all students. Understanding of poetry through analysis of forms, conceptions, and trends. Guidance in writing verse for students who desire it.

30ab. COMPOSITION. 2 Q. Autumn, winter, spring, 30a. Spring, 30b. Summer, 30a or 30b. 3 cr. each quarter. Students may enter any quarter. Prerequisite, English 11ab or 12abc, and sophomore standing. (a) Autumn,

winter, spring. Work in exposition. (b) Spring. A beginner's course in the writing of narration.

55abc. CONTEMPORARY LITERATURE, 1914-1953. 3 Q. Autumn, winter, spring. 4 cr. each quarter. Prerequisite, sophomore standing. Students may enter any quarter. (a) Contemporary American Magazines. (b) Contemporary novel and short story. (c) Modern biography, drama, poetry. The course encourages wide reading, informal discussion, and an awareness of contemporary thought.

57abc. SHAKESPEARE AND CONTEMPORARIES. 3 Q. Autumn, winter, spring. 4 cr. each quarter. Prerequisite, sophomore standing. Students may enter any quarter. (a) Tudor Drama: early liturgical drama, medieval mystery and morality plays, Elizabethan and Jacobean plays with emphasis upon historical development and stylistic characteristics. (b) Intensive study of three of Shakespeare's plays from both historical and neo-critical points of view, together with a sampling of Shakespearean criticism. (c) Extensive reading of Shakespeare's plays with attention to dramatic conventions, source materials, Renaissance ideology, and the poet's artistic development as seen through stylistic analysis.

59abc. AMERICAN LITERATURE. 3 Q. Autumn, winter, spring. 4 cr. each quarter. Summer, 2 cr. Students may enter any quarter. Prerequisite, sophomore standing. (a) Edwards through Emerson. (b) Longfellow through Dickinson. (c) Clemens through Hemingway.

S60abcd. WORKSHOP IN 19TH CENTURY THEATER. 1 Q. Summer. Offered by extension in Virginia City, Montana, only. Prerequisite, two years of college work including elementary courses in acting and stagecraft or equivalent in practical theater experience.

(a) 3 cr. An analysis of the plays of the 19th Century American drama which will include the study of the playwriting techniques employed, and a critical appraisal of the dramatic contents, with special attention given to the styles of acting that characterize the dramas of the period. Theory will be handled in the regular lecture periods with practical application of it in acting roles in 19th Century dramas of the Virginia City Players' regular productions.

(b) 3 cr. Study of techniques and methods of staging 19th Century plays in the spirit and manner of the period, employing modern staging methods and techniques in scene design, lighting and construction. Also, attention will be given to the problems of costuming and make-up in connection with the authentic reproduction of the 19th Century drama. Practical application of the work will be given in connection with the staging of the regular dramas of the Virginia City Players.

(c) 2 cr. The course will analyze and study the techniques and methods of late 19th Century vaudeville. Practical experience in the rewriting of the songs and vaudeville acts of the period to be produced in connection with the regular Virginia City Players' programs will be a part of the course.

(d) 1 cr. A study of the history of the American theater from 1800 to 1900, tracing its economic, social, and artistic development and illustrating the effect of these changing developments on the drama and the actor.

61. LETTER AND REPORT WRITING. 1 Q. Autumn. Winter. Spring. 4 cr. each quarter. Prerequisite, junior standing. Common types of professional letters are written and analyzed, with emphasis upon tone, content, and form; organizing and writing factual reports.

70. THE WRITING OF DRAMA. 1 Q. Autumn. Winter. Spring. 2 cr. A maximum of 6 credits may be taken. Prerequisite, junior standing and 6 credits from ED. 30, 40, 41, 50, 51. Techniques and practice in writing the one-act play and the full-length play. Worthy plays will be given experimental performance.

72abc. LITERARY COMPOSITION. 3 Q. Autumn, winter, spring. 2 cr. each quarter. Students may enter any quarter. Prerequisite, junior standing and English 30a or 30b or consent of the instructor on the basis of submitted writings. The writing of fiction.

75abc. THE NOVEL. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Students may enter any quarter. Prerequisite, junior standing. (a) English fiction. (b) Continental fiction. (c) American fiction. Given in 1954-55 and in alternate years.

77abc. THE DRAMA. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Students may enter any quarter. Prerequisite, junior standing. (a) Periods of world drama. (b) Drama since Ibsen, in England and in Europe. (c) Contemporary American drama. Given in 1953-54 and in alternate years.

96. ENGLISH CLUB. 3 Q. Autumn, winter, spring. 1 cr. each quarter. Open only to English major or minor senior students for credit. Discussion of current trends in literature; papers.

FOR UNDERGRADUATES AND GRADUATES

Educ. 105. METHODS OF TEACHING ENGLISH. 1 Q. Winter. 4 cr. Prerequisite, senior standing. Required for teaching majors and minors in English. Objectives, methods, materials, including all phases of English, library reading and book ordering, organization of units and laboratory practice in teaching.

S157b. SHAKESPEARE. 1 Q. Summer only. 2-4 cr. An intensive study of three or four plays, with emphasis on historical sources and the newer criticism. "Richard II" and "Hamlet" will be included.

160abc. CREATIVE WRITING. 3 Q. Autumn, winter, spring. Summer. 1 or 2 cr. each quarter. Prerequisite, junior standing and work in English 70 or 72abc, or consent of the instructor on the basis of submitted manuscripts. Practice in writing, with counsel in literary conception and execution.

162. AMERICAN REALISM: TWAIN, HOWELLS, AND JAMES. 1 Q. Spring. 3 cr. Prerequisite, junior standing and two quarters of English 59abc. American theme and idiom as shaped by democratic ideals, foreign literary influences, scientific and psychological attitudes. Given in 1953-54 and in alternate years.

165. MIDDLE ENGLISH LITERATURE. 1 Q. Winter. 4 cr. Prerequisite, junior standing. History 13a is strongly recommended. A study of Middle English literary types and themes, including the origins and evolution of the romance, the mystery play, the ballad, related Continental forms, the Arthurian, Grail, and Tristram legends.

166. IRISH LITERATURE SINCE 1890. 1 Q. Winter, 4 cr. Summer, 2 or 4 cr. Prerequisite, junior standing. (a) The bi-linguists—Hyde, the O'Grady's, Patrick-Joyce, MacManus, Lady Gregory, Stephens, Colum; (b) The Anglo-Irish—Yeats, Synge, Robinson, Russell, Byrne, Dunsany; (c) Later writers—O'Sullivan, O'Faolain, O'Flaherty, O'Casey. Not given in 1953-54.

167. SEMANTICS. 1 Q. Autumn. Summer. 3 cr. Prerequisite, junior standing. This course approaches the study and application of semantics from both the Aristotelian and non-Aristotelian views, emphasizing current techniques as used in argumentation, politics, propaganda, etc., as well as in everyday communication.

169abc. LITERARY VALUES. 3 Q. Autumn, winter, spring. 2 cr. each quarter. Students may enter any quarter. Prerequisite, junior standing and 9 credits in literature. A chronological study of theoretical and practical criticism, with some practice in the writing of criticism. (a) Criticism of Antiquity. (b) Renaissance, Neo-classical, and Romantic criticism. (c) Contemporary criticism.

171abc. RENAISSANCE LITERATURE: EUROPEAN AND BRITISH. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Students may enter any quarter. Prerequisite, junior standing and 8 credits in literature. Studies in Renaissance Continental and British literature, discovering the inter-relationships of ideas and the development of literary patterns.

174abc. BRITISH LITERATURE (1660-1890). 3 Q. Autumn, winter, spring. Summer. 3 cr. each quarter. Students may enter any quarter. Prerequisite, junior standing and 8 credits in literature. (a) Literature from 1660-1785. (b) 1785-1830. (c) 1830-1890.

S175b. THE NOVEL. (Continental Fiction). 1 Q. Summer. 1½-3 cr. Prerequisite, junior standing. Approaches and techniques in the development of the prose fiction of European writers of the nineteenth and twentieth centuries. Reading in their entirety of ten novels. Stendahl, Flaubert, Turgenyev, Tolstoy, Dostoevski, Hamsun, Mann, Proust, Joyce, Kafka. Reading of interpretative studies. Written critical appraisals of the works studied and those of other significant figures. Lectures and discussions. (Not offered Summer 1953.)

S177b. MODERN CONTINENTAL DRAMA. 1 Q. Summer. 1½-3 cr. Prerequisite, junior standing. A study both as literature and as theater of plays from Hebbel to Sartre.

178. TRAGEDY. 1 Q. Spring. 3 cr. Prerequisite, junior standing; and any course in drama. Study of the nature of tragedy through the reading of great tragedies, in drama and in fiction, in the world's literature. Given in 1953-54 and in alternate years.

S183. BRITISH LITERATURE (1890-1930). 1 Q. Summer only. 1½-3 cr. Prerequisite, junior standing and 8 credits in literature. The traditionalists; the realists in verse and fiction; romanticists; writers with a social view; the reviving of drama. Some of the writers to be read are: R. L. Stevenson, Thomas Hardy, Rudyard Kipling, John Galsworthy, H. G. Wells, Joseph Conrad, Oscar Wilde, G. B. Shaw, Robert Bridges, John Masefield.

187. THE ENGLISH LANGUAGE. 1 Q. Spring. 4 cr. Prerequisite, junior standing and 8 credits in composition or literature. A history of the

English language with emphasis upon word composition, phonology, and semantics.

191. HISTORY OF ENGLISH LITERATURE. 1 Q. Winter. 4 cr. Prerequisite, senior standing and 18 credits in English. The principal aims of this course are the establishment of a time chart in the minds of students and a knowledge of the flow of British thought and feeling and the chief writers who contributed to it.

192. MAJOR WRITERS. 1 Q. Autumn. Winter. Spring. 3 cr. Prerequisite, senior standing and 18 credits in literature. The subject and the instructor change from quarter to quarter. Each year a study of Chaucer will be offered.

193ab. CONTEMPORARY LITERATURE: EUROPEAN AND BRITISH. 2 Q. Autumn, winter. 3 cr. each quarter. Prerequisite, senior standing and 15 credits in literature. Advanced courses in French, German, and Spanish literature numbering over 100 may apply in the prerequisite. A study, in translation, of selected twentieth century writers and trends.

198abc. ENGLISH STUDIES. 3 Q. Autumn, winter, spring. 2 cr. each quarter. May be entered any quarter. Prerequisite, senior standing and consent of the chairman of the department. Independent study for English seniors and graduate students, particularly seniors who are seeking honors. Work in several fields of literature.

199. SEMINAR. 2 Q. Autumn, winter. Summer. 1-3 cr. each quarter. Continuous for seniors. Prerequisite, senior standing and consent of the instructor. First instruction and practice in research.

FOR GRADUATES

200. GRADUATE SEMINAR. Any quarter. Credit variable. Prerequisite, graduate standing in English and consent of the chairman of the department. Guidance in graduate subjects or research.

SPEECH

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN SPEECH. ES_p 20, 21, 43, 48 or 137, 69ab, 164, ED_r 40, 41; two quarters of English 57c, 59c, 75c, 77c; and either 14 credits in ES_p 40, 42, 45, 46ab, 67, 121, 143, 150ab, S161, S162, 199 or 14 credits in ES_p 134ab, 135, 137, or 48. This curriculum prepares students for public address, formal and informal, for teaching speech and work in debate, and for graduate study in speech.

Seniors will present for graduation a study in speech and a platform performance.

Students must also complete English 12abc in the freshman year and English 30a or b in the sophomore year.

FOR UNDERGRADUATES

ES_p 20. PRINCIPLES OF SPEECH. 1 Q. Autumn. Winter. Spring. 5 cr. Open to all students. A beginning course in public speaking with platform practice. Emphasis on audience analysis, purpose, organization, and conversational delivery.

ES_p 21. ARGUMENTATION. 1 Q. Autumn. Winter. Spring. 5 cr. Open to freshmen, but only with the consent of the instructor. The principles of effective speaking with special attention to their application to current social, economic, and political problems. Research, analysis, evidence, logic, speech composition. Attention to techniques of debate.

ES_p 40. ELEMENTS OF PERSUASION. 1 Q. Autumn. 3 cr. Prerequisite, sophomore standing. Study and practice of emotional appeal in everyday contacts and on the platform as an influence on individual and social behavior. Given in 1954-55 and in alternate years.

ES_p 42. DISCUSSION. 1 Q. Spring. 3 cr. Prerequisite, sophomore standing. Study of techniques in making inquiries and solving problems by the use of panels, forums, committees, conferences, and round tables. Given in 1953-54 and in alternate years.

ES_p 43. ELEMENTARY PHONETICS. 1 Q. Spring. 3 cr. Prerequisite, sophomore standing. The sounds of English, how they are made, and their function in American pronunciation. Recommended for students in speech, radio, and theater. Course includes a working knowledge of the international Phonetic Alphabet. Given in 1954-55, and in alternate years.

ES_p 45. RADIO SPEECH. 1 Q. Autumn. 2 cr. Prerequisite, junior standing. A laboratory course, covering basic principles of good speech as applied to radio broadcasting. Course includes preparation and practice in delivery of speeches, interviews, commercial announcements, descriptive dialogue and ad. lib. programs.

ESp 46ab. RADIO PRODUCTION AND DIRECTING. 2 Q. Winter, spring. Continuous, 2 cr. each quarter. Prerequisite, ESp 45 and Music 45a. A laboratory and lecture course in the writing, production and direction of all types of radio programs. Students will participate in productions, either as performers or technicians.

ESp 48. VOICE AND DICTION. 1 Q. Autumn. 3 cr. Prerequisite, sophomore standing. The course includes an elementary knowledge of the speech mechanism and its use. Students receive individual help in improving their speech. Recommended for those with defects of voice or articulation.

ESp 67. DEBATE. 3 Q. Autumn, winter, spring. 2 cr. each quarter. A maximum of 6 credits may be taken. Prerequisite, junior standing and ESp 21. Study of historical debates. Participation in inter-collegiate debating.

ESp 69ab. ORAL INTERPRETATION. 2 Q. Autumn, winter. 3 cr. each quarter. Prerequisite, junior standing. The first half of the course will stress communication of thought and emotion from the printed page to persons. The second half will study program planning and the preparation of materials for public or teaching experience.

FOR UNDERGRADUATES AND GRADUATES

ESp 121. THE TEACHING OF SPEECH. 1 Q. Winter. Summer. 3 cr. Prerequisite, senior standing or teaching experience. A study of planning the speech curriculum, instructional materials, methods and practices of teaching speech in the junior high school and high school, and the coaching and direction of speech activities (debate, declamation, oratory, discussion, extemporaneous speaking). Offered in 1953-54, and in alternate years.

ESp 134ab. SPEECH CORRECTION. 2 Q. Autumn, winter. 3 cr. each quarter. Prerequisite, junior standing. 134a is prerequisite to 134b. Recommended for students preparing for teaching, clinical psychology, sociology and social administration, and speech correction. (a) the nature of speech defects, their causes, and methods of correction. (b) study of disorders of voice, retarded speech development, speech defects associated with cleft palate, cerebral palsy, and impaired hearing.

ESp 135. SPEECH CLINIC PRACTICE. 1 Q. Any quarter. 2 cr. each quarter. May be repeated for a total of 6 cr. Prerequisite, ESp 134ab and consent of instructor. Supervised training in the University Speech Clinic.

ESp 137. VOICE SCIENCE. 1 Q. Winter. 3 cr. Prerequisite, 8 credits from ESp 20, 43, 48 and junior standing. The physiology and neurology of respiration, phonation, and hearing. Study of sound physics, theories of hearing, and post-laryngectomy types of voice production. Analysis of recent objective studies and research in the field of voice science. Offered in 1954-55, and in alternate years.

ESp 143. ADVANCED PUBLIC SPEAKING. 1 Q. Autumn. 3 cr. Prerequisite, junior standing and 8 credits in Speech from ESp 20, 21, 40, 42, 67. Theory of oral style and study of models of speech composition. Given in 1953-54, and in alternate years.

ESp 150ab. HISTORY OF PUBLIC ADDRESS. 2 Q. Winter, spring. 3 cr. each quarter. Prerequisite, junior standing and 8 credits in Speech from ESp 20, 21, 40, 42, 67, Engl. 30a. Students may enter any quarter. A study of the biographies and speeches of representative speakers, the issues with which they were identified, and their influence on the history of their period.

ESp 161. BUSINESS AND PROFESSIONAL SPEAKING. 1 Q. Spring. Summer. 3 cr. Prerequisite, junior standing and 5 credits in Speech. The methods, techniques, and psychology of practical speech making for leaders in business, labor, education, and the professions. Preparation of lectures on subjects of business and professional interest to the student. Offered in 1954-55, and in alternate years.

ESp S162. THE PSYCHOLOGY OF SPEECH. 1 Q. Summer 1953 only. 3 cr. Prerequisites, 8 credits of ESp 20, 21, 40, 43, 134ab, or consent of the instructor. Comprehensive study of the psychological aspects of speech. The psychology of audience response, social facilitation, and integration of the crowd. Discussion of the nervous system, emotion, thought, and motivation. The dynamics of speaker-audience relationships.

ESp S163. CLASSROOM USES OF SPEECH. 1 Q. Summer 1953 only (last 5 weeks). 3 cr. Prerequisite, junior standing and classroom teaching experience or consent of the instructor. Study, practice, and observation of methods of using conversation, discussion, pantomime, reading aloud, and drama in the elementary and secondary classroom to motivate and facilitate the learning of the various subjects in the curriculum.

ESp 164. THE AUDIENCE. 1 Q. Spring. 3 cr. Prerequisite, 8 cr. from ESp 20, 21, 40, 43, 134ab and junior standing. Study of the audience-speaker relationship. Comparison of modern theories on the factors affecting that relationship.

ESp 169. ADVANCED ORAL INTERPRETATION. 1 Q. Spring. 3 cr. Prerequisite, junior standing and ESp 69ab. Creative interpretative reading based on analysis of types of literature.

ESp 199. SEMINAR. 3 Q. Autumn, winter, spring. Credit variable. Prerequisite, senior standing in speech. Gathering of bibliography, methods of research, and research in the fields of speech.

DRAMA AND THEATER

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN DRAMA. EDr 30, 40, 41, 50, 70, 75, 190 (4 cr.), 191 (3 cr.); ESp 48, 69ab; English 77abc (6 cr.), 57b or c, plus at least 12 credits to be selected from EDr 15 and/or 16 (maximum of 3 cr.), 51, 60, 70, 76, 105, 110, 195, 197, Eng. 70. This curriculum provides training for students who desire to continue study after graduation in drama and the theater in any of its phases and for those who wish to teach dramatics in schools, colleges, and communities and to produce plays.

Seniors will present for graduation original plays or prompt books for production of plays.

Students must also complete English 12abc in the freshman year and English 30a or b in the sophomore year.

FOR UNDERGRADUATES

EDr 15. APPLIED ACTING. 3 Q. Autumn, winter, spring. 1 cr. each quarter. Open to all students. Students may enter any quarter. A laboratory course in acting. Participation in scenes and one-act plays. Those students taking the three quarters in sequence will be given increasingly heavier roles. May be taken to a maximum of 3 credits.

EDr 16. APPLIED STAGECRAFT. 3 Q. Autumn, winter, spring. 1 cr. each quarter. Open to all students. Students may enter any quarter. A laboratory course in the principles and practice of stagecraft. Students will work on production crews of major productions. May be taken to a maximum of 3 cr.

NOTE: 3 credits of EDr 15 and/or EDr 16 may be applied to the drama major.

EDr 30. INTRODUCTION TO THE THEATER. 1 Q. Autumn. 3 cr. Prerequisite, sophomore standing. A survey course covering the elements which make up the art of play production. Consideration of the principles underlying all the arts.

EDr 40. ELEMENTARY ACTING. 1 Q. Winter. 3 cr. Prerequisite, sophomore standing. Principles of pantomime and characterization with attention to expressive bodily action. Techniques of voice in acting and exercises for vocal flexibility, range, articulation, and enunciation.

EDr 41. ELEMENTARY DIRECTION. 1 Q. Spring. 3 cr. Prerequisite, EDr 40. Principles and techniques of stage direction and rehearsal. The production of the one-act play form will be considered and used in this course.

EDr 45. RADIO DRAMA. 1 Q. Winter. 2 cr. Prerequisite, EDr 15, (2 cr.) or EDr 40. Presentation of drama before the microphone.

EDr 50. MAKING OF SETS. 1 Q. Winter. 2 cr. Prerequisite, sophomore standing. Principles of and practice in the construction of stage scenery. Students will work on the construction crews of major productions.

EDr 51. STAGE LIGHTING. 1 Q. Spring. 2 cr. Prerequisite, sophomore standing and EDr 50. Principles and practice in stage lighting. The primary purpose is to acquaint the student with theatrical lighting equipment and instruments, and their use. Study of the elements of electricity.

EDr 60. ADVANCED ACTING. 1 Q. Autumn. 3 cr. Prerequisite, EDr 40 and junior standing. Study and practice in creating a role. Application of the principles of voice, bodily action, pantomime, characterization.

EDr 70. ADVANCED STAGECRAFT. 1 Q. Spring. 3 cr. Prerequisite, EDr 50 and 51, and junior standing. Study of types of stage scenery. Principles of and practice in scene painting. Advanced problems in scene construction and painting. Students will head construction and painting crews for major productions.

EDr 75. STAGE MAKEUP. 1 Q. Autumn. 2 cr. Prerequisite, junior standing and EDr 30 or considerable previous experience and consent of the instructor. Principles of and practice in theatrical makeup. Students will work on makeup for major productions.

EDr 76. STAGE COSTUMING. 1 Q. Autumn. 2 cr. Prerequisite, EDr 30 and junior standing or considerable previous experience and consent of the instructor. History of costumes of various periods. Principles of adapting the period style to the period play. Students will work on costumes for major productions.

FOR UNDERGRADUATES AND GRADUATES

EDr 105. AMERICAN DRAMA AND THE THEATER. 1 Q. Spring. 3 cr. Prerequisite, junior standing. A study of the American theater and of the principal American plays, with special emphasis on the drama as an expression of the national life and culture. Given in 1954-55, and in alternate years.

EDr 110. THEATER IN THE COMMUNITY. 1 Q. Spring. Summer. 2 cr. Prerequisite, junior standing and consent of the instructor. Consideration of the place in society of the children's theater, the high school theater, and the community and little theaters. Recommended for teachers. Given in 1953-54, and alternate years.

EDr 189ab. COMMUNITY PAGEANTRY. 2 Q. Winter, spring. Continuous. 4 cr. (2 cr. each quarter.) Prerequisite, junior standing and experience in writing or staging drama and consent of the instructor. Methodologies involved in the writing and production of historical dramas with ample opportunities to study as laboratory observers the development of such dramas in Montana communities.

EDr 190. THEATER PROJECTS. 3 Q. Autumn, winter, spring. 4 cr. each quarter. Summer. 1 or 2 cr. Open to seniors and graduates who have taken at least 10 credits in EDr courses or in English 57abc and 77abc, and demonstrated ability in theater and drama; to others with consent of the instructor on the basis of much work in drama and the theater. Independent work in design, lighting, costume design, direction, playwriting, study of drama.

EDr 191. READINGS IN THEATER. 3 Q. Autumn, winter, spring. 2-4 cr. each quarter. Summer. 1-2 cr. each 5 weeks. Open to seniors and graduates who have taken 10 credits in EDr courses or in English 57abc and 77abc, and consent of the instructor. The student may study the plays of a dramatist, inform himself about actors or playwrights, theaters, or movements in drama.

EDr 195. ADVANCED DIRECTION. 1 Q. Winter. 3 cr. Prerequisite, EDr 41 and senior standing. Technique of rehearsing and directing long plays. Principles of producing farce, fantasy, comedy, melodrama, tragedy.

EDr 197. STAGE DESIGN. 1 Q. Autumn. 3 cr. Prerequisite, EDr 50, FA 23, and FA 25a or equivalent, and senior standing. Study of the principles of stage design and the relation of the scene to the play. Practice in designing stage settings.

FINE ARTS

Professor Aden F. Arnold (Chairman); Assistant Professor James E. Dew.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN FINE ARTS. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Fine Arts: 55 or more credits including Fine Arts 23, 25ab, 31abc, 35, 40, 51, 150 (2 credits minimum). A reading knowledge of a classical or modern language is required.

FOR UNDERGRADUATES

23. DRAWING. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Summer. 2 or 4 cr. Open to all students. Fundamentals of objective and expressive drawing, using varied methods and subject matter.

25ab. COLOR AND DESIGN. 2 Q. Autumn, winter. 3 cr. each quarter. Summer. 2 or 4 cr. Open to all students. A course in creative design and use of color, offering an introductory study of theories, methods and problems.

27. ELEMENTARY CRAFTS. 1 Q. Spring. 2 cr. Summer. 1-2 cr. Open to all students. May not be given every quarter as indicated.

31abc. HISTORY OF ART. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Prerequisite, sophomore standing. Student may enter any quarter. A comprehensive treatment of every important art movement, related to corresponding social and cultural backgrounds. Consideration of aesthetic values is an important phase of the work.

35. SCULPTURE. 2 Q. Winter, spring. 3 cr. each quarter. Prerequisite, 6 credits of Fine Arts 23. A basic course in the methods and techniques of sculpture.

37. MEDIUMS. 1 Q. Autumn. Summer. 3 cr. Prerequisite, 6 credits of Fine Arts 23. Experiments with a variety of mediums to achieve a compre-

hensive knowledge of the limitations and possibilities of each, and a study of historical and current practices.

39. WATER COLOR. 1 Q. Spring. 3 cr. Summer. 2 or 4 cr. Prerequisite, 6 credits of Fine Arts 23. Water color techniques and expressive use of subject matter. Still life and landscape. With consent of instructor, this course may be repeated for a maximum of 6 credits.

40. PAINTING. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Summer. 2 or 4 cr. Prerequisite, 6 credits of Fine Arts 23. Methods and techniques of oil painting, with individual criticism directed towards significant expression.

51. LIFE DRAWING. 3 Q. Autumn, winter, spring. 1 cr. each quarter. Prerequisite, 6 credits of Fine Arts 23. A concentrated study of the human figure, posed and in action, accompanied by study of anatomical construction. With consent of instructor, this course may be repeated to a maximum of 9 credits.

FOR UNDERGRADUATES AND GRADUATES

125. ADVANCED DESIGN. 3 Q. Autumn, winter, spring. 1 to 6 cr. each quarter. Prerequisite, junior standing and Fine Arts 25ab. Advanced problems of a specialized nature. With consent of instructor, this course may be repeated to a maximum of 12 credits.

140. ADVANCED PAINTING. 3 Q. Autumn, winter, spring. 1 to 6 cr. each quarter. Prerequisite, junior standing and Fine Arts 40. Advanced training with emphasis on creative work. With consent of instructor, this course may be repeated to a maximum of 12 credits.

150. SENIOR SEMINAR. 1 Q. Any quarter. 1-3 cr. per quarter. May be repeated to a maximum of 6 cr. Prerequisite, senior standing and consent of instructor. Study of theories and practices applicable to art as a profession or to the teaching of art.

FOREIGN LANGUAGES

Professors Paul A. Bischoff, Rudolph O. Hoffman; Associate Professors Robert M. Burgess (Chairman), Thora Sorenson; Assistant Professors Gunther M. Bonnin, Marguerite H. Ephron.

HIGH SCHOOL PREPARATION. Languages taken in high school will be recognized by the University both in meeting foreign language requirements and in fulfilling the requirements for a major in languages. High school work will be evaluated on the basis of a placement examination.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN LANGUAGES. Not more than 90 credits in all foreign or classical languages may be counted toward the Bachelor of Arts degree. Placement examinations are required of all entering students who continue languages in which high school entrance credit is presented. Students who have one high school unit in a modern language should enter course 13a; those with two units, course 15; those with three units, courses numbered over 100, subject, however, to the placement examination. Students who have two high school units in Latin should enter Latin 13a; those who have four units, 15a, subject to a placement examination. Thus the total number of credits for a major in a foreign language varies with the student's high school preparation. Requirements are set forth below in connection with each language.

FRENCH

MAJOR REQUIREMENTS: Candidates for the degree of Bachelor of Arts with a major in French must meet the following requirements in addition to the general requirements for graduation listed earlier in the catalog.

1. French 11a to 17 inclusive, or equivalent. (French 18 is strongly recommended for majors.)
2. French 119 and at least 15 credits selected from courses numbered 121 to 132 inclusive. If a student, on the basis of a placement examination, places in a course numbered over 100, 18 credits constitute the minimum requirement.
3. Four quarters, or equivalent, of another language.
4. Two quarters in history of Europe, chosen from the following: History 30ab, 33, 34, 35.

FOR UNDERGRADUATES

11a. ELEMENTARY FRENCH. 1 Q. Autumn. Winter. Summer. 5 cr. No credit given for 11a until 11b is completed.

11b. ELEMENTARY FRENCH. 1 Q. Winter. Spring. 5 cr. Prerequisite, French 11a.

13a. INTERMEDIATE FRENCH. 1 Q. Autumn. Spring. Summer. 5 cr. Prerequisite, French 11b or equivalent.

13b. INTERMEDIATE FRENCH. 1 Q. Autumn. Winter. Summer. 4 cr. Prerequisite, French 13a or equivalent.

15. ADVANCED FRENCH. 1 Q. Winter. Spring. Summer. 4 cr. Prerequisite, French 13b or equivalent.

17. FRENCH GRAMMAR REVIEW AND COMPOSITION 1 Q. Autumn. Spring. 4 cr. Prerequisite, French 15 or equivalent.

18. ADVANCED FRENCH GRAMMAR AND COMPOSITION. 1 Q. Autumn. 3 cr. Prerequisite, French 17.

FOR UNDERGRADUATES AND GRADUATES

119. SURVEY OF FRENCH LITERATURE. 1 Q. Spring. 3 cr. Prerequisite, French 17.

121. 17th CENTURY FRENCH LITERATURE. 1 Q. Autumn. 3 cr. Prerequisite, French 17 or equivalent. Given in 1953-54 and in alternate years.

123. 18th CENTURY FRENCH LITERATURE. 1 Q. Winter. 3 cr. Prerequisite, French 17 or equivalent. Given in 1953-54 and in alternate years.

125. FRENCH CULTURE AND LIFE. 1 Q. Autumn. 3 cr. Prerequisite, French 17 or equivalent. Given in 1954-55 and in alternate years.

126. FRENCH POETRY. 1 Q. Spring. 3 cr. Prerequisite, French 17. Given in 1954-55 and in alternate years.

127. 19th CENTURY FRENCH LITERATURE. 1 Q. Winter. 3 cr. Prerequisite, French 17 or equivalent. Given in 1954-55 and in alternate years.

128. FRENCH CONVERSATION. 1 Q. Any quarter. 1 cr. Prerequisite, French 17. May be repeated not to exceed 3 credits.

129. FRENCH RENAISSANCE. 1 Q. Spring. 3 cr. Prerequisite, French 17. Given in 1953-54 and in alternate years.

132. SEMINAR. Studies of works of outstanding writers. 1 Q. Any quarter. 2-3 cr. Prerequisite French 17 and junior standing. May be repeated not to exceed 15 credits.

FOR GRADUATES

200. GRADUATE SEMINAR. Any quarter. Credits variable. Prerequisite, graduate standing and consent of chairman of department. Guidance in individual work.

GERMAN

MAJOR REQUIREMENTS. Candidates for the degree of Bachelor of Arts with a major in German must meet the following requirements in addition to the general requirements for graduation listed earlier in the catalog.

1. German 11a to 17 inclusive, or equivalent.

2. German 119 and at least 15 credits selected from German Readings (German 150). If a student, on the basis of a placement examination, places in a course numbered over 100, 18 credits constitute the minimum requirement.

3. Four quarters, or equivalent, of another language.

4. Two quarters in history of Europe, chosen from the following: History 29, 30ab, 33, 34, 35.

FOR UNDERGRADUATES

11a. ELEMENTARY GERMAN. 1 Q. Autumn. Winter. Summer. 5 cr. No credit given for 11a until 11b is completed.

11b. ELEMENTARY GERMAN. 1 Q. Winter. Spring. 5 cr. Prerequisite, German 11a or equivalent.

13a. INTERMEDIATE GERMAN. 1 Q. Spring. Summer. 5 cr. Prerequisite, German 11b or equivalent.

13b. INTERMEDIATE GERMAN. 1 Q. Autumn. Summer. 4 cr. Prerequisite, German 13a or equivalent.

15. ADVANCED GERMAN. 1 Q. Winter. Summer. 4 cr. Prerequisite, German 13b, or equivalent.

17. GERMAN GRAMMAR REVIEW AND COMPOSITION. 1 Q. Autumn. Spring. 4 cr. Prerequisite, German 15 or equivalent.

FOR UNDERGRADUATES AND GRADUATES

119. SURVEY OF GERMAN LITERATURE. 1 Q. Spring. 3 cr. Prerequisite, German 17 or equivalent.

128. GERMAN CONVERSATION. 1 Q. Any quarter. 1 cr. Prerequisite, German 17 or equivalent. May be repeated to a maximum not to exceed 3 credits.

150. GERMAN READINGS. 1 Q. Any quarter. 2-5 cr. Prerequisite, German 15. Advanced readings from outstanding German writers. May be repeated not to exceed 25 credits.

GREEK

No major is given in Greek.

FOR UNDERGRADUATES

11a. ELEMENTARY GREEK. 1 Q. Winter. Summer. 5 cr. Credit allowed for 1 quarter of Greek.

11b. ELEMENTARY GREEK. 1 Q. Spring. 5 cr. Prerequisite, Greek 11a.

13a. INTERMEDIATE GREEK. 1 Q. Autumn. Summer. 3 cr. Prerequisite, Greek 11b.

13b. INTERMEDIATE GREEK. 1 Q. Winter. 3 cr. Prerequisite, Greek 13a.

15. ADVANCED GREEK. 1 Q. Spring. 3 cr. Prerequisite, Greek 13b.

LATIN

MAJOR REQUIREMENTS. Candidates for the degree of Bachelor of Arts with a major in Latin must meet the following requirements in addition to the general requirements for graduation listed earlier in the catalog.

1. Latin 11a to 15b inclusive, or equivalent.
2. At least 18 credits selected from Latin Readings (Latin 150).
3. General 15abc, History 15 and 16 are strongly recommended.
4. Greek 11ab may be substituted for a Latin course above 15b.

FOR UNDERGRADUATES

11a. ELEMENTARY LATIN. 1 Q. Autumn. Summer. 5 cr. No credit given for 11a until 11b is completed.

11b. ELEMENTARY LATIN. 1 Q. Winter. 5 cr. Prerequisite, Latin 11a.

13a. INTERMEDIATE LATIN. 1 Q. Spring. 5 cr. Prerequisite, Latin 11b.

13b. INTERMEDIATE LATIN. 1 Q. Autumn. Summer. 5 cr. Prerequisite, Latin 13a.

15a. ADVANCED LATIN. 1 Q. Winter. 5 cr. Prerequisite, Latin 13b.

15b. ADVANCED LATIN. 1 Q. Spring. 5 cr. Prerequisite, Latin 15a.

FOR UNDERGRADUATES AND GRADUATES

150. LATIN READINGS. 1 Q. Any quarter. 2-5 cr. Prerequisite, Latin 15b. Advanced readings from outstanding Latin writers. May be repeated not to exceed 30 credits.

FOR GRADUATES

200. GRADUATE SEMINAR. Any quarter. Credits variable. Prerequisite graduate standing and consent of chairman of department. Guidance in individual work.

SPANISH

MAJOR REQUIREMENTS: Candidates for the degree of Bachelor of Arts with a major in Spanish must meet the following requirements in addition to the general requirements for graduation listed earlier in the catalog.

1. Spanish 11a to 17 inclusive, or equivalent. (Spanish 18 is strongly recommended for all majors and is required of teaching majors.)
2. Spanish 119 and 15 additional credits selected from courses numbered 121 to 134 inclusive, including one quarter of 125.
3. Four quarters, or equivalent, of another language.
4. History 123abc or History 123ab and History 165.

FOR UNDERGRADUATES

11a. ELEMENTARY SPANISH. 1 Q. Autumn. Winter. Summer. 5 cr. No credit given for 11a until 11b is completed.

11b. ELEMENTARY SPANISH. 1 Q. Winter. Spring. 5 cr. Prerequisite, Spanish 11a.

- 13a. INTERMEDIATE SPANISH. 1 Q. Autumn. Spring. Summer. 5 cr. Prerequisite, Spanish 11b or equivalent.
- 13b. INTERMEDIATE SPANISH. 1 Q. Autumn. Winter. Summer. 4 cr. Prerequisite, Spanish 13a or equivalent.
15. ADVANCED SPANISH. 1 Q. Autumn. Winter. Spring. Summer. 4 cr. Prerequisite, Spanish 13b or equivalent.
17. SPANISH GRAMMAR REVIEW AND COMPOSITION. 1 Q. Winter. Spring. 4 cr. Prerequisite, Spanish 15 or equivalent.
18. ADVANCED SPANISH GRAMMAR AND COMPOSITION. 1 Q. Autumn. 3 cr. Prerequisite, Spanish 17 or equivalent.

FOR UNDERGRADUATES AND GRADUATES

119. SURVEY OF SPANISH LITERATURE. 1 Q. Autumn. 3 cr. Prerequisite, Spanish 17.
120. CERVANTES. 1 Q. Autumn. 3 cr. Prerequisite, Spanish 17. Given in 1953-54 and in alternate years. A study of Don Quijote and other novels of Cervantes.
121. SPANISH DRAMA OF THE GOLDEN AGE. 1 Q. Winter. 3 cr. Prerequisite, Spanish 17. Given in 1953-54 and in alternate years.
122. PICARESQUE NOVEL. 1 Q. Winter. 3 cr. Prerequisite, Spanish 17. Given in 1954-55 and in alternate years.
123. 19th CENTURY SPANISH NOVEL. 1 Q. Autumn. 3 cr. Prerequisite, Spanish 17. Given in 1953-54 and in alternate years.
124. 19th CENTURY SPANISH DRAMA. 1 Q. Winter. 3 cr. Prerequisite, Spanish 17. Given in 1953-54 and in alternate years.
- 125ab. SPANISH-AMERICAN LITERATURE. 2 Q. Winter, spring. 3 cr. each quarter. Prerequisite, Spanish 17. (a) General survey of the literary movement from Colonial times through the Modernista movement. (b) Contemporary prose writers with emphasis on the novelists of the Argentine, Mexico, Colombia, and Venezuela. Given in 1954-55 and in alternate years.
127. CONTEMPORARY SPANISH DRAMA. 1 Q. Autumn. 3 cr. Prerequisite, Spanish 17. Given in 1954-55 and in alternate years.
128. SPANISH CONVERSATION. 1 Q. Autumn. Winter. Spring. 1 cr. Prerequisite, Spanish 17. May be repeated not to exceed 3 credits.
129. CONTEMPORARY SPANISH NOVEL. 1 Q. Winter. 3 cr. Prerequisite, Spanish 17. Given in 1954-55 and in alternate years.
131. COMMERCIAL SPANISH. 1 Q. Spring. 3 cr. Prerequisite, Spanish 17. Writing of Spanish commercial letters and a study of commercial practices in Spanish-America. Given in 1953-54 and in alternate years.
133. SEMINAR. 1 Q. Winter. Spring. 2-3 cr. Prerequisite, Spanish 17 and junior standing. Outstanding authors and literary movements of Spain and Spanish America. May be repeated not to exceed 15 credits.
134. SEMINAR IN SPANISH AMERICAN LITERATURE. 1 Q. Any quarter. 2-3 cr. Prerequisite, Spanish 17 and junior standing. Mexican Novel of the Revolution, Modernista movement, Gauchesque Literature of the Argentine, 20th Century Novel of Venezuela, Colombia, Chile, Peru.

FOR GRADUATES

200. GRADUATE SEMINAR. Any quarter. Credits variable. Prerequisite, graduate standing and consent of chairman of department. Guidance in individual work.

FORESTRY

Professors Fay G. Clark, Melvin S. Morris, Thomas C. Spaulding, Charles W. Waters, Ross A. Williams (Dean); Associate Professor Paul E. Bruns; Assistant Professors Gene S. Cox, Don M. Drummond, John P. Krier, Thomas A. Walbridge; Instructors James O. Klemmedson, Elwood B. Shade.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra and geometry. It is also recommended that the high school preparation include trigonometry and chemistry.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN FORESTRY. A minimum of 186 credits of work, not including credits obtained by required work in Military Science and Physical Education.

To continue as majors in the School of Forestry during the third and fourth years, students must have and maintain an average grade of "C."

Each student is required to spend not less than two summers of three months each, in successful employment, gaining field experience through some type of approved forestry work.

FIELD COURSE EXPENSE DEPOSITS. The following field course expense deposits will be charged for advanced courses in the School of Forestry: For. 20b, \$5.00; For. 22, \$5.00; For. 23, \$5.00; For. 105c, \$3.00; For. 114, \$5.00; For. 125a, \$5.00; For. 125c, \$8.00; For. 133, \$5.00; For. 136b, \$15.00; For. 141, \$50.00; For. 145b, \$15.00; For. 146, \$30.00; For. 151, \$6.00; For. 168, \$5.00; For. 180, \$5.00; For. 191, \$5.00; For. 200, \$5.00.

Seniors taking the spring camp and field trip in which Forestry courses 125c, 136b, 141, 145b and 146 are given should be prepared to make additional deposits to meet actual field expenses.

The following courses must be completed for the degree of Bachelor of Science in Forestry.

FRESHMAN AND SOPHOMORE YEARS

First year: Forestry 11abc; Botany 10ab; Chemistry 11abc or 13ab; Mathematics 13; English 11ab; Geology 11a; Health and Physical Education 11ab; Military or Air Science 1abc or 21abc.

Second year: Botany 22, 51; Economics 14a; Forestry 12, 20ab, 22, 23, 25, 26ab; Health and Physical Education 12abc; Zoology 10; Military or Air Science 2abc or 22abc.

Students taking Chemistry 13ab are strongly urged to take Chemistry 19 or Chemistry 13c in the spring quarter of the first year.

JUNIOR AND SENIOR YEARS

Students are expected to select a specific course of study at the beginning of their junior year in one of the following fields: Forest Management, Range Management, Wildlife Management, Wood Utilization or Public Relations, and to adhere to the curriculum specified for each. All juniors are expected to take: Botany 125; Forestry 105abc, 120; Journalism 34; and Physics 11a or 20a. In addition, students must take the following for:

FOREST MANAGEMENT

Third year. Zoology 118, Physics 25, and Forestry 114.

Fourth year. Forestry 115, 125ac, 130, 133, 136b, 145ab, 146, 148.

RANGE MANAGEMENT

Third year. Forestry 114, 121, Botany 164.

Fourth year. Forestry 130, 138, 140abc, 141, 145ab, 146, 148.

FOREST UTILIZATION

Third year. Forestry 114, Zoology 118, Chemistry 19.

Fourth year. Forestry 115, 125abc, 130, 133, 136b, 137, 145ab, 146, 148.

WILDLIFE MANAGEMENT

Students majoring in forestry, but who are also especially interested in Wildlife Management are encouraged to take the subjects listed below. If a student decides to specialize in this field, he should devote four additional quarters to graduate work leading to the degree of Master of Wildlife Management.

Third year. Forestry 105abc, 110ab, 120, 121; Zoology 15, 23, 24.

Fourth year. Forestry 130, 138, 140abc, 141, 145ab, 146, 148, Zoology 109, Botany 161a.

COMBINED FORESTRY-JOURNALISM CURRICULUM

Careers in forestry and conservation often involve a knowledge of public relations, including the preparation and handling of publicity releases. A joint background in basic forestry and journalism often will open other doors to specialized opportunity—on trade and technical publications, or in publicity and promotion for private timber companies.

This curriculum includes the following courses, from which the student and his adviser should select the most appropriate program: Journalism 11, 32, 33, 34, 35, 42; Forestry 11abc, 127, 148, 146, 191, 195. In other respects the student must satisfy the requirements for a degree in either Forestry or Journalism as his preference may be.

FOR UNDERGRADUATES

10. **SLIDE RULE.** 1 Q. Any quarter. No credit. Prerequisite, sophomore standing, Mathematics 10 and 13. Use of the Log-Log Duplex slide rule in the solution of mathematics problems commonly encountered in the field of forestry.

11abc. SURVEY OF FORESTRY. 3 Q. Autumn, winter, spring. 1 cr. each quarter. Students may enter any quarter. General survey of the field and subject matter of forestry and introduction to the profession; functions and characteristics of forests, their benefits, use, distribution, importance, and conservation.

12. MAPPING. 1 Q. Autumn. Winter. 2 cr. Line drawing and lettering. Methods of map and chart construction from basic survey data. Techniques of map composition and coloring. Use of conventional signs and symbols. Fundamentals of topographic mapping.

20ab. SURVEYING. 2 Q. Autumn. 4 cr. Spring. 5 cr. Prerequisite, Mathematics 13. (a) Care and use of tape, staff compass, Abney level, engineer's level, transit, plane table and alidades. Introduction to differential leveling, transit, stadia and plane table surveys. (b) Public land survey methods. Instrument adjustment. Establishment of triangulation, horizontal and vertical controls by transit and level. Topographic surveys and maps obtained by various combinations of instruments. Earthworks as applied to land use. Solar observations.

21. PLANE TABLE SURVEYING. 1 Q. Spring. 5 cr. Prerequisite, Mathematics 13. Care and use of plane table, telescopic alidade and rod. Introduction to differential leveling, stadia surveying, plane table survey methods. Adjustment of horizontal and vertical controls. Fundamentals of topographic map construction. Primarily for anthropology and geology majors, not for forestry and wildlife majors.

22. MENSURATION-FIELD TECHNIQUES. 1 Q. Spring. 2 cr. Prerequisite, sophomore standing in the School of Forestry. Practice in the use of field instruments for timber cruising, scaling, elementary growth analysis, type and stand mapping.

23. FIELD TECHNIQUES. 1 Q. Spring. 2 cr. Prerequisite, consent of instructor. The application of field techniques in forest surveying, soils improvements, silviculture, and dendrology.

25. SOILS. 1 Q. Winter. 4 cr. Prerequisite, Chemistry 11abc or equivalent. A general course in soils of forest and range land; soil classification and surveys; soil erosion control.

26ab. DENDROLOGY. 2 Q. Autumn, winter. 3 cr. per quarter. Prerequisite, Botany 22 or consent of instructor. The microstructural and taxonomic relations and distribution of the principal forest trees of the United States and Canada, with some consideration of important foreign species.

FOR UNDERGRADUATES AND GRADUATES

105abc. SILVICULTURE. 3 Q. Autumn, winter, spring. 4 cr. each quarter. Prerequisite, Botany 51. (a) The foundations of silviculture upon an ecological basis. The effects of climatic, edaphic, and biotic factors on the growth and development of trees and stands. The influences of the forest upon the site. Principles underlying the regeneration, care, and protection of forest stands. (b) The silvicultural systems of harvesting and reproducing the final crop and the intermediate treatments such as weedings, thinnings, and improvement cuttings. Application of silvicultural methods in the various forest regions of America. (c) Artificial reproduction of the forest, including sowing, planting, and nursery practice.

106. FIELD SILVICULTURE. 1 Q. Autumn. 3 cr. Prerequisite, Forestry 25 and 105ab. A field course designed to acquaint the student with the application of silvicultural techniques to local forest stands. Field silvical studies, planting and intermediate cuttings on the Lubrecht Experimental Forest and vicinity.

108. FARM FORESTRY. 1 Q. Spring. 3 cr. Prerequisite, junior standing in the School of Forestry. The application of the principles of forest mensuration, management, silviculture and soils to small woodland holding.

110ab. FOREST MENSURATION. 2 Q. Autumn, winter. 4 cr. each quarter. Prerequisite, Mathematics 13 and Forestry 20a for 110a; Mathematics 25 is recommended for 110b. Application of mathematical methods to forest and range measurement problems. Measurement of the volume and content of timber products; determination of the volume, growth, and yield of trees and timber stands.

114. FOREST FIRE CONTROL. 1 Q. Spring. 4 cr. Prerequisite, Forestry 20ab. Forest fire control, prevention, detection and suppression; improvements, equipment, and organization and education. Field trips.

115. WOOD TECHNOLOGY. 1 Q. Winter. 4 cr. Prerequisite, Forestry 26 or consent of instructor. The physical, chemical, and mechanical properties of wood.

120. GENERAL RANGE MANAGEMENT. 1 Q. Winter. 5 cr. Prerequisite, junior standing. An introduction course to the field of range management, class of stock, grazing season, grazing capacity, control and dis-

tribution of livestock on range. Range improvements; forest and range interrelationships.

121. RANGE FORAGE PLANTS. 1 Q. Spring. 4 cr. Prerequisite, Forestry 120 and Botany 164. Economic range of forage plants; forage value to different kinds of range animals; management problems in their use.

125abc. FOREST UTILIZATION. 3 Q. Autumn, 4 cr. Winter, 2 cr. Spring, 2 cr. Prerequisites, Forestry 115 and in addition Botany 125 for 125c; Chemistry 11abc or 13ab or consent of instructor. A survey course covering the fields of forest products, their uses and their preservation. (a) Lumbering, pulp and paper, plywoods, and fibre products. (b) Major and minor uses, plastics, derived chemical products, naval stores, etc. (c) Wood preservation in its various fields. Field trips required.

127. FOREST RECREATION. 1 Q. Autumn. Spring. 3 cr. Prerequisite, junior standing. Administrative, economic, and social aspects of the recreational use of forest lands. Field trips may be required.

130. VALUATION. 1 Q. Autumn. 4 cr. Prerequisite, Forestry 105ab and 110a, or consent of instructor. Finance and investment methods applied to forest enterprises; appraisals.

131. FOREST APPRAISALS. 1 Q. Winter. 4 cr. Prerequisites, Forestry 130, 133, and 140a. Application and analysis of appraisal techniques.

133. LOGGING. 1 Q. Autumn. 4 cr. Prerequisite, junior standing. Equipment and methods of logging and forest transportation in the United States. Field trips.

136ab. FOREST ENGINEERING. 2 Q. Winter, spring. 4 cr. each quarter. Prerequisite, Forestry 20ab, 110abc or consent of instructor. (a) Layout of logging railroads and truck roads, forest improvements and earthwork computations, determination of logging costs and time studies. (b) Application of forest engineering technics and methods to practice problems and including a 6-weeks field trip.

137. TIMBER MECHANICS. 1 Q. Winter. 4 cr. Prerequisite, Mathematics 13 or equivalent and Forestry 115. Factors governing the strength and utility of wood as a structural material; determination of stresses in wooden structures. Timber testing.

138. WILDLIFE MANAGEMENT. 1 Q. Autumn. 4 cr. Prerequisite, junior standing. The management of wildlife as a resource. Required of all specializing in range management.

140abc. RANGE MANAGEMENT. 3 Q. Autumn, winter, 4 cr. Spring, 3 cr. Prerequisite, Forestry 120. Range types, distribution, forage value, forage production and utilization; range regulation, improvement. Correlation with other forest soil uses. Management plans.

141. REGIONAL RANGE MANAGEMENT. 1 Q. Spring. 6 cr. Prerequisite, Forestry 140ab. Study of regional range management problems and situations. Work done on senior spring trip.

145ab. FOREST MANAGEMENT. 2 Q. Winter, 4 cr. Spring, 5 cr. Prerequisite, Forestry 105ab, 110 and 130 (130 may be taken concurrently). (a) Organization and management of forest properties; determination of allowable cut and regulation of the growing stock. (b) Emphasis on field work necessary in applying forest management, timber cruising, determination of growth, timber marking and scaling.

146. REGIONAL SILVICULTURE. 1 Q. Spring. 2 to 5 cr. Prerequisite, senior standing. Study, observation, and application of silviculture to regional problems. Major part of course carried on in field in connection with senior trip.

148. ECONOMICS OF FORESTRY. 1 Q. Winter. 4 cr. Prerequisite, Economics 14a and junior standing. Forest resources and their relationships to the national and international economy; economic aspects of forest land management and utilization of its products.

150. FOREST POLICY. 1 Q. Autumn. 4 cr. Prerequisite, Forestry 105 and 148. Development of forest law and policy in the United States and other nations; current trends in public and private forestry.

151. AERIAL PHOTO-INTERPRETATION. 1 Q. Winter. 2 cr. Prerequisite, consent of instructor. Techniques and principles of photographic interpretation; forest, range, and wildlife cover mapping, volume estimation.

155. ADVANCED FOREST MENSURATION. 1 Q. Winter. 4 cr. Prerequisite, Forestry 110. Advanced work in the determination of forest volume, growth and yield. Modern techniques in volume table construction, growth and yield studies.

160. ADVANCED RANGE MANAGEMENT. 1 Q. Any quarter if demand sufficient. 3-5 cr. Prerequisite, Forestry 140abc or its equivalent. For advanced students. Field and laboratory studies in the field of range management emphasizing individual problem work.

165. ADVANCED FOREST MANAGEMENT. 1 Q. Any quarter if de-

mand sufficient. 4 cr. Prerequisite, Forestry 145 or its equivalent. Analysis and preparation of management plans. Current trends and developments in regional forest management practice. Independent problem work.

168. BIG GAME MANAGEMENT. 1 Q. Winter. 3 cr. Prerequisite, Forestry 120 and 138. A study of the habitat requirements of big game species. Competition between game and other land uses. Population control. Economic problems in big game management.

180. WATERSHED MANAGEMENT. 1 Q. Autumn. 5 cr. Prerequisite, junior or senior standing. A study of the controlling factors necessary for the intelligent application of sound management practices to watershed management. It involves the movement and measurement of water, snow surveys, the applications of the principles of range, forest, and wildlife management to watersheds and their relationship to the control of soil erosion and water conservation.

191. FORESTRY PROBLEMS. 3 Q. Any quarter. 2-5 cr. each quarter. Prerequisite, completion of basic undergraduate work and consent of instructor. Individual problem work in timber, range or wildlife management fields.

192ab. RESEARCH METHODS. 2 Q. Autumn, winter. 3 cr. each quarter. Students may enter any quarter. Prerequisite, senior standing and consent of instructor. (a) Scientific method, application of statistical methods to the design of experiments, research technics, organization of research projects. (b) Analysis and presentation of research results, report writing. Not limited to forestry students.

193. SENIOR SEMINAR. 2 Q. Autumn, winter. 1-2 cr. each quarter. Prerequisite, senior standing. A general review of the newer developments in the various fields of forestry.

195. PUBLIC AND PRIVATE ADMINISTRATION. Extension course. Winter. 3-7 cr. Prerequisite, undergraduate degree from a college or university of recognized standing or consent of the Dean of the School of Forestry based on applicants' experience and competence. Intensive instruction in the fundamentals of sociology, psychology, speech, writing, business administration, public relations and related fields. One month, 20 hours per week. Staff of university specialists in fields involved.

FOR GRADUATES

200. RESEARCH. Any quarter. Credit variable. Independent graduate research work in the fields of timber, range, and wildlife management.

GENERAL COURSES

13abc. INTRODUCTION TO BIOLOGICAL SCIENCE. 3 Q. Autumn, winter, spring. 5 cr. each quarter. A general introduction to the field of the Biological Sciences. 13a not open to students who have received credit for Botany 11a or equivalent; 13b not open to students who have received credit for Zoology 10 or equivalent. (a) An introduction to basic cellular morphology, classification, and possible evolution of the plant phyla; structure and physiology of seed plants; ecological factors and succession. (b) Comparative morphology and physiology and the principal animal phyla, with emphasis upon man; ecological relationships. (c) Principles of heredity and eugenics; history and theory of evolution; evidences for evolution from all fields of biology; modern concepts of mechanism of evolution. Given jointly by the departments of Botany and Zoology.

15abc. INTRODUCTION TO THE HUMANITIES. 3 Q. Autumn, winter, spring. 5 cr. each quarter. A general survey of the field of the Humanities. Students may enter any quarter. Students who have completed 8 or more college credits in literature may not receive credit in this course. Acquaintance with art and literature through the centuries from the Greeks to Americans, with the primary aims of understanding and appreciation. Given jointly by the Departments of English, Fine Arts and Foreign Languages.

100. CONSERVATION OF NATURAL AND HUMAN RESOURCES IN MONTANA. 1 Q. Spring. Summer. 3 cr. Prerequisite, junior standing and consent of instructor. The social need for improved conservation practices. A critical survey of climate, physiography, mineral resources, soil and water, as related to plant and animal production and human welfare, and the development of principles underlying improved management of the natural resources. A survey of human and cultural resources. A consideration of methods of social implementation of desired practices. Given jointly by Divisions of Biological and Social Sciences. This is primarily a teacher training course. Does not satisfy requirements for degrees in Botany or Zoology or the group requirement in science.

150ab. WILDLIFE SEMINAR. (a) Autumn. 2 cr. Prerequisite, senior standing in Wildlife Technology or Forestry. Legal problems, policy and administrative problems. (b) Winter. 3 cr. Prerequisite, zoology 108 and 109. Consideration of original literature in wildlife with emphasis on census methods, effects of propagation, predation and refuges.

GEOLOGY

Professor Kenneth P. McLaughlin (Chairman); Assistant Professor Fred S. Honkala; Instructor Robert M. Weidman.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra. It is also recommended that the high school preparation include advanced algebra, physics, and chemistry.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN GEOLOGY. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Geology. Geology 11ab, 22abc, 24ab, 26, 35, 120, 121ab, 191 for a total of 48 credits. Also required are Mathematics 13, 16, 21; Chemistry 11abc or 13ab, 13c; Physics 11abc or 20abc; Zoology 10, English 61. One of the three alternate requirements:

1. Modern Language (French, German, or Spanish) 11ab, 13ab, 15, 23 credits.

OR

2. History and Political Science (Courses 17ab, 15, 116a, 136, and 145 are suggested.) 22-25 credits.

OR

3. Mathematics 22 and 23, 10 credits; plus 15 credits of course work beyond the elementary work mentioned in the preceding paragraph in one of the following: chemistry, physics, or zoology.

Students enrolled in Geology 22abc, 26, 35, 120, 121ab which include field trips share equally the cost of transportation and insurance.

FOR UNDERGRADUATES

10. WORLD GEOGRAPHY. 1 Q. Winter. 3 cr. Open to all students; does not apply to fulfillment of major requirements in the department. 3 lectures, no laboratory. A survey of physical factors affecting important population groups, with reference to strategic resources.

11ab. GENERAL GEOLOGY. 2 Q. Autumn, winter. 5 cr. each quarter. 3 lectures, 4 hours laboratory. 11a is prerequisite to 11b. The first quarter is given to a study of most of the important earth processes and their significance in the early history of the earth. The second quarter is concerned with later earth history and with processes which are most active at present.

15. GENERAL FIELD GEOLOGY. 1 Q. Spring. 3 cr. Prerequisite, Geology 11ab. Field observation and study of a variety of geologic phenomena. Designed specifically for non-majors in Geology. Credit for Geology 15 may not be substituted by majors for Geology 35.

22abc. ADVANCED HISTORICAL GEOLOGY. 3 Q. Autumn, winter, spring. Continuous. 4 cr. each quarter. 3 lectures, 3 hours laboratory. Prerequisite, Geology 11ab; Zoology 10 is recommended preparation. Geology 22a treats earth origin, Precambrian and lower Paleozoic history; 22b continues with upper Paleozoic and Mesozoic history; 22c treats Tertiary and Quaternary history, plus a survey of stratigraphic methods and principles. North American stratigraphic successions are considered throughout the course. Laboratories include map, fossil, library and field exercises.

24ab. MINERALOGY. 2 Q. Autumn, winter. Continuous. 4 cr. each quarter. 2 lectures, two 3-hour laboratories. Chemistry 11c or 13c is prerequisite or may be taken concurrently. The elements of crystallography and the classification and determination of about 250 common minerals by means of physical and chemical properties, with especial emphasis on the ore and rock forming minerals.

26. PETROLOGY. 1 Q. Spring. 4 cr. 2 lectures, two 3-hour laboratories. Prerequisite, Geology 24ab. Study of the common rocks, their mineral composition and physical characteristics, classification, identification in the field, origin and structural features.

35. FIELD GEOLOGY. 1 Q. Spring. 3 cr. Prerequisite, Geology 11ab. The following techniques are demonstrated and applied by the student as he studies a field area and develops geologic maps; recognition, mapping, measurement and description of geologic formations and structures; use of Brun-

ton compass, aerial photographs, and topographic maps. A detailed report on the area, with geologic maps and cross sections, is required. Field work is done on week ends and weekly classroom critiques are held.

FOR UNDERGRADUATES AND GRADUATES

101ab. METALLIC MINERAL DEPOSITS. 2 Q. Autumn, winter. Continuous. 4 cr. each quarter. 3 lectures, one 2-hour laboratory. Prerequisites, Geology 22c and 26. Study of the theoretical and practical aspects of the origin, classification and geologic environments of metallic mineral deposits.

106. NON-METALLIC MINERAL DEPOSITS. 1 Q. Spring. 4 cr. 3 lectures, one 2-hour laboratory. Prerequisites, Geology 22c and 26. Study of the theoretical and practical aspects of the origin, classification and geologic environments of non-metallic deposits.

111ab. INVERTEBRATE PALEONTOLOGY. 2 Q. Autumn, winter. Continuous. 4 cr. each quarter. 2 lectures, 4 hours laboratory. Prerequisite, Geology 11b; Zoology 10 or concurrent registration. An introduction to fossil remains of invertebrate animals with emphasis on anatomy of skeletal parts and on classification.

S112. GEOLOGY IN MONTANA. 1 Q. Summer. 5 weeks. 3 cr. No prerequisite. Designed primarily for teachers of natural science. Lectures will stress general earth science with emphasis on Montana. Most laboratory work will be out of doors. Regular major students in the department may not apply for credit in this course toward fulfillment of degree requirements.

120. ADVANCED PHYSICAL GEOLOGY. 1 Q. Spring. 4 cr. 3 lectures, 3 hours laboratory. Prerequisite, Geology 11a or consent of instructor. A detailed treatment of the physical processes operative at and beneath the earth's surface; the relationships between these processes and observable geologic phenomena.

121ab. STRUCTURAL GEOLOGY. 2 Q. Autumn, winter. Continuous. 3 cr. each quarter. 2 lectures, one 3-hour laboratory. Prerequisite, Geology 22c and 26; Mathematics 21; Physics 11abc or 20abc. A detailed study of the structural features of the earth's crust and their analysis by means of geometric projections.

123. OPTICAL CRYSTALLOGRAPHY. 1 Q. Autumn. 4 cr. 2 lectures, 6 hours laboratory. Prerequisites, Geology 26; Physics 11abc or 20abc; Mathematics 10 or 16. Study of the use of the polarizing microscope and accessories; the theory of optical phenomena observed with the microscope; and the practical application of the phenomena in identifying mineral fragments and minerals in thin section.

124ab. PETROGRAPHY. 2 Q. Winter, spring. Continuous. 4 cr. each quarter. 2 lectures, 6 hours laboratory. Prerequisites, Geology 26 and 123. Geology 124a deals with the optical examination and identification in thin section of igneous minerals and rocks by use of the polarizing microscope. Geology 124b similarly treats metamorphic and sedimentary rocks. Advanced petrologic considerations are included in both 124a and 124b.

137. ADVANCED GEOLOGIC PROBLEMS. 1 Q. Any quarter. 2-5 cr. Prerequisite, senior standing and consent of instructor. Supervised investigation in any of the phases of geologic study in which the student has sufficient background to contribute original thought.

191. SEMINAR. 1 Q. Winter. 1 cr. Prerequisite, senior standing.

FOR GRADUATES

201. RESEARCH. Any quarter. 2-4 cr. Directed research in stratigraphy, paleontology, mineralogy, petrology, mineral deposits and tectonic analysis.

The following courses are given subject to demand:

222. GEOTECTONICS. 1 Q. Spring. 3 cr. 3 lectures. Prerequisite, Geology 121b. Analysis and synthesis of world-wide structural units. Offered in 1953-54 and alternate years.

225. STRUCTURE OF MINERAL DEPOSITS. 1 Q. Spring. 3 cr. 3 lectures. Prerequisite, Geology 121b. Classification of mineral deposits according to their structural environment and features, with especial reference to origin as related to tectonic control. Offered in 1954-55 and alternate years.

229. PRINCIPLES OF STRATIGRAPHY. 1 Q. Spring. 3 cr. 2 lectures, 3 hours laboratory. Prerequisites, Geology 35 and 121b; recommended preparation, Geology 111. Study of interrelationships of environments, tectonic controls, and facies; problems of correlation; isopach, facies, paleogeologic and paleogeographic maps. Laboratory or field.

GRADUATE SCHOOL

Professor Gordon B. Castle, Dean

DEGREES

The following advanced degrees are conferred by the University:

- Master of Arts—Bacteriology, Botany, Chemistry, Economics, English, Foreign Languages, Geology, Health & Physical Education, History, Home Economics, Mathematics, Physics, Political Science, Psychology, Sociology, and Zoology.
- Master of Science—Bacteriology, Botany, Chemistry, Geology, Mathematics, Physics, and Zoology.
- Master of Science in Forestry
- Master of Science in Pharmacy
- Master of Science (combined major in Botany and Forestry)
- Master of Arts in Journalism
- Master of Arts in Education
- Master of Science in Wildlife Technology
- Master of Science in Wildlife Management
- Master of Education
- Master of Forestry
- Master of Music Education

REQUIREMENTS FOR ALL DEGREES

ADMISSION. A student who is a graduate of an accredited college or University may apply for admission to the Graduate School by submitting to the Registrar of the University an official transcript of all his undergraduate work and a written application. Application blanks may be secured from the Registrar or from the Dean of the Graduate School.

The applicant must have completed the minimum requirements for an undergraduate major in the field selected for graduate study or an allied field acceptable to the staff of the major department and to the Dean of the Graduate School. The undergraduate preparation must be equivalent to the general requirements for the corresponding Bachelor's degree at Montana State University.

Students who hold a Bachelor's degree and who have completed 24 credits in Education may be admitted to graduate study in the School of Education. The Master of Arts in Education and the Master of Education are not conferred upon the same individual.

At the discretion of the department or school, qualifying examinations (oral and/or written) may be administered to aid in determining the applicant's preparation.

The Graduate Record Examination, while not required for admission, has been approved by the faculty, and it may be required at the option of any department or school.

An undergraduate of senior standing who needs not more than nine quarter credits to complete the requirements for the Bachelor's degree may enroll in courses for graduate credit. A senior student in the school of Forestry who has earned a total of at least 177 undergraduate credits, but still lacks as many as 16 in his major field may be allowed to begin his graduate work. All requests for such enrollment must be submitted in writing to and be approved by the major advisor and the Dean of the Graduate School prior to registration.

Members of the Faculty of Montana State University above the rank of Instructor may not become candidates for advanced degrees from this University. This does not prevent such members taking advanced courses for transfer to other institutions.

COURSES AND GRADES. All courses listed in the University catalogue which have numbers over 100 are accepted for graduate credit. Courses numbered 200 or over are open to graduate students only.

An average of B must be obtained in all courses taken for graduate credit Courses in which grades below C have been received are not accepted for graduate credit. A maximum of 8 credits of C or D work may be repeated.

REGISTRATION. At the time of registration for each quarter's work the student should consult with his advisor concerning his program for that quarter. The program must be approved by his advisor and the Dean of the Graduate School.

CREDIT REQUIREMENTS. Forty-five quarter credits of graduate work are required.

STUDY LOADS. Fifteen credits of graduate work per quarter are considered a normal study load.

In the summer quarter the normal credit load is 8 credits for a five-week term; 15 credits for the session. The maximum credit load which may be applied toward a degree for the five-week term is nine credits and for the full summer session is 16 credits.

Graduate students employed as assistants or fellows carry a reduced load, usually 10 credits per quarter.

Regular full-time employees of the University may carry a maximum of 5 credits per quarter upon approval of the administration.

RESIDENCE. The minimum residence requirement is enrollment for at least 30 weeks. To satisfy this requirement a minimum of one 10-week quarter's residence must be presented and the remainder may be satisfied by attendance at terms of 5 or more weeks.

Students transferring from Montana State College who have one quarter of graduate study in residence at that institution will be required to fulfill only two-thirds of the minimum residence requirement.

TIME LIMIT FOR DEGREE. All requirements for the degree must be completed within a period of 8 years. (This requirement is to apply to all students who register in the graduate school for the first time in the autumn of 1953 or later. Those graduate students who have enrolled prior to that date will be allowed to complete their requirements under the rule which was in force at the time of their first registration.)

A maximum of ten quarter credits of graduate work, and not to exceed three courses, taken prior to the 8-year period may be validated by examination. These credits must have been earned at either Montana State University or another accredited institution. All validation must be completed before the student is advanced to candidacy. Such validation must be reported to the graduate office by the student's advisor.

TRANSFER OF CREDIT. A student may transfer up to 12 graduate credits (but no residence) toward the fulfillment of the credit requirement for the degree. Such transfer must be approved by the advisor and the Dean of the Graduate School.

EXTENSION AND CORRESPONDENCE COURSES. Up to 15 credits earned in extension courses of graduate caliber taught by members of the faculty of Montana State University and which have been approved by the Graduate committee may be accepted for the degree. Up to one-third of the residence requirement may be waived by the satisfactory completion of up to 15 credits in extension courses.

Correspondence courses will not be accepted for graduate credit.

LANGUAGE REQUIREMENTS. All graduate students working in departments at Montana State University which require a foreign language for the Bachelor's degree must satisfy the same requirement at the graduate level. The following departments require a foreign language—Bacteriology, Botany, Chemistry, English, Fine Arts, History & Political Science, Mathematics, Foreign Languages, Physics, Zoology.

ADMISSION TO CANDIDACY. If the applicant's record is satisfactory (B average in courses registered for) during his first quarter of residence, he may be admitted to candidacy for the degree at the beginning of his second quarter. At this time, or at least two quarters prior to the conferring of the degree, the student must file in the graduate office an application for admission to candidacy in triplicate and submit a tentative title for his thesis or professional paper.

ABSTRACT. Each candidate for a degree is required to prepare an abstract of the thesis or professional paper. This abstract must be approved by his advisor and submitted to the Dean of the Graduate School.

EXAMINATIONS. Each candidate for a degree must pass examinations, which may be oral or written or both, covering his field of study. He will also be examined on his thesis or professional paper.

SPECIAL REQUIREMENTS FOR DEGREES

I. MASTER OF ARTS AND MASTER OF SCIENCE DEGREES. To receive either of these degrees the candidate must present evidence of intensive study and investigation in his field of special interest.

MAJOR AND MINOR WORK. A minimum of two-thirds of the 45 credits required for the Master's degree must be in the major field. The remainder of the work may be in studies approved by the advisor and by the Dean of the Graduate School.

THESIS. The subject of the thesis must be approved by the major professor and by the Dean of the Graduate School. By the end of the sixth week of the quarter in which the degree is to be conferred the candidate must submit to the office of the Graduate School an unbound temporary draft of

the thesis as approved by his advisor. This copy is to be read by his examining committee and by any other person called upon, in order to suggest revisions before final typing. Final acceptance of the thesis is subject to the approval of a committee. This committee is appointed by the Dean of the Graduate School in consultation with the major professor, and must include at least two faculty members in the major field.

Three bound copies of the approved thesis must be placed on file in the office of the Graduate School.

EXAMINATIONS. Examinations covering the student's major field of work and the content of his thesis will be conducted by a committee appointed by the Dean of the Graduate School. These examinations may be taken only after the thesis is accepted.

II. MASTER OF EDUCATION. Candidates for this degree must complete 45 credits of graduate work, including three credits of Research (Education 201) and credit in Methods of Educational Research (Education 285 or equivalent).

MAJOR AND MINOR REQUIREMENTS. The candidate must complete a minimum of 15 residence credits of graduate work in Education. The total number of credits in Education taken as an undergraduate and as a graduate shall be not less than 54.

PROFESSIONAL PAPER. No thesis is required. The candidate must prepare a professional paper which represents the equivalent of a three credit course (Education 201). This paper should involve a practical problem growing out of the student's administrative or teaching interest and should comply in mechanical features with those required of an acceptable thesis. Two copies of this paper must be bound and deposited with the Dean of the School of Education.

TEACHING EXPERIENCE. The candidate must have completed two years of satisfactory teaching experience before the degree is conferred. At least 10 credits of course work offered must be completed following the two years' teaching experience.

EXAMINATIONS. Candidates must take examinations covering the course work completed and the professional paper. Arrangements for these examinations will be made by the Dean of the School of Education.

III. MASTER OF FORESTRY. Candidates must offer 45 credits in graduate courses including a professional paper.

MAJOR AND MINOR REQUIREMENTS. A minimum of 25 graduate credits in Forestry is required. The remainder of the work may be in other fields acceptable to the Dean of the School of Forestry and to the Dean of the Graduate School.

PROFESSIONAL PAPER. A professional paper must be prepared under the direction of the major professor. The subject matter of the paper must be approved by the Dean of the School of Forestry and by the Dean of the Graduate School.

A bound copy of the professional paper must be submitted to the Graduate School for deposition in the library.

EXAMINATIONS. Examinations must be taken during the final month of the quarter in which the degree is to be conferred.

IV. MASTER OF MUSIC EDUCATION. Candidates for this degree must present 45 credits in courses offered for graduate work of which at least 15 credits must be in courses in the 200 series.

PROFESSIONAL PAPER. A professional paper must be prepared under the direction of the major professor. The subject matter of the paper must be approved by the Dean of the School of Music and by the Dean of the Graduate School. A bound copy of the paper must be submitted to the Graduate School for deposition in the library.

EXAMINATIONS. Examinations must be taken during the final month of the quarter in which the degree is to be conferred.

GENERAL INFORMATION

FEES. The basic fee schedule for graduate students who are residents of the State of Montana is \$34.00 per quarter; for non-resident students \$84.00 per quarter. In addition, each student pays a general deposit fee of \$10.00 at the time of his first registration each year. The unused portion of this fee is refunded at the end of the year. In certain departments students may be required to pay an additional laboratory fee of \$25.00 per quarter. The student activity fee of \$10.00 per quarter is optional.

Exemptions from the out-of-state fee are available to graduate students who have outstanding undergraduate records.

HOUSING. Graduate students must have permission from the Office of the Dean of Students to be accommodated in the University dormitories. Information concerning rates can be secured from the Dean of Students.

Family Housing Units constitute temporary facilities available to married students and their families. The units are under the supervision of a Family Housing Project Manager. Information concerning availability or rates can be obtained by writing the Family Housing Office.

ASSISTANTSHIPS AND FELLOWSHIPS. Graduate Assistantships are offered in the majority of the departments in the College of Arts and Sciences and in the Schools of Education, Forestry, Music and Pharmacy. Assistants give not more than 15 hours of service per week to the University. They are permitted to register for a maximum of 10 credits of graduate work per quarter. Stipends are \$900 (plus remission of certain fees) for the academic year.

FELLOWSHIPS:

FORESTRY. Three fellowships carrying a stipend of \$1200 for nine months are available in the School. Fellows carry on assigned research with a member of the staff for half time. The remainder of the fellow's time is available for work toward a Master's degree.

WILDLIFE. Four fellowships are available in the Montana Cooperative Wildlife Research Unit. These fellowships carry a stipend of \$1000 per year. The recipients of these fellowships work on a research program leading to a Master's degree. The program requires two years for completion.

HEALTH AND PHYSICAL EDUCATION

Professors Harry F. Adams, George P. Dahlberg, Agnes L. Stoodley; Associate Professor Charles F. Hertler (Chairman); Assistant Professors Edward S. Chinske, Jane E. Dew, Vincent Wilson; Instructors George W. Cross, Robert M. Oswald, Deanne Thorsrud, John F. Zeger.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN HEALTH AND PHYSICAL EDUCATION. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Health and Physical Education. Fifty-three credits (men), fifty-one credits (women) in Health and Physical Education in addition to Health and Physical Education 15abc, 16abc; General 13abc; Education 135, 153. Pre-physical therapy students and students minoring in biological sciences take Zoology 10 in place of General 13abc.

The following courses must be completed by all students: Health and Physical Education 19, 20, 32, 36, 45c, 70, 121, 137, 141, 148, 150.

Women students also take: Health and Physical Education 28, 45ab, 63abc.

Men students also take: Health and Physical Education 40, 60, 61ab, 62ab.

Students may elect to take 5 quarters (23-25 credits) in one language or may elect to substitute for the language 22-23 credits in the following courses: ESP 20; Sociology (8 cr.) 16, 17, 129, 100, 170; Psychology 13; Home Economics 24. All work must be fulfilled in the choice elected by the student. Partial fulfillment in language may not be combined with partial work in other courses to meet this requirement.

FOR UNDERGRADUATES

11abc, 12abc. **FRESHMAN AND SOPHOMORE PHYSICAL EDUCATION (MEN).** 6 Q. Autumn, winter, spring, freshman and sophomore years. Summer, swimming only. 1 cr. each quarter. Practical work in swimming, conditioning exercises, tumbling and apparatus work, competitive games, track, wrestling, tennis, fencing, volleyball, bowling, skiing, golf, and adapted activities. No student will be given the final grade in the last quarter of this course until he has passed the elementary examination in swimming. A total of not more than 6 credits in 11abc and 12abc will be accepted in addition to the 180 credits required for graduation.

11abc, 12abc. **FRESHMAN AND SOPHOMORE PHYSICAL EDUCATION (WOMEN).** 6 Q. Autumn, winter, spring, freshman and sophomore years. 1 cr. each quarter. During the 6 quarters, students are required to participate in one team sport, one individual sport, one dance class and one swimming class. Final grade for the sixth quarter will be withheld until the University swimming test is passed. Both elementary and advanced work in: Basketball, softball, speedball, volleyball, archery, badminton, bowling, fencing, golf, recreative games, riflery, skiing, tennis, tumbling, posture training, calisthenics, swimming and diving, life saving, rhythmic swimming. Basic rhythms, modern dance, folk and square dancing are offered. A total of not

more than 6 credits in 11abc and 12abc will be accepted in addition to the 180 credits required for graduation.

14abc. **ACTIVITY SKILLS.** 3 Q. Autumn, winter, spring. 14a, b or c. Summer. 1 cr. Students may enter any quarter. Prerequisite, 11abc, 12abc, or consent of instructor. This course intended to give students an opportunity to become more proficient in basic skills by participating in activity classes of 11abc and 12abc. Students may not repeat an activity in which they have received credit and may not register in Varsity Sports for credit in this course. A total of not more than 3 credits will be accepted in this course. Credits earned will be in addition to the 180 required for graduation.

15abc, 16abc. **FRESHMAN AND SOPHOMORE PHYSICAL EDUCATION (MEN MAJORS AND MINORS).** 6 Q. Autumn, winter, spring, freshman and sophomore years. Summer, swimming only. 1 cr. each quarter. 15abc offered 1954-55 and alternate years thereafter. 16abc offered 1953-54 and alternate years thereafter. (15a) Conditioning exercises, (15b) Volleyball and badminton, (15c) Wrestling (16a) Tumbling and apparatus, (16b) Swimming, (16c) Individual sports. NOTE: This course will satisfy the University requirement of six quarters of required Physical Education. Students who elect to take varsity sports will register for such sports as 11abc, 12abc. Such varsity participation will be in addition to the required work in 15abc and 16abc. Credits earned in 11abc, 12abc, 15abc or 16abc will be in addition to the 180 credits required for graduation.

15abc, 16abc. **FRESHMAN AND SOPHOMORE PHYSICAL EDUCATION (WOMEN MAJORS AND MINORS).** 6 Q. Autumn, winter, spring freshman and sophomore years. 1 cr. each quarter. Object to develop skill and familiarity with a variety of physical education activities. (15a) Volleyball, speedball, recreational sports; (15b) Basketball, tumbling; (15c) Softball, tennis; (16a) Basic dance, modern dance, swimming; (16b) Tap dance, social dance, fundamentals of movement; (16c) Folk dance, square dance, archery. These courses will satisfy the University requirement of six quarters of required physical education. Credits earned in 11abc, 12abc, 15abc or 16abc will be in addition to the 180 credits required for graduation.

19. **INTRODUCTION TO PHYSICAL EDUCATION.** 1 Q. Winter. Summer. 3 cr. Prerequisite, major or minor in Physical Education or consent of instructor. Principles of physical education, historical development, present application; contemporary organizations in the field; relationships with other fields and with education in general. Designed as an orientation course for prospective majors and minors.

20. **HUMAN ANATOMY.** (Students who have taken the former course H. & P.E. 20b may not receive credit in this course). 1 Q. Autumn. Summer (odd years). 5 cr. Prerequisite, sophomore standing. The systems of the body and the structure of organs composing these systems.

28. **PERSONAL HEALTH PROBLEMS (WOMEN).** 1 Q. Winter. 2 cr. Prerequisite, major or minor in Physical Education or consent of instructor. Fundamentals of healthful living, with particular emphasis upon problems which frequently arise in connection with the teaching of physical education.

32. **FIRST AID.** 1 Q. Autumn. Winter. Summer. 2 cr. Recognition and treatment of common injuries. Red Cross certification may be secured on completion of the course.

36. **TECHNIQUES OF TEACHING SWIMMING.** 1 Q. Spring. Summer (even years). 2 cr. Prerequisite, sophomore standing and consent of instructor. Methods of teaching swimming and use of tests for classifying students.

40. **CARE AND PREVENTION OF ATHLETIC INJURIES.** 1 Q. Winter. Summer. 2 cr. Prerequisite, for majors, Health & Physical Education 121; for others, consent of instructor. Concurrent registration in H. & P.E. 121 and this course acceptable. Common athletic injuries, their causes, prevention and care. Practical work in bandaging and wrapping.

45abc. **DANCE METHODS AND MATERIALS.** 3 Q. Autumn, winter, spring. 2 cr. each quarter. Prerequisite, sophomore standing. (a) Basic dance. (b) Tap and social dance. (c) Folk dancing and square dance.

S58. **ADVANCED COACHING TECHNIQUES.** 1 Q. Summer. One week. 1 cr. Prerequisite, sophomore standing. Designed as an intensive training course in special techniques of coaching football and basketball and in athletic training. (Special coaching school).

59. **COACHING OF BASEBALL.** 1 Q. Spring. 2 cr. Prerequisite, sophomore standing.

60. **COACHING OF BASKETBALL.** 1 Q. Autumn, 4 cr. Summer, 2 cr. Open to junior men. Theory and practice in handling work in basketball.

61ab. **COACHING OF TRACK.** 2 Q. Winter, spring. 2 cr. each quarter. Summer, 61a or b. 2 cr. Open to junior men. (a) Theory. (b) Practice.

62. COACHING OF FOOTBALL. 1 Q. Spring. 4 cr. Summer. 2 cr. Open to men of at least sophomore standing.

63abc. TEACHING OF SPORTS FOR WOMEN. 3 Q. Autumn, winter, spring. 2 cr. each quarter. Summer, 63a, b or c. Prerequisite, sophomore standing. Course includes methods and materials. (a) Volleyball, tennis. (b) Basketball, badminton. (c) Softball, archery.

S65. INTRODUCTORY ACTIVITIES FOR HIGH SCHOOL GIRLS. 1 Q. Summer. 4 cr. Prerequisite, junior standing. Methods, materials and problems of organization of different phases of the high school program; folk, square and social dancing, individual sports, recreational activities, basketball, volleyball and softball.

70. TEACHING PHYSICAL EDUCATION ACTIVITIES. 1 Q. Autumn. Winter. Spring. 1-2 cr. Prerequisite, H. & P.E. 15abc, 16abc or consent of instructor. Assignment of teaching projects in college classes, under supervision.

FOR UNDERGRADUATES AND GRADUATES

111. WATER SAFETY AND LIFE SAVING. 1 Q. Spring. Summer (odd years). 2 cr. Prerequisite, Red Cross Senior Life Saving Certificate. Instructor's course in life saving and water safety Red Cross Instructor's Certificate awarded upon successful completion of requirements, providing student has reached 19th birthday.

121. APPLIED ANATOMY. (Credit will not be allowed to students who have taken the recent or former course H. & P.E. 20a or 21.) 1 Q. Winter. Summer (even years). 5 cr. Prerequisite, junior standing. A study of the bones, muscles and joints of the body. Consideration is given to bodily movements, joints mechanics and the action of muscles in relation to physical education and activities of daily life.

132. INSTRUCTOR'S FIRST AID. 1 Q. Spring. Summer (even years). 2 cr. Prerequisite, Advanced Red Cross Certificate in First Aid. Techniques and practice in teaching first aid. Red Cross Instructor's Certificate awarded upon successful completion of requirements providing student has reached 20th birthday.

134. PLAYGROUNDS. 1 Q. Autumn. 4 cr. Prerequisite, junior standing. History, construction, equipment, problems, management, methods of conducting and practical working supervision of playgrounds; theory of play.

135. METHODS OF TEACHING PHYSICAL EDUCATION. 1 Q. Autumn. Summer (even years). 4 cr. Prerequisite, junior standing or consent of instructor. Required of all teaching majors and minors in Health and Physical Education. Consideration of materials suitable for the junior and senior high school programs. Demonstrations and practice in techniques of teaching activities using mass class and squad organization; techniques of lesson planning. Students may not receive credit for this course and Educ. 135.

136. KINESIOLOGY. 1 Q. Winter. Summer (odd years). 5 cr. Prerequisite, H. & P.E. 121. An advanced study of muscle action and joint mechanics of the body.

137. PROGRAMS IN PHYSICAL EDUCATION (formerly School Gymnastics). 1 Q. Spring. Summer (odd years). 4 cr. Prerequisite, H. & P.E. 135. Theory and practice in selection and teaching of physical education for children of various age levels. Attention given to factors of growth and development as they are related to physical education.

141. PREVENTIVE AND CORRECTIVE PHYSICAL EDUCATION. 1 Q. Spring. Summer (even years). 5 cr. Prerequisite, H. & P.E. 121. Methods of preventing and detecting the more common physical defects which come to the attention of the physical educator and consideration of the possible follow-up programs the doctor may advise.

148. PHYSIOLOGY OF EXERCISE. 1 Q. Winter. Summer. Given in summer of 1953 and alternate summers. 2 cr. Prerequisite, junior standing. The physiological effects of the different types of exercises on the functions of the human body.

150. ORGANIZATION AND ADMINISTRATION. 1 Q. Winter. Summer (odd years). 4 cr. Open to junior major students. Principles and policies for the organization and administration of high school physical education departments. Management of the physical education plant.

151. CURRICULUM CONSTRUCTION. 1 Q. Winter. 3-4 cr. Prerequisite, H. & P.E. 137. Classification and analysis of physical education activities; criteria for selection of activities; construction of programs for specific situations.

152. INTRODUCTION TO PHYSICAL THERAPY. 1 Q. Spring. 4 cr. Prerequisite, H. & P.E. 141 or concurrent registration. Theory and practice of massage. A more detailed study of the treatment of defects which come within the field of physical education.

153. HEALTH EDUCATION. 1 Q. Spring. Summer (even years). 4 cr. Open to junior students. Required of all teaching majors and minors in Health and Physical Education. The aims, objectives, methods and possible curricula for teaching health education in the junior and senior high schools. Students may not receive credit for this course and Educ. 153.

SI154. PROBLEMS IN PHYSICAL EDUCATION (WOMEN). 1 Q. Summer. 2-4 cr. Prerequisite, junior standing and equivalent of teaching minor in physical education. Class and department management, policies. Problems involved in competition, intramurals, GAA's, teaching of sex hygiene, camping activities, recreational leadership. Individual projects.

160. SEMINAR. 1 Q. Autumn. Winter. Spring. Summer. 1-3 cr. each quarter. Prerequisite, junior standing and consent of instructor. A study of the problems connected with the administration of community and school health and physical education programs by means of reviews of current literature and topical discussions. A maximum of 3 credits may be earned in this course.

SI161. SURVEY OF PROFESSIONAL LITERATURE. 1 Q. Summer. 2 cr. Prerequisite, junior standing and equivalent of teaching minor in physical education. Survey of recent research, current developments in program content, and in tests and measurements. Study of new and useful magazines and books.

165. INTRODUCTION TO TESTING. 1 Q. Autumn. Summer (even years). 3 cr. Prerequisite, senior standing. Orientation to testing and measuring, administrative uses of tests, elementary statistical techniques and procedures.

170abc. RECREATIONAL LEADERSHIP. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Prerequisite, junior standing. Students may enter any quarter. (a) Philosophy of recreation, theory and practice of group leadership and program media skills in relation to various age groups. (b) An investigation of the forces, resources, and interests required to provide a total community recreation program. (c) Philosophy of camping, theory and practice of group leadership and recreational skills in relation to organized camping. Administration under joint supervision with the Department of Sociology and Anthropology. Students may not receive credit for this course and the identical course Soc. 170abc.

FOR GRADUATES

203. ADVANCED TESTS AND MEASUREMENTS. 1 Q. Winter. Summer (odd years). 4 cr. Prerequisite, H. & P.E. 165 or equivalent. Study of specific tests for evaluation of organic, neuromuscular, psychological and social outcomes. Practice in construction, application of tests and interpretation of results.

204. RESEARCH. 1 Q. Any quarter. Credit variable. A maximum of 15 credits may be earned in this course.

HISTORY AND POLITICAL SCIENCE

Professors Edward E. Bennett, J Earl Miller (Chairman), Paul C. Phillips, Melvin C. Wren; Associate Professors Oscar J. Hammen, Robert T. Turner; Assistant Professors Eugene K. Chamberlin, Jules A. Karlin, Thomas Payne, Ellis L. Waldron; Instructor David W. Smith.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN HISTORY AND POLITICAL SCIENCE. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in History, Political Science, or History and Political Science. A student may offer a combined major with a minimum of 50 credits in History and Political Science or he may offer either History or Political Science with a minimum of 45 credits. In any case twenty of these credits must be selected from courses numbered above 100, including 104. History 12 and Political Science 14 are recommended to all majors.

History majors must elect either American or European History as their area of concentration. They must complete at least ten hours in the alternative field as well as a minimum of twelve hours of Political Science.

Political Science majors will be required to complete a minimum of nine hours of European and eight hours of American History. Specialization is possible in Government and Public Administration or International Relations and Foreign Service.

Students with permission, may offer credit earned in Economics 103, 104, 105, 161 and in Journalism 90 in partial fulfillment of the major requisites for a degree. Either the completion of five quarters of a foreign language

or the demonstration of a satisfactory reading knowledge of historical or political science materials in such language is required. Every student must pass a Senior Comprehensive examination.

HISTORY

FOR UNDERGRADUATES

12ab. POLITICAL AND ECONOMIC DEVELOPMENT OF MODERN EUROPE. 2 Q. Autumn, winter. 5 cr. each quarter. Open to all students. Students may enter either quarter. (a) 1500-1815. The beginning of Modern Europe; the Protestant Revolt; the Age of Louis XIV; the rise of Prussia and of Russia; the Old Regime; the Industrial and the French Revolutions; (b) 1815-1949. Liberalism versus Reaction; Nationalism; Imperialism; World Politics; the First and Second World Wars.

13abc. ENGLISH HISTORY. 3 Q. Autumn, winter, spring. Summer. 3 cr. each quarter. Prerequisite, sophomore standing. Students may enter any quarter. The political, economic and social history of Great Britain. (a) to 1485; (b) 1485-1715; (c) 1715-1902.

15. HISTORY OF GREECE. 1 Q. Autumn. Summer. 4 cr. Prerequisite, sophomore standing. The political, cultural, and social development of ancient Greece from prehistoric times to the Roman Conquest.

16. HISTORY OF ROME. 1 Q. Spring. Summer. 4 cr. Prerequisite, sophomore standing. The political, cultural and social development of Rome from the earliest times to the death of Justinian, 565 A.D.

21abc. UNITED STATES HISTORY. 3 Q. Autumn, winter, spring. 4 cr. each quarter. Summer. 2 or 4 cr. Prerequisite, sophomore standing. Students may enter any quarter. (a) 1600-1815. Colonial beginnings and progress; the Revolution, Confederation and Constitution; early political development; the War of 1812; (b) 1815-1890. The new nationalism; sectionalism; Civil War and Reconstruction; the New West; agricultural and industrial development; (c) 1890-1951. Capitalism and constitutional changes; the Progressive Movement; World War I; the Depression and the New Deal; World War II.

29. FRENCH REVOLUTION AND NAPOLEONIC ERA. 1 Q. Spring. 4 cr. Prerequisite, sophomore standing. Political, economic and social developments in France and the international reactions to the revolution.

30ab. EUROPE IN THE 19th CENTURY. 2 Q. Autumn, winter. Summer. 3 cr. each quarter. Students may enter either quarter. Prerequisite, sophomore standing. The internal political, economic and social development of France, Germany, Austria, and Italy. (a) 1815-1870. (b) After 1870.

33. MEDIEVAL EUROPE. 1 Q. Autumn. 3 cr. Prerequisite, sophomore standing. The political, economic and social development of Europe from the barbarian invasions to 1300.

34. RENAISSANCE AND REFORMATION. 1 Q. Spring. 3 cr. Prerequisite, sophomore standing. The political, economic and social development of Europe from 1300 to 1600.

35. THE OLD REGIME. 1 Q. Winter. 3 cr. Prerequisite, sophomore standing. The political, economic, and social development of Europe from 1600 until the outbreak of the French Revolution.

FOR UNDERGRADUATES AND GRADUATES

101. AMERICAN FRONTIERS. 1 Q. Autumn. 3 cr. Prerequisite, course 21abc. A survey of frontiers in America from the first settlements on the continent to the end of the 19th century. Emphasis is placed on the political, economic and social factors of frontier life and the reaction of the frontier upon American and European history.

102ab. HISTORY OF THE NORTHWEST. 2 Q. Winter, spring. 3 cr. each quarter. Prerequisite, course 21abc. Students may enter either quarter. The most significant factors in the history of the northwestern states and their relation to the nation.

103. THE EARLY 20th CENTURY (1900-1933). 1 Q. Spring. 3 cr. Prerequisite, junior standing and a college course in modern European history. Internal development of Britain and of the continental powers. Colonial development and international rivalry prior to the First World War. The War and its aftermath.

104. METHODS AND MATERIALS. 1 Q. Autumn. Spring. Summer. 3 cr. Prerequisite, junior standing with 25 credits in History and Political Science. Methods of investigation, evaluation, and synthesis in historical writing; with a survey of the technical literature of the subject. Students with credit in Political Science 104 may not register for this course.

105ab. PROBLEMS IN HISTORY AND IN POLITICAL SCIENCE. 2 Q. Winter, spring. Summer. 2-4 cr. each quarter. Prerequisite, course 104.

Study or research in fields selected according to the needs and the objectives of the individual student. Students may not receive credit for this course and the identical course Pol. Sci. 105.

110. THE BRITISH EMPIRE. 1 Q. Spring. 4 cr. Prerequisite, junior standing and course 12b or 13abc. English exploration and colonization. The First British Empire. Developments in the 19th century. The Empire today.

111. MEDIEVAL CIVILIZATION. 1 Q. Spring. 3 cr. Prerequisite, junior standing. Either course 13a or 33 is a desirable background. Institutional, social, and cultural progress in the Middle Ages.

113. REPRESENTATIVE AMERICANS. 1 Q. Autumn. 4 cr. Summer. 3 cr. Prerequisite, course 21abc. Studies in American biography.

114ab. RUSSIA AND POLAND. 2 Q. Autumn, winter. 4 cr. each quarter. Prerequisite, junior standing and a college course in modern European history. 114a required for registration in 114b. (a) Beginnings of Russia. Early expansion. Russia and the West to 1800. (b) Russia in the 19th and 20th centuries.

117ab. HISTORY OF THE FAR EAST. 2 Q. Autumn, winter. 4 cr. each quarter. Prerequisite, junior standing and a college course in Modern European History. History 117a required for registration in 117b. The political, economic and social aspects of the modernization of China, Japan, and selected minor states. The conflicting interests of the Great Powers in the East. World War II.

119. CONSTITUTIONAL HISTORY OF THE U. S. 1 Q. Spring. 4 cr. Prerequisite, course 21abc. The origin and growth of the constitutional in relation to the institutional development of the United States.

121ab. CENTRAL EUROPE. 2 Q. Winter, spring. 4 cr. each quarter. Students may enter either quarter. Prerequisite, junior standing and a college course in modern European history. The growth and development of the states of Central Europe and the Balkans since early modern times.

122. MONTANA HISTORY. 1 Q. Winter. Summer. 3 cr. Prerequisite, 2 quarters of United States History. Early settlements, gold mining, the development of territorial and state government, silver and copper mining, agriculture, the changes in economic and social conditions.

123abc. HISPANIC-AMERICAN HISTORY. 3 Q. Autumn, winter, spring. 4 cr. each quarter. Prerequisite, junior standing. 123a should precede 123b; 123ab should precede 123c. (a) Geography, history and culture of the Iberian Peninsula and of pre-conquest Latin America. (b) The Portuguese and Spanish exploration, conquest and settlement of Latin America; the era of wars for independence in Europe and in America. (c) The Hispanic-American nations in the 19th and 20th centuries; growth in political, economic and cultural strength; international relations; Spanish and Portuguese history to present day.

125. ECONOMIC HISTORY OF THE UNITED STATES. 1 Q. Spring. 4 cr. Prerequisite, junior standing and either course 21abc or Economics 14ab. Colonial economy; the expansion of the United States; industrial and pioneer economics; the heyday of laissez-faire; the agrarian movement; war and post-war prosperity; the great depression and recovery.

126. ECONOMIC HISTORY OF EUROPE. 1 Q. Spring. Summer. 4 cr. Prerequisite, junior standing and a course in modern European history or Economics 14ab. The economic development of Europe from the early Middle Ages to the present time.

127ab. ENGLISH CONSTITUTIONAL HISTORY. 2 Q. Autumn, winter. 4 cr. each quarter. Prerequisite, course 13ab. (a) English institutional development to the end of the Middle Ages; (b) English institutions since the Middle Ages.

128. AMERICAN COLONIAL HISTORY. 1 Q. Winter. 4 cr. Prerequisite, course 21abc. Discovery and settlement; development of colonial society; government at home and in England; the causes, character and consequences of the American Revolution.

129. SOCIAL AND CULTURAL HISTORY OF THE UNITED STATES. 1 Q. Summer. 4 cr. Prerequisite, course 21abc. English 59abc is desirable. An examination of attitudes in political, economic and social questions and of appreciation of amusements and esthetics.

131. RECENT AMERICAN HISTORY. 1 Q. Spring. Summer. 4 cr. Prerequisite, course 21c. The internal affairs and external relationships of the United States in the 20th century.

132. CONTEMPORARY EUROPEAN HISTORY. 1 Q. Spring. 4 cr. Summer. 2 or 4 cr. Prerequisite, junior standing and a college course in modern European history. The internal affairs and the external relationships of the principal European states since 1933.

139. HISTORY OF CANADA. 1 Q. Autumn. 4 cr. Prerequisite, course 21ab. A unified account of the history of Canada to the present time, with

emphasis on Canadian-American diplomatic and economic relations; the growth of the Canadian west.

142. ANCIENT NEAR EAST. 1 Q. Spring. 4 cr. Prerequisite, junior standing. An examination of the origin and growth of the Ancient Near Eastern empires and the Western cultural heritage from these cultures.

147. ECONOMIC HISTORY OF ENGLAND. 1 Q. Autumn. Summer. 4 cr. Prerequisite, junior standing and course 12ab or course 13abc. The economic and social background and development of modern England; the growth of Empire.

165. HISTORY OF MEXICO SINCE INDEPENDENCE. 1 Q. Spring. 4 cr. Prerequisite, junior standing and 8 credits in history. History 123abc recommended (May be taken concurrently). Political, economic, and cultural development of Mexico since 1820; international relations; present conditions and problems.

FOR GRADUATES

200. SEMINAR IN AMERICAN HISTORY. 3 Q. Autumn, winter, spring. Summer. Credit variable. Open to graduates who have 30 credits in history or political science, including courses 21abc and 104. A study of special problems in American History.

201. SEMINAR IN EUROPEAN HISTORY. 3 Q. Autumn, winter, spring. Summer. Credit variable. Prerequisite, 30 credits in history, or in political science, including course 104. A study of special problems in European history.

POLITICAL SCIENCE

FOR UNDERGRADUATES

14. INTRODUCTION TO GOVERNMENT. 1 Q. Spring. 5 cr. Open to all students. An introductory study of the theories and practices of government in the world today. The nature of the state, constitutions, democracy, totalitarianism, civil rights, and pressure groups.

17ab. AMERICAN POLITICAL INSTITUTIONS. 2 Q. Autumn, winter, spring, summer. 4 cr. each quarter. Prerequisite, sophomore standing. (a) The constitutional bases of the national government; instrumentalities of popular control; organizations of the national legislative, executive, administrative and judicial agencies. (b) The functions and services of government at the national, state, and local levels; organization of state and local government. (Students who have credit in the former Political Science 17 are not eligible for 17a and those who have credit in the former Political Science 18 are not eligible for 17b.)

20. COMPARATIVE GOVERNMENT. 1 Q. Spring. 4 cr. Prerequisite, sophomore standing and either course 12b, 14 or 17a. A study of representative types of government; constitutional beginnings, organization, methods of legislation and administration.

37. ELEMENTS OF LAW. 1 Q. Spring. 3 cr. Prerequisite, course 14 or 17a. The evolution of the Anglo-American legal systems; the development of the English common law, and of courts and the procedures. Contributions from the canon law and the law merchant; the rise of equity. American developments.

45. POLITICAL PARTIES AND ELECTIONS. 1 Q. Spring. 4 cr. Summer. 3 cr. Prerequisite, Pol. Sci. 14 or 17a or 2 quarters of History 21abc. The American party system, the organization and work of American political parties, the conduct and control of nominations and elections, and some comparisons with the composition and process of European political parties.

55ab. POLITICAL GEOGRAPHY. 2 Q. Autumn, winter. 3 cr. each quarter. Open to all students. (a) The nature and scope of geopolitics. Geopolitical analysis of the United States and the Western Hemisphere of the Soviet Union and the British Commonwealth of Nations. (b) Geopolitical analysis of China, Japan, the Asian nations of the Near and Middle East, and Africa. Geopolitical analysis of the Cold War.

FOR UNDERGRADUATES AND GRADUATES

104. METHODS AND MATERIALS. 1 Q. Autumn. Spring. Summer. 3 cr. Prerequisite, junior standing with 25 credits in history and political science. Methods of investigation, evaluation and synthesis in Political Science with a survey of the technical literature of the subject. Students who have secured credit in History 104 may not register for this course.

105ab. PROBLEMS IN HISTORY AND IN POLITICAL SCIENCE. 2 Q. Winter, spring. Summer. 2-4 cr. each quarter. Prerequisite, course 104. Study or research in fields selected according to the needs and the objectives of the individual student. Students may not receive credit for this course and for the former History 105.

106ab. INTERNATIONAL PUBLIC LAW. 2 Q. Autumn, winter. 3 cr.

each quarter. 106a required for registration in 106b. Prerequisite, junior standing and 15 credits in the department. The law of nations in relation to peace, war and neutrality.

107ab. DIPLOMATIC HISTORY OF EUROPE. 2 Q. Autumn, winter. Summer, 107b. 3 cr. each quarter. Prerequisite, junior standing and 15 credits in the department. Students may enter either quarter. International relations and world politics from the Congress of Vienna to World War I.

108. PRESENT WORLD PROBLEMS. 1 Q. Spring. 3 cr. Prerequisite, course 103 or 107ab. Problems leading to or arising out of the Second World War.

109. AMERICAN POLITICAL PROBLEMS. 1 Q. Autumn. 4 cr. Prerequisite, course 21bc or 17ab. Present day political problems, such as governmental reorganization, taxation and budget, states' rights, and powers of Congress and the Chief Executive.

115ab. THE DEVELOPMENT OF POLITICAL THOUGHT. 2 Q. Autumn, winter. 4 cr. each quarter. Prerequisite, junior standing and 12 credits in the department. 115a is recommended for 115b. (a) The development of Western political thought from ancient origins to the early modern period. (b) Western political thought from its early modern roots to the twentieth century. (Students who have credit in the former 115 are not eligible for 115ab.)

116abc. PUBLIC ADMINISTRATION. 3 Q. Autumn, winter, spring. 4 cr. Prerequisite, junior standing and either course 14 or 17ab; 116a is prerequisite to 116b and recommended for 116c. (a) The development of public administration in relation to other branches of government. Conduct of administrative functions, processes of centralization and integration, relation of administration to the public, to law and to politics. (b) Problems and techniques of public administration. (c) Systems of public personnel administration; promotion, classification, employee organizations, service ratings, training, and retirement systems. Some attention to American state and local and to European personnel systems.

120a. AMERICAN FOREIGN RELATIONS. 1 Q. Winter. 4 cr. Prerequisite, junior standing. Course 21bc desirable. The machinery of American diplomacy, inter-relation of geo-politics, national policy, military policy and diplomacy; basic American foreign policies and their development to the end of the 19th century.

120b. AMERICAN FOREIGN RELATIONS. 1 Q. Spring. 4 cr. Prerequisite, junior standing and course 21c or 120a. The United States in world affairs since 1900. Theodore Roosevelt and his era; Dollar Diplomacy, Woodrow Wilson and World War I; the diplomacy of normalcy; Franklin Roosevelt and World War II; the postwar eras.

124. INTERNATIONAL ORGANIZATIONS. 1 Q. Spring. Summer. 3 cr. Prerequisite, junior standing. The efforts for and machinery of international cooperation; the Hague tribunal; the Pan-American Union; the International Labor Office; the World Court; the League of Nations; the UN.

130. AMERICAN POLITICAL THOUGHT. 1 Q. Spring. 4 cr. Summer, 3 cr. Prerequisite, junior standing and either 115ab, 8 credits from 14 and 17ab, or History 21bc. American political thought, both systematic and popular, from colonial origins to the present.

133ab. THE AMERICAN CONSTITUTIONAL SYSTEM. 2 Q. Winter, spring. Continuous. 3 cr. each quarter. Prerequisite, 17ab or 21bc; 133a required for 133b. The Constitution of the United States in the jurisprudence of the Supreme Court; jurisdiction of the courts; fundamental principles of constitutional law; judicial interpretation; federal relations.

134. THE PRINCIPLES OF ADMINISTRATIVE LAW. 1 Q. Winter. 3 cr. Prerequisite, junior standing and course 17a. Administrative law in the United States with reference to other countries. Administrative authorities, the scope and the limitations of their powers, remedies, judicial control of administrative action.

136. GOVERNMENT REGULATION OF BUSINESS. 1 Q. Autumn. 4 cr. Prerequisite, junior standing and course 17a. The necessity for and the theories of government regulation; regulation in practice by legislation, by commission, and by judicial decision; the government in business.

143abc. PROBLEMS OF MONTANA GOVERNMENT. 3 Q. Autumn, winter, spring. 4 cr. each quarter. Prerequisite, 12 hours in the department including 17ab and the consent of the instructor. (a) Problems in state government, other than legislative. (b) Problems in state government, legislative. (c) Problems in local government. Particular agencies and functions of state and local government will be selected for research and field study; visits to governmental agencies; discussions with public officials and with representatives to citizen organizations. Students may earn no more than 8 credits. 143b not given 1953-54.

145. INTERNATIONAL RELATIONS. 1 Q. Winter. 4 cr. Pre-

requisite, junior standing. A general introduction to: The nation-state system; factors of national power and policy; forces inducing tension; legal and institutional devices for adjustment of conflict.

FOR GRADUATES

203. SEMINAR IN POLITICAL SCIENCE. 3 Q. Autumn, winter, spring. Summer. Credit variable. Prerequisite, 30 credits in Political Science. A study of special problems in political science.

HOME ECONOMICS

Professors Helen Gleason (Chairman), Anne C. Platt; Assistant Professor Helen Hollandsworth; Instructors Artie Dawes, LaVerne Olsen.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN HOME ECONOMICS. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Home Economics. Fifty or more credits in Home Economics, selected from courses listed under one of the following groups, and in addition courses in each group required from other departments.

1. **GENERAL:** Home Economics 17abc, 18, 80, 82, 119, 120, 122, 124, 125, 127, 128, 129, 131, 138. In addition a student must take Chemistry 11abc or 13ab, 19; Fine Arts 31abc.

2. **TEACHING:** Home Economics 17abc, 18, 80, 82, 119, 120, 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 138. In addition a student should select teaching minors acceptable to the School of Education and must take the following: Chemistry 11abc or 13ab, 19; Education 25abc, 26, 163, 183. Fine Arts 31abc or General 15abc are advised. These courses prepare teachers for vocational Home Economics in reimbursed schools.

3. **INSTITUTIONAL MANAGEMENT:** Home Economics 17abc, 80, 119, 122, 123, 125, 133, 134, 135, 138, 198. A major student should also select one or more from the following: Home Economics 124, 127, 128, 129, 131. In addition, to qualify for an internship, the following are required: Chemistry 11abc or 13ab, 19, 103; Business Administration 11a, Bacteriology 19; Zoology 24; Sociology 16; Economics 14ab; and a minimum of 5 credits in Education.

4. **TEXTILES AND CLOTHING:** Home Economics 17abc, 18, 24, 80, 82, 119, 120, 124, 127, 128, 129, 131, S86, 163. In addition a student must take Chemistry 11abc, or 13ab, 19; and at least 30 credits in Fine Arts.

FOR UNDERGRADUATES

17abc. **INTRODUCTION TO HOME ECONOMICS.** 3 Q. Autumn, winter, spring. 5 cr. each quarter. Students may enter any quarter. (a) Education for personal and family life today. (b) Selection and preparation of food. (c) Selection, planning, and construction of clothing.

18. **CLOTHING DESIGN.** 1 Q. Winter. 4 cr. The principles of design and their application to clothing.

19. **FOOD CONSERVATION.** 1 Q. Summer. 5 cr. Open to all students. The fundamental methods used in conserving, processing, and storing the various food for family needs.

24. **ELEMENTARY NUTRITION.** 1 Q. Spring. Summer. 5 cr. No prerequisite. Open to non-majors. A study of fundamental principles of adequate human nutrition.

S50. **HOME CARE OF THE SICK.** 1 Q. Summer. 2 cr. A course planned in cooperation with the Red Cross to train teachers to become authorized instructors in home care of the sick. It provides information and practice of skills for care of the sick at home. Red Cross certification may be secured on completion of the course.

80. **PROBLEMS IN HOME EQUIPMENT.** 1 Q. Autumn. 4 cr. Materials, specifications, selection, care, and use of equipment.

82. **TEXTILES.** 1 Q. Spring. 4 or 5 cr. Fibers, their manufacture and use; physical and chemical tests to aid in the selection of clothing and household furnishings.

S86. **WEAVING.** 1 Q. Summer. 1-4 cr. Open to all students. A lecture and laboratory course in weaving textiles, using traditional and historic examples as source materials.

87. **ADVANCED WEAVING.** 1 Q. Any quarter. 5 cr. Offered by extension. Open to students with previous weaving experience. A lecture and laboratory course in advanced weaving techniques. Draft writing and original designs are studied.

FOR UNDERGRADUATES AND GRADUATES

119. HOUSE PLANNING AND FURNISHING. 1 Q. Winter. Summer. 5 cr. Prerequisite, junior standing. The aesthetic, economic, and hygienic problems in house planning and furnishing.

120. CLOTHING. 1 Q. Winter. 5 cr. Prerequisites, Home Economics 17c and 18; 82 recommended. The clothing problem of the family studied from the economic and social point of view.

122. NUTRITION. 1 Q. Autumn. 5 cr. Prerequisite, Home Economics 17b and Chemistry 19. Dietetics given in the light of the chemistry and physiology of digestion.

123. NUTRITION IN DISEASE. 1 Q. Spring. 4 cr. Prerequisite, Home Economics 122. The symptoms of disease, prophylaxis and feeding in disease.

124abc. CHILD DEVELOPMENT. 3 Q. Autumn, winter, spring. Summer. 3-5 cr. Prerequisite, Psychology 11 and junior standing. Development of motor, linguistic, and intellectual skills and abilities of young children studied through observation and participation in the Nursery School. May be repeated to a maximum of nine credits.

125. CHILD NUTRITION. 1 Q. Winter. 3 cr. Prerequisite, Home Economics 122. The science of human nutrition as it applies to children, using the University Nursery school as a laboratory for many of the problems studied.

NOTE: Courses 127 and 128 must be taken concurrently. The two courses require approximately 24 hours a week for lecture and laboratory time.

127. HOME LIVING CENTER. 1 Q. Autumn. Winter. Spring. Summer. 5 cr. Prerequisite, Home Economics 122 or consent of instructor and senior standing. Residence in the home living center for one term, applying principles gained in other courses in home problems.

128. HOME MANAGEMENT. 1 Q. Autumn. Winter. Spring. Summer. 2 cr. Prerequisite, Home Economics 122 or consent of instructor and senior standing. Management studies and discussion presented on problems in the home living center.

129. PROBLEMS IN FAMILY LIVING. 1 Q. Autumn. Summer. 3 cr. Prerequisite, Psychology 11 and Home Economics 17abc. A critical study of theories and practices in relation to the home and family life.

131. PROBLEMS OF THE CONSUMER. 1 Q. Spring. Summer. 3 cr. Prerequisite, 8 cr. in Economics and Sociology and consent of instructor. A critical analysis of problems confronting the consumer.

133. INSTITUTION COOKERY. 1 Q. Autumn. 4 cr. Prerequisite, junior standing, and Home Economics 17ab. Application of scientific principles of cookery to large quantity food preparation; service of foods; menu planning for institutions; food cost accounting. Campus foods units are used as laboratories.

134. INSTITUTION BUYING. 1 Q. Winter. 4 cr. Prerequisite, Home Economics 80 and 133. Includes the methods of selection, purchase and storage of foods for institutions; the selection and care of equipment for institutions; trips to various wholesale markets, hospitals, hotels, etc.

135. INSTITUTION ORGANIZATION AND MANAGEMENT. 1 Q. Spring. 3 cr. Prerequisite, Home Economics 133 and 134. Problems involved in efficient organization and administration of food service units—employment procedures; personnel schedules; records; food costs control; maintenance.

138. EXPERIMENTAL FOODS. 1 Q. Spring. 4 cr. Prerequisite, Home Economics 17b. Special problems are assigned for individual investigation. A study of foods from the scientific experimental point of view, approached by means of experiment and problems dealing with food compositions and preparation.

163. METHODS OF TEACHING HOME ECONOMICS. 1 Q. Winter. Spring. 4 cr. Prerequisite, Education 25ab. The fundamental principles of organization, unit planning, and method of presentation of subject matter. This course introduces the student to the problems of teaching. Students may not receive credit for this course and the identical course Educ. 163.

183. ADVANCED PROBLEMS IN TEACHING HOME ECONOMICS. 1 Q. Spring. Summer. 3 cr. Prerequisite, Education 163 and 26, or consent of instructor. Consideration of problems and procedures dealing with satisfactory homemaking education in the upper grades and in high school. Students may not receive credit for this course and the identical course Educ. 183.

198. PROBLEMS IN HOME ECONOMICS. 1 to 6 Q. Any quarter. Credit variable. Prerequisite, senior standing in Home Economics. Qualified students may select for study special problems of the home and the community in any of the following fields; Nutrition, textiles, child development, advanced design, family economics, teaching.

JOURNALISM

Professors Olaf J. Bue, Andrew C. Cogswell, Edward B. Dugan, James L. C. Ford (Dean); Assistant Professors Dorothy M. Johnson, Ray W. Wight; Professional Lecturers Kenneth Byerly, Melvin Ruder, Mrs. Zelma Hay Schroeder.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, it is recommended that the high school preparation include typing and possibly also shorthand.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN JOURNALISM. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the degree of Bachelor of Arts in Journalism: 56 credits in Journalism in the curriculum recommended below, plus the special journalistic sequence selected by each individual student.

Typing proficiency tests will be given annually in the spring and autumn quarters. Students who do not pass the test will be required to take one quarter of Bus. Ad. 20.

Field trips to study and edit Montana newspapers are made each year as a requirement in the Senior Seminar course. Students taking such trips pay their expenses on a pro rata basis.

THE JOURNALISM CURRICULUM

For certain students who have special journalism interests—in the daily newspaper, in advertising, in radio, in community journalism, in magazine training, in various vocations where women journalists have been especially successful—the School of Journalism recommends the following programs of elective work:

NEWS-EDITORIAL SEQUENCE: In Journalism, in addition to the recommended curriculum, the following courses should be taken: Journalism 17, 25, 36 (for a minimum of three quarters), 42, 90.

ADVERTISING TRAINING: Economics 109; Business Administration 151; Psychology 11, Fine Arts 25a or 25b.

In Journalism, in addition to the recommended curriculum, the following courses should be taken: Journalism 43, 44, 35.

MAGAZINE TRAINING: English 55a. In Journalism, in addition to the recommended curriculum, the following courses should be taken: Journalism 17, 32, 33, 34, 39, 42.

JOURNALISM SPECIALTIES FOR WOMEN: Careers in the combined field of home economics and journalism offer opportunities for women journalism majors. The girl who seeks a journalistic future will find certain fields especially, and often exclusively, open to women in retail and department store advertising and promotion, in women's magazines and specialized publications, and in radio programs for the home.

With this in mind, the School of Journalism recommends the following courses which offer valuable background and training for these and similar positions: Home Economics 18, 24, 82, 119, 124, 131.

All courses suggested under the curricula for Advertising and Radio Journalism will be equally useful for students following this program. In addition to the recommended Journalism curriculum, these Journalism courses should be taken: Journalism 22, 33, 34, 42.

RADIO JOURNALISM: Required: Radio 1. Recommended: Radio 2, 4ab, 5, 8.

In Journalism, in addition to the recommended curriculum, the following courses should be taken: Journalism 45, 46, 47, 48.

COMMUNITY JOURNALISM: In Journalism, in addition to the recommended curriculum, the following courses should be taken: Journalism 23ab, 24, 25, 39, 44.

COMBINED FORESTRY-JOURNALISM CURRICULUM

Careers in forestry and conservation often involve a knowledge of public relations, including the preparation and handling of publicity releases. A joint background in basic forestry and journalism courses often will open other doors to specialized opportunities—on trade and technical publications, or in publicity and promotion for private timber companies.

To help the journalism or forestry major with these special interests, the School of Forestry and the School of Journalism suggest the following courses from which the most appropriate program may be selected: Journalism 11, 17, 32, 33, 34, 35, and Forestry 11abc, 127, 146, 148, 191, and 195. Prerequisites in these Forestry courses will be waived for Journalism majors.

RECOMMENDED CURRICULUM FOR JOURNALISM MAJORS

FRESHMAN YEAR: Journalism 10ab, 11; General 13abc, 15abc; English 12abc; Health and Physical Education 11abc; Military or Air Science 1abc or 21abc.

SOPHOMORE YEAR: Journalism 21ab, 38 (not required of radio journalism majors); History 12ab or 21abc; Economics 14ab; Health and Physical Education 12abc; Military or Air Science 2abc or 22abc; plus 12 to 15 elective credits.

JUNIOR YEAR: Journalism 22ab, 30ab, 37, 40ab, 41, 49; Political Science 17ab; Sociology 16; plus 15 elective credits.

SENIOR YEAR: Journalism 31ab, 100abc; plus 28 elective credits.

Total recommended hours in journalism, 56 hours.

Total recommended hours in general education, 72 hours.

Total elective hours, 58 hours.

Advertising majors are required to take only the first quarter of Journalism 22. Advertising and radio journalism majors are required to take only the first quarter of Journalism 31.

FOR UNDERGRADUATES

10ab. **INTRODUCTION TO JOURNALISM.** 2 Q. Autumn, winter. 2 cr. each quarter. Open to all students; required of freshman journalism majors. Introduction to the field of journalism; elementary work in reporting and copyreading; analysis of the opportunities and various professions in journalism; ethics of journalism; journalism in the world today.

11. **THE AMERICAN CITIZEN AND THE PRESS.** 1 Q. Spring. 2 cr. Open to all students; required of freshman journalism majors. A study of the sources of news and information in the American democracy. Methods of judging the reliability of news, and the accuracy of reporting. Consideration of the responsibilities of the press.

17. **ELEMENTARY PHOTOGRAPHY.** 1 Q. Autumn. Winter. Summer. 3 cr. Prerequisite, consent of instructor. Open to non-majors (with priority to upperclassmen). Study of photographic equipment, materials, and facilities with practice in exposing and processing negatives and prints.

21ab. **REPORTING.** 2 Q. Autumn, winter. Spring. Summer. 4 cr. each quarter. Prerequisite, Journalism 10ab or consent of instructor. Open to non-majors. Reporting methods, news story construction, evaluation of news, the coverage of public affairs, press association techniques.

22ab. **REPORTING PRACTICE.** 2 Q. Autumn, winter. Winter, spring. Spring, autumn. 2 cr. each quarter. Prerequisite, Journalism 21ab or concurrent registration. A laboratory and lecture course, involving Kaimin news coverage, presenting reporting and publishing problems.

23ab. **COMMUNITY JOURNALISM.** 2 Q. Autumn, winter. 2 cr. each quarter. Prerequisite, Journalism 21ab. A study of news, editorial, circulation, and advertising problems of weekly and small daily newspapers.

24. **NEWSPAPER MANAGEMENT.** 1 Q. Autumn, winter or spring. 3 cr. Prerequisite, junior standing. The problems of management in the daily and weekly newspaper fields; actual financial setups and operation of newspaper and printing plants; cost-finding practice and systems in general use.

25. **EDITORIAL WRITING.** Offered 1 Q. each year. Autumn, winter, or spring. 3 cr. Prerequisite, junior standing or consent of instructor. Preparation and presentation of editorial interpretation and comment. Editorial history; functions of editorial page.

30ab. **THE COPY DESK.** 2 Q. Autumn, winter. 3 cr. each quarter. Prerequisite, Journalism 21ab or concurrent registration with consent of adviser. (a) Editing local, state, and wire copy; simple headline writing; consideration of ethics and news judgment. (b) Editing local, state, and wire copy; headline writing; newspaper makeup; special editing problems.

31ab. **COPYREADING PRACTICE.** 2 Q. Autumn, winter. Winter, spring. Spring, autumn. 2 cr. each quarter. Prerequisite, Journalism 30ab or concurrent registration. Laboratory and lecture course involving desk work on the Kaimin.

32. **MAGAZINE MAKEUP AND EDITING.** 1 Q. Autumn. 3 cr. Prerequisites, Journalism 38 and junior standing. Theory and practice of editing, layout, and makeup for magazines. Both specialized and general periodicals will be used as models. Practice will include the use of type, illustrations, adapting format to content, and advertising.

33. **MAGAZINE ARTICLE WRITING.** 1 Q. Winter. Summer. 3 cr. Prerequisite, junior standing and consent of instructor. Open to non-majors. The preparation and writing of articles for magazines of general circulation. Techniques of analyzing and selling to magazine markets.

34. TRADE AND TECHNICAL JOURNALISM. 1 Q. Autumn. Spring. 3 cr. Prerequisite, junior standing and consent of instructor. Open to non-majors. The writing and editing of trade and business journals, technical and specialized publications.

35. PROMOTION AND PUBLIC RELATIONS. 1 Q. Any quarter. 3 cr. Prerequisite, junior standing and consent of instructor. Open to non-majors. The techniques of promotion and the handling of public relations.

36. CURRENT EVENTS. 1 Q. Any quarter. 1 cr. May be repeated for 12 quarters. Open to all students. Current history of the world; its background; its relationships and probable influences. Emphasis on current journalistic handling.

37. LAW OF JOURNALISM. 1 Q. Winter. 3 cr. Prerequisite, junior standing or consent of the instructor. The laws of libel, slander, and right of privacy as they affect both press and radio. Contempt of court by publication; newspaper rights in newsgathering; property rights in news; regulatory provisions of state and federal statutes.

38. TYPOGRAPHY. 1 Q. Autumn. Winter. Spring. Summer. 2 cr. Prerequisite, consent of instructor. Students may enter any quarter. Problems of typographical design and application. Elementary work in printing and in the handling of type.

39. GRAPHIC ARTS. 1 Q. Autumn. Winter. Spring. 3 cr. Prerequisite, Journalism 38, or consent of instructor. Open to non-majors. Students may enter any quarter. Study of various printing and engraving processes including letter press, offset lithography, intaglio, electrotype, and stereotype. Attention is paid to the use of inks, paper, color, and other materials of the graphic arts.

40ab. PRINCIPLES OF ADVERTISING. 2 Q. Autumn, winter. Summer, 40a. 3 cr. each quarter. Prerequisite, junior standing. Open to non-majors. Fundamentals of advertising theory and techniques with emphasis on the role of advertising as it applies to the producer, the distributor, the consumer. Analysis of media use and the advertisement itself.

41. ADVERTISING PRACTICE. 1 Q. Autumn. Winter. Spring. 2 cr. each quarter. Prerequisite, Journalism 40ab or concurrent registration. Preparation, promotion, and sale of advertising. Lecture, and staff work on the Kaimin.

42. NEWS PHOTOGRAPHY. 1 Q. Spring. 3 cr. Prerequisite, Journalism 17 or consent of instructor. Photographic reporting with emphasis on picture possibilities, significance, interest, and impact. Practice with Speed Graphic and other news cameras, under artificial and natural lighting conditions.

43. ADVERTISING LAYOUT AND COPY. 1 Q. Spring. 3 cr. Prerequisite, Journalism 40ab or Business Administration 155. Open to non-majors. Application of typographical and advertising principles to preparation of layouts and copy, with practice in sales promotion.

44. RETAIL STORE ADVERTISING. 1 Q. Spring. 3 cr. Prerequisite, Journalism 40ab or Business Administration 155. Open to non-majors. Integration of retail store merchandising among advertising media. Study of technical aspects of advertising schedules for retail stores.

45. NEWSCASTING. 1 Q. Autumn. 3 cr. Prerequisite, Journalism 21ab or consent of instructor. Basic consideration of radio as a news medium; preparation of local news broadcasts.

46. RADIO EDITING. 1 Q. Winter. 3 cr. Prerequisite, Journalism 45 or consent of instructor. Preparation of radio news scripts from wire and local copy; practice in newscasting.

47. SPECIAL EVENTS. 1 Q. Spring. 3 cr. Prerequisite, Journalism 46. Radio interviews, sports, interpretation, and comment; practice in newscasting.

48. RADIO COMMERCIALS. 1 Q. Autumn. Spring. 3 cr. Prerequisite, Journalism 46, junior standing, and consent of instructor. Study of current radio commercials, live and recorded, followed by realistic practice in preparation of copy for particular products and specific accounts.

49. HISTORY OF JOURNALISM. 1 Q. Any quarter. 3 cr. Prerequisite, junior standing or consent of the instructor. Open to non-majors. The historical background of the American press.

90. PUBLIC OPINION. Offered 1 Q. Autumn, winter, or spring. 3 cr. Prerequisite, sophomore standing. Open to non-majors. A study of the theories of public opinion, the factors involved in its formation, and methods used in its measurement.

FOR UNDERGRADUATES AND GRADUATES

100abc. SENIOR SEMINAR. 3 Q. Autumn, winter, spring. Summer, S100. 4 or 6 credits per quarter. A maximum of 18 credits allowed. Prerequisite, senior standing in journalism. An over-all journalism course on

the seminar pattern incorporating the project method. Correlates work of the four years in journalism and other fields, covering: history and ethics of journalism, public opinion and propaganda problems; technological phases of journalism; editorial and advertising techniques; the press as a social institution.

S116. PUBLICATIONS WORKSHOP. 1 Q. Summer. One week. 1 cr. Prerequisite, Journalism 126 or experience as high school publications adviser. Study of problems and procedures involved in supervision and production of printed and mimeographed school newspapers, yearbooks, and radio programs. Demonstrations and laboratory use of printing, mimeographing, photographic and recording equipment. Publication of printed and mimeographed campus newspapers and preparation of radio programs in cooperation with high school students on campus for the Publications Pow Wow.

S117. SCHOOL PUBLIC RELATIONS. 1 Q. Summer. 3 cr. Prerequisite, B.A. degree, teaching experience, or consent of instructor. A course to acquaint school administrators and those in the teaching profession with the principles of developing better understanding among the school, the press, and the community.

S118. SOURCES OF INFORMATION. 1 Q. Summer. 3 cr. Prerequisite, junior standing. The sources of information available to the citizen in modern society: the newspaper, the radio and television, the magazine, and other communications media. Channels and techniques by which news and information is gathered and transmitted.

126. SCHOOL PUBLICATIONS. 1 Q. Spring. Summer. 3 cr. Prerequisite, junior standing and consent of instructor. Open to non-majors. A course for students who plan to teach journalism courses in high schools or act as advisers to school publications. Students may not receive credit for this course and the identical course Education 126.

136. ADVANCED JOURNALISM PROBLEMS. 1-3 Q. Autumn. Winter. Spring. Summer. Credit variable. Prerequisite, junior standing and consent of the dean. Training and research in advanced journalism problems.

FOR GRADUATES

201. RESEARCH IN JOURNALISM. 1-3 Q. Autumn. Winter. Spring. Summer. Credit variable. Prerequisite, graduate standing and consent of the dean. Research in journalism for graduate students.

LAW

Professors Edwin W. Briggs, Charles W. Leaphart (Dean), Carl McFarland, David R. Mason, J. Howard Toelle; Assistant Professors J. C. Garlington, Russell E. Smith, Thomas L. Waterbury; Assistant Professor and Librarian Helen C. McLaury.

REQUIREMENTS FOR ADMISSION. After January 1, 1954 applicants for admission to the School of Law must present credits equal to three-fourths of the work acceptable for a Bachelor's degree at this university or the institution which the applicant has attended. Non-theory courses are not acceptable under the above rule with the exception that required courses in physical education and military drill are acceptable up to 10 per cent of the total credit offered for admission. This work must be done in residence at an approved college or university and have been passed with a scholastic average at least equal to the average required for graduation in the institution attended, computed on the basis of all work for which the student has registered and received a grade, and this average must also be attained by the student in his theory courses. The applicant must have been in attendance at such an institution for nine quarters or six semesters. A graduate of an approved school will be considered as having satisfied the requirements. Where a student has had pre-legal work at Montana State University and at another institution, he must meet the above requirements on credits earned at Montana State University as well as on his entire record.

Special students are not admitted to the School of Law.

SPECIAL REQUIREMENTS FOR UNDERGRADUATE DEGREES IN LAW. Candidates for the Bachelor of Laws degree who enter the School of Law, having satisfied the foregoing requirements, are required to complete:

- (1) Nine quarters of work in a law school of recognized standing, the last three of which must be completed in residence at Montana State University. Two summer sessions of five to six weeks each will be counted as one quarter.
- (2) The first year courses specified below and Civil Procedure II, Courtroom and Office Practice, and Legal Writing.

- (3) A total of 126 credits in law with a grade point average of 2 in all law work in which a grade has been received, and a like grade point average for all the law work for which he has received a grade in this university.

Candidates for the Bachelor of Arts degree with Law as a major must meet the regular University and College of Arts and Sciences requirements for graduation. There is no foreign language requirement for this degree.

Students may also combine Business Administration and Law so as to secure in six years the degree of Bachelor of Science in Business Administration and the degree of Bachelor of Laws.

Any student who has failures in more than nine hours of work standing against him at the end of any year will be dropped from the Law School. Any student who has a failure in one course of six hours or more at the end of his first year will be dropped from the Law School, unless he obtained at least 36 grade points in his other courses; and any student having a deficiency of fifteen or more grade points at the end of his first year will be required to repeat, during the next year in which he is in attendance at the Law School, at least one-half of the hours of work in which he received a grade of D or less. Any student having a deficiency of more than twelve grade points at the end of any subsequent year will be dropped from the Law School.

No student will be recommended for a degree in Law who is markedly deficient in English, or who, in the opinion of the majority of the members of the faculty of the School of Law, is unfitted for admission to the practice of law by reason of a lack of honesty and integrity.

NUMBER OF HOURS OF WORK PERMITTED AND COURSES REQUIRED. No student will be allowed credit in any one quarter for over 15 hours' work in the School of Law; except that in addition, within the discretion of the dean, a student may be allowed to take an examination to remove an incomplete and be given credit upon satisfactory passage of the same. A student may also be allowed 16 credits in the quarter in which he receives credit for legal writing. All first-year work and, in addition, the courses in Practice Court and Legal Writing are required of all candidates for the degree.

CURRICULUM

FIRST YEAR: Agency; Civil Procedure I; Contracts; Criminal Law and Procedure; Orientation; Property; Torts.

SECOND AND THIRD YEARS: Administrative Law (to be given in 1953-54); Bills and Notes; Business Organizations; Civil Procedure II; Conflicts of Law; Constitutional Law; Courtroom and Office Practice; Creditors' Rights; Damages; Domestic Relations; Drafting and Estate Planning; Equity; Evidence; Future Interests; Insurance (not given in 1953-54); Labor Relations; Law of Natural Resources; Legal Ethics; Legal History; Legal Writing; Legislation; Municipal Corporations; Sales; Suretyship and Mortgages; Taxation; Trade Regulations (not given in 1953-54); Trusts; Use of Laws Book; Wills and Administration.

COURSES

ADMINISTRATIVE LAW. 1 Q. Winter. 3 cr. McFarland and Vanderbilt's Cases on Administrative Law.

AGENCY. 2 Q. Winter, spring. Continuous. 4 cr. Seavey's Cases on Agency, 3rd edition.

APPELLATE PRACTICE. 1 Q. Autumn. 2 cr. Smith's Cases and Materials on Appellate Practice.

BILLS AND NOTES. 3 Q. Autumn, winter, spring. Continuous. 6 cr. Smith and Moore's Cases on Bills and Notes, 4th edition.

BUSINESS ORGANIZATIONS. 3 Q. Autumn, winter, spring. Continuous. 9 cr. Frey's Cases and Materials on Corporations and Partnerships.

CIVIL PROCEDURE I. 2 Q. Winter, spring. Continuous. 4 cr. Sunderland's Cases and Materials on Judicial Administration.

CIVIL PROCEDURE II. 2 Q. Autumn, winter. Continuous. 5 cr. Sunderland's Cases and Materials on Judicial Administration.

CONFLICTS OF LAW. 2 Q. Autumn, winter. 1 Q. Summer. Continuous. 6 cr. Cheatham, Dowling, Goodrich, and Griswold's Cases on Conflict of Laws, 3rd edition.

CONSTITUTIONAL LAW. 2 Q. Autumn, winter. Continuous. 6 cr. Dodd's Cases on Constitutional Law, 4th edition.

CONTRACTS. 3 Q. Autumn, winter, spring. Continuous. 9 cr. Williston's Cases on Contracts, 5th edition.

COURTROOM AND OFFICE PRACTICE. 3 Q. Autumn, winter, spring. Continuous. 6 cr. Montana Code of Civil Procedure, Selected Cases and Practice Exercises.

CREDITORS' RIGHTS. 3 Q. Autumn, winter, spring. Continuous. 6 cr. Hanna and McLaughlin's Cases on Creditors' Rights.

CRIMINAL LAW AND PROCEDURE. 3 Q. Autumn, winter, spring. Continuous. 6 cr. Mikell's Cases on Criminal Law and Procedure, 3rd edition.

DAMAGES. 1 Q. Summer, 1954. 3 cr. Crane's Cases on Damages, 2nd edition.

DOMESTIC RELATIONS. 1 Q. Winter. Summer. 2 cr. Jacob's Cases on Domestic Relations, 2nd edition.

DRAFTING AND ESTATE PLANNING. 1 Q. Spring. 2 cr.

EQUITY. 3 Q. Autumn, winter, spring. 6 cr. Continuous. Chafee and Simpson Cases on Equity, 2nd edition.

EVIDENCE. 3 Q. Autumn, winter, spring. Continuous. 6 cr. McCormick's Cases on Evidences.

FUTURE INTERESTS. 1 Q. Spring. 3 cr. Leach's Cases on Future Interests.

INSURANCE. 1 Q. Spring. 3 cr. Vance's Cases on Insurance, 3rd edition.

LABOR RELATIONS. 1 Q. Spring. Summer. 3 cr. Landis and Manoff's Cases on Labor Law, 2nd edition.

LAW OF NATURAL RESOURCES. 3 Q. Autumn, winter, spring. Continuous. 6 cr. Martz's Cases and Materials on the Law of Natural Resources.

LEGAL ETHICS. 1 Q. Spring. 2 cr. Costigan's Cases and Materials on the Legal Profession and its Ethics.

LEGAL HISTORY. 1 Q. Autumn. 3 cr. Casebook to be announced.

LEGAL WRITING. 1 Q. 1 cr. For third years students. No text.

LEGISLATION. 1 Q. Winter. 3 cr. Nutting and Elliott's Cases on Legislation.

MUNICIPAL CORPORATIONS. 1 Q. Spring. Summer. 3 cr. Tooke and McIntire's Cases on Municipal Corporations, 3rd edition.

ORIENTATION. 1 Q. Autumn. 2 cr. Casebook to be announced.

PROPERTY. 3 Q. Autumn, winter, spring. Continuous. 9 cr. Casner and Leach, Cases and Text on Property.

PUBLIC UTILITIES. 1 Q. Summer. 3 cr. Casebook to be announced.

SALES. 3 Q. Autumn, winter, spring. Continuous. 6 cr. Vold's Cases on Sales, 2nd edition.

SURETYSHIP AND MORTGAGES. 3 Q. Autumn, winter, spring. Continuous. 6 cr. Campbell's Cases on Suretyship. Campbell's Cases on Mortgages, 2nd edition.

TAXATION. 2 Q. Autumn, winter. Continuous. 6 cr. Casebook to be announced.

TORTS. 3 Q. Autumn, winter, spring. Continuous. 9 cr. Smith and Prosser's Cases on Torts.

TRADE REGULATION. 2 Q. Autumn, winter. Continuous. 6 cr. Handler's Cases and Materials on Trade Regulation, 2nd edition.

TRUSTS. 3 Q. Autumn, winter, spring. Continuous. 6 cr. Scott's Cases on Trusts, 4th edition.

USE OF LAW BOOKS. 1 Q. Autumn. 2 cr. Beardsley's and Orman's Bibliography and Use of Law Books, 2nd edition.

WILLS AND ADMINISTRATION. 2 Q. Winter, spring. Continuous. 4 cr. Bingham's Costigan Cases on Wills and Administration, 3rd edition.

LIBERAL ARTS

Following are the special requirements for the Bachelor of Arts degree with a major in liberal arts:

University Requirements	Credits	
English Composition	9-10	
Group I	12-15	
Physical Education	6	
Military Science (men)	6	27-37
Major Requirements		
History and Political Science	18	
Anthropology, Economics, Psychology, Sociology	20	
Literature	16	
Philosophy, Religion	15	
Art, Creative Writing, Drama, Music, Speech (In three of the five areas)	18	

Foreign Language	15	
Humanities, General 15abc	15	117
In three of the following four fields the student elects upper division courses equal to the number of credits indicated for those fields.		
History and Political Science	8	
Anthropology, Economics, Psychology, Sociology	10	
Literature, Philosophy, Religion	9	
Art, Creative Writing, Drama, Music, Speech	10	27-29
Free Electives	15-3	
		186

MATHEMATICS

Professors Harold Chatland (Chairman), A. S. Merrill; Associate Professor T. G. Ostrom; Assistant Professors Joseph Haskisaki, William Myers.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra and geometry. It is also recommended that the high school preparation include all of the mathematics possible.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN MATHEMATICS. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Mathematics: 45 or more credits in Mathematics, normally including Mathematics 13, 16, 21, 22, 23; 15 credits in Mathematics courses numbered above 100; 15 credits in Physics or 15 credits in mathematical statistics; and a reading knowledge of some foreign language, preferably French or German (23-25 credits or satisfactory examination at 4th quarter level).

No candidate will be accepted for graduation with honors who does not have credits in Mathematics 107b.

FOR UNDERGRADUATES

A. **PRE-FRESHMAN ALGEBRA.** 1 Q. Autumn. No credit. Designed to meet the needs of students who do not qualify for Mathematics 10.

10. **INTERMEDIATE ALGEBRA.** 1 Q. Autumn. Winter. Spring. 5 cr. Summer, 2½ or 5 cr. Prerequisite, satisfactory performance in an examination in elementary algebra. Students who have completed Mathematics 18 may not receive credit in this course.

11. **SOLID GEOMETRY.** 1 Q. Spring. 5 cr. Prerequisite, Mathematics 10 and one entrance unit in plane geometry.

13. **PLANE TRIGONOMETRY.** 1 Q. Autumn. Winter. Spring. 5 cr. Summer, 2½ or 5 cr. Prerequisite, plane geometry, and Mathematics 10 or satisfactory performance in an examination in intermediate algebra. This is not high school trigonometry.

14. **SPHERICAL TRIGONOMETRY.** 1 Q. Winter. 5 cr. Prerequisite, Mathematics 10 and 13. Spherical trigonometry and a thorough review of some of the advanced topics in plane trigonometry.

16. **COLLEGE ALGEBRA.** 1 Q. Autumn. Winter. 5 cr. Prerequisite, Mathematics 10 or satisfactory performance in an examination in intermediate algebra.

18. **INTRODUCTORY BUSINESS MATHEMATICS.** 1 Q. Autumn. Winter. 5 cr. Prerequisite, 1 entrance unit of algebra. This course covers practically the same field as Mathematics 10, except that work on progressions and the binomial theorem replaces the study of quadratic systems. Students who present 1½ entrance units of algebra or who have completed Mathematics 10 or 35a may not receive credit in this course.

19. **ELEMENTARY MATHEMATICS OF INVESTMENTS.** 1 Q. Autumn. Winter. Spring. 5 cr. Prerequisite, Mathematics 18 or 1½ entrance units of algebra.

20. **ADVANCED MATHEMATICS OF INVESTMENTS.** 1 Q. Winter. 5 cr. Prerequisite, Mathematics 19 or 25 credits in the Department of Mathematics.

21. **PLANE ANALYTIC GEOMETRY.** 1 Q. Spring. 5 cr. Summer, 2½ or 5 cr. Prerequisite, Mathematics 13 and 16.

22. **CALCULUS I.** 1 Q. Autumn. 5 cr. Prerequisite, Mathematics 21. Differential calculus, and introductory work on integration.

23. CALCULUS II. 1 Q. Winter. 5 cr. Prerequisite, Mathematics 22. Applications of differential calculus; integral calculus.

25. STATISTICS. 1 Q. Autumn. Winter. Spring. Summer. 5 cr. Prerequisite, Mathematics 10 or 18 or equivalent.

FOR UNDERGRADUATES AND GRADUATES

101. ORDINARY DIFFERENTIAL EQUATIONS. 1 Q. Autumn. 5 cr. Prerequisite, Mathematics 23. Elementary solutions of Differential Equations, introduction to series solutions, Bessel, Legendre Equations, introduction to Sturm-Liouville systems, Picard's Method.

104. THEORY OF EQUATIONS. 1 Q. Winter. 5 cr. Prerequisite, Mathematics 22.

107a. CALCULUS III. 1 Q. Spring. 5 cr. Prerequisite, Mathematics 23. Infinite series; expansion of functions; hyperbolic functions; partial differentiation; multiple integration.

107b. CALCULUS IV. 1 Q. Winter. 5 cr. Prerequisite, Mathematics 107a. Introductory theory of functions.

110. INTRODUCTION TO ABSTRACT MATHEMATICS. 1 Q. Autumn. 5 cr. Prerequisite, Calculus I or concurrent enrollment in Calculus I, and permission of the instructor. Selected topics from the theories of sets, finite geometries, algebraic systems, functions over abstract spaces, equivalence and order relations.

111. INTRODUCTION TO FUNCTIONS OF A COMPLEX VARIABLE. 1 Q. Spring. 5 cr. Prerequisite, Mathematics 107b.

125. SOLID ANALYTIC GEOMETRY. 1 Q. Spring. 5 cr. Prerequisite, Mathematics 23.

131. ALGEBRA FOR TEACHERS. 1 Q. Winter, 4 cr. Summer, 2-4 cr. Prerequisite, Mathematics 110 or consent of the instructor. The processes of elementary algebra and arithmetic considered from a mature point of view for the teacher of high school algebra. Students may not receive credit for this course and the identical course Education 131.

132. GEOMETRY FOR TEACHERS. 1 Q. Winter. 5 cr. Prerequisite, consent of the instructor. The subject matter of high school geometry compared with that of other geometries. Students may not receive credit for this course and the identical course Education 132.

140abc. MATHEMATICAL STATISTICS. 3 Q. Autumn, winter, spring. 5 cr. each quarter. Prerequisite, Mathematics 23 and permission of the Department. (a) Development of necessary mathematical concepts, probability, random variables and distribution functions. (b) Random variables, distribution functions, sampling, testing hypothesis. (c) A continuation of (b).

150. SEMINAR. 1 Q. Any quarter. Credit variable. Prerequisite, junior standing and consent of instructor. This course provides guidance in special work for advanced students.

171. MATHEMATICAL METHODS OF SCIENCE I. 1 Q. Autumn. 5 cr. Prerequisite, Mathematics 101 and consent of instructor. Differential Equations; Existence theorems, Fuch's theorem, method of Frobenius. Complete, closed, orthonormal sets of functions, Generalized Fourier Series. Sturm-Liouville systems and boundary value problems.

172. MATHEMATICAL METHODS OF SCIENCE II. 1 Q. Winter. 5 cr. Prerequisite, Mathematics 101 and consent of instructor. Calculus of variations; Lagrange Multipliers, necessary conditions for extremals, Euler's differential equation, parametric problems, transversality condition, Hamilton's principle, Lagrange's equation, applications to Sturm-Liouville systems. Tensor analysis.

173. MATHEMATICAL METHODS OF SCIENCE III. 1 Q. Spring. 5 cr. Prerequisite, Mathematics 101 and consent of the instructor. Determinants, Matrices; solutions of general systems of linear equations, equivalence relations, quadratic forms, orthogonal transformations, solution of normal systems of differential equations, applications to dynamics, normal coordinates. Introduction to finite groups: Invariant sub-groups, quotient groups, linear groups, group representations.

181. ANALYSIS I: TOPOLOGY. 1 Q. Autumn. 5 cr. Prerequisite, Mathematics 107b. The theory of plane sets of points, of general sets of points and properties invariant under continuous and topological transformations.

182. ANALYSIS II: MEASURE AND INTEGRATION. 1 Q. Winter. 5 cr. Prerequisite, Mathematics 181. Set functions; semi-rings, rings, and fields of sets; measures. The general theory of integration with respect to a measure function.

183. ANALYSIS III: BANACH SPACES. 1 Q. Spring. 5 cr. Prerequisite, Mathematics 182. Selected topics from among linear operators, Banach spaces, complete and orthonormal sets of functions and expansions.

191. ABSTRACT ALGEBRA I. 1 Q. Autumn. 5 cr. Prerequisite, two courses beyond Mathematics 107a and consent of instructor. Groups, rings, isomorphisms, homomorphisms, integral domains, fields, ideals.

192. ABSTRACT ALGEBRA II. 1 Q. Winter. 5 cr. Prerequisite, Mathematics 191. Theory of fields, field extensions, Galois fields, norms and traces.

193. ABSTRACT ALGEBRA III. 1 Q. Spring. 5 cr. Prerequisite, Mathematics 192. Groups with operators, normal series and composition series, Galois theory, real fields, fields with valuations.

FOR GRADUATES

200. GRADUATE SEMINAR. 1 Q. Any quarter. Credit variable. Prerequisite, graduate standing and consent of instructor. This course provides guidance in graduate subjects or research work.

ASTRONOMY

A-11. DESCRIPTIVE ASTRONOMY. 1 Q. Spring. 5 cr. Open to all students. An introductory course.

MEDICAL TECHNOLOGY

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra. It is also recommended that the high school preparation include advanced algebra and chemistry.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN MEDICAL TECHNOLOGY. At least the fourth year of the following prescribed courses must be taken in residence at this University, and preferably the third and fourth years. In addition to the general requirements for graduation listed earlier in the catalog the following courses in the several curricula noted below comprise the professional curriculum leading to the degree of Bachelor of Science in Medical Technology. For further description of these courses, see the detail given elsewhere in this catalog for the particular subject involved.

FRESHMAN YEAR: Zoology 10, 24; Psychology 11; Mathematics 10; Chemistry 11abc or 13abc; plus required English, Physical Education, and Military or Air Science.

SOPHOMORE YEAR: Chemistry 38abc, 103; Physics 11abc; 3 quarters of Social Science; plus required Physical Education and Military or Air Science.

JUNIOR YEAR: Bacteriology 117, 118, 119; General 15abc; Chemistry 13c or an elective; Chemistry 17; 5 cr. of electives.

SENIOR YEAR: Bacteriology 103, 121, 122, 125, 3 quarters of 129, 2 quarters of 131; Zoology 105; 9-10 credits of electives.

MUSIC

Professors John Lester, Lloyd Oakland, Luther A. Richman (Dean), Florence M. Smith, Stanley M. Teel; Associate Professors Bernice B. Ramskill, Rudolph Wendt; Assistant Professors Eugene Andrie, Hasmig Gedickian, J. Justin Gray; Instructors Paul Abel, J. George Hummel, Florence Reynolds.

HIGH SCHOOL PREPARATION. Students planning to become professional musicians should have a background of music training prior to entering the University.

SPECIAL REQUIREMENTS FOR UNDERGRADUATE DEGREES IN MUSIC. 1. Candidates for the Bachelor of Arts degree with music as a major must complete music courses suggested in Curriculum C. A foreign language is required in addition to the general requirements for graduation listed earlier in the catalog.

2. Candidates for the degree of Bachelor of Music in music education are required to complete satisfactorily 186 credits and the course requirements as outlined in Curriculum A.

3. Candidates for the degree of Bachelor of Music in applied music and music theory must complete the course requirements as outlined in Curriculum B.

4. Candidates for the degree of Bachelor of Music must select academic

electives so as to complete a minimum of 54 credits not including required freshman and sophomore physical education and military science, courses in music, and courses in education offered for state certification.

In the following course descriptions, † indicates applied music and * indicates ensemble music.

APPLIED MUSIC FEES

A fee of \$20 per quarter is charged all music majors for instruction in applied music. Non-majors pay \$24 for two lessons per week, or \$12 for one lesson per week, per quarter. All of these fees are halved for the five week summer term.

For majors and non-majors who register for applied music for less than a full quarter or who withdraw before the end of the quarter, a charge of \$1.75 per private lesson will be made. Refunds are based on the number of weeks elapsed since the beginning of the quarter.

Lessons in applied music missed by the instructor will be made up within the quarter. Lessons missed by students or lessons falling on a legal holiday will not be made up.

RENTALS, PER QUARTER

Practice room without piano, one hour daily	\$2.00
Additional hour daily	1.00
Piano and practice room, one hour daily	3.00
Additional hour daily	2.00
Organ and practice room, one hour daily	6.00
Additional hour daily	5.00
Wind and string instruments	3.00

Rentals must be paid for entire quarter. No refunds of rentals will be made.

(The above fees are subject to modification by action of the State Board of Education.)

A. CURRICULUM FOR BACHELOR OF MUSIC DEGREE (MUSIC EDUCATION). Curriculum A prepares for teaching in the public school if the electives are so chosen as to meet the state requirements (see Education). Students desiring to major in instrumental or vocal music may do so by consulting with the Dean of the School of Music.

COMBINATION VOCAL AND INSTRUMENTAL MAJOR

FRESHMAN YEAR: Music 1, 3, 10, 11abc, 14abc, 35abc, English 11ab, Psychology 11, Health and Physical Education 11abc and ROTC 1abc or 21abc (men).

SOPHOMORE YEAR: Music 1, 4, 10, 15abc, 31abc, 41abc, Health and Physical Education 12abc, ROTC 2abc or 22abc (men) and electives (non-music).

JUNIOR YEAR: Music 5, 10, 25, 29, 123a, 151, 152, Education 25abc and electives (non-music).

SENIOR YEAR: Music 5, 10, 111abc, 134abc, Education 26, and electives (non-music).

B. CURRICULA FOR BACHELOR OF MUSIC DEGREE (APPLIED MUSIC). Completion of the entire Curriculum qualifies the student to receive the Secondary State Certificate in Applied Music by endorsement from the State Department of Public Instruction. Students who intend to request a certificate in applied music by endorsement must include Psychology 11 and Education 25ab in addition to the requirements listed in the curricula.

MAJOR IN PIANO OR ORGAN

FRESHMAN YEAR: Music 5, 10, 11abc, 35abc, English 11ab, Psychology 11, Health and Physical Education 11abc and ROTC 1abc or 21abc (men).

SOPHOMORE YEAR: Music 6, 10, 41abc, 47abc, Health and Physical Education 12abc, ROTC 2abc or 22abc (men), and electives (non-music).

JUNIOR YEAR: Music 7, 23abc, 31ab, 40, 111abc, 158abc, and electives (non-music).

SENIOR YEAR: Music 8, 134abc, 142, and electives (non-music).

MAJOR IN VOICE

FRESHMAN YEAR: Music 5, 10, 11abc, 35abc, English 11ab, Psychology 11, Health and Physical Education 11abc and ROTC 1abc or 21abc (men).

SOPHOMORE YEAR: Music 2, 6, 10, 41abc, Health and Physical Education 12abc, ROTC 2abc or 22abc (men), and a foreign language.

JUNIOR YEAR: Music 7, 10, 31ab, 111abc, 158abc, and electives (non-music).

SENIOR YEAR: Music 8, 10, 134abc, 142, and electives (music and non-music).

MAJOR IN ORCHESTRAL INSTRUMENTS

FRESHMAN YEAR: Music 5, 10, 11abc, 35abc, English 11ab, Psychology 11, Health and Physical Education 11abc, ROTC 1abc or 21abc (men).

SOPHOMORE YEAR: Music 2, 6, 10, 41abc, Health and Physical Education 12abc, ROTC 2abc or 22abc (men), and electives (non-music).

JUNIOR YEAR: Music 7, 10, 31ac, 40, 111abc, 158abc, and electives (non-music).

SENIOR YEAR: Music 8, 10, 40, 134abc, 142, and electives (music and non-music).

MAJOR IN THEORY AND COMPOSITION

FRESHMAN YEAR: Music 3, 4, 10, 11abc, 14abc, 35abc, English 11ab, Psychology 11, Health and Physical Education 11abc and ROTC 1abc or 21abc (men).

SOPHOMORE YEAR: Music 2, 5, 10, 31abc, 41abc, Health and Physical Education 12abc, ROTC 2abc or 22abc (men), and electives.

JUNIOR YEAR: Music 3, 5, 10, 111abc, 129abc, 158abc, 159abc, and electives.

SENIOR YEAR: Music 6, 10, 134abc, 165abc, 169abc and electives.

C. CURRICULUM FOR BACHELOR OF ARTS DEGREE: Curriculum C does not lead to certification for teaching in the public schools.

FRESHMAN YEAR: Music 3, 10, 11abc, 35abc, English 12abc, Health and Physical Education 11abc, ROTC 1abc or 21abc (men), and electives (non-music).

SOPHOMORE YEAR: Music 4, 10, 41abc, Health and Physical Education 12abc, ROTC 2abc or 22abc (men), restricted electives, and a foreign language.

NOTE: The work of the junior and senior years is devoted largely to completing any remaining University group requirements, free electives, and music electives, including Music 111abc and 134abc, as well as Applied Music 5 during each quarter of these years.

APPLIED MUSIC

Upon entrance to any applied music course, the student will be given a placement examination and assigned to the grade to which his ability, previous training, and experience entitle him. In case of extraordinary improvement, the music faculty, on the basis of the regular semi-annual examination, may allow a student to skip one or more grades.

‡PIANO

1. PIANO. Any quarter. 1-2 cr. Individual instruction for beginners. All major and minor scales 2 octaves H.S. All major and minor triads in all positions. Harmonization of simple tunes with I IV V7 chords. Materials such as Oxford and Burrows Adult Beginners books. Transposition, memorization, and sightreading.

2. PIANO. Any quarter. 1-2 cr. Prerequisite, 3 cr. in either Piano 1, Music 14abc, or placement test. All major and minor scales 2 octaves H.T. Further development of harmonization, transposition, memorization, and sight-reading. Materials such as Felton Progressing Studies and Bartok Mikrococosmos Books I and II.

3. PIANO. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Piano 2 or Music 15c. Major and minor scales H.T. 4 octaves; tonic triad and diminished seventh arpeggios. Clementi sonatinas, easy Chopin mazurkas, Palmgren, May Night. Simple melodic dictation; aural analysis of augmented and diminished triads and 7th chords; sight reading of easy accompaniment forms.

4. PIANO. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Piano 3. Scales M.M. 96; arpeggios, major and minor triads and sevenths 4 octaves, M. 72; Lambert Studies Bk. II, selected sonatas of Haydn, Mozart, Beethoven, Schumann, "Prophet Bird." Bach, Eighteen Little Preludes and Fugues. Sight reading of Bach chorales.

5. PIANO. Any quarter. 1-4 cr. Prerequisite, 3 cr. in Piano 4 or placement test. All major and minor scales, all arpeggios (Major, minor, diminished 7th, dominant 7ths), 16th notes M.M. 120; Philipp; broken chords, finger and double-note exercises; Cramer studies. Bach, Two-part inventions; Mozart, and early Beethoven sonatas; Chopin, preludes; selected romantic and modern pieces.

6. PIANO. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Piano 5. All major and minor scales in 3rds, 6ths, 10ths, contrary motion, and arpeggios M.M. 152; scales in double 3rds and octaves; Phillip, technical exercises; Clementi studies (Gradues ad parnassum); Bach, Three-part inventions; French suites; Mozart, sonatas of greater difficulty; Beethoven sonatas such as Op. 10, No. 1; Chopin, nocturnes, waltzes; Schumann, shorter works.

7. PIANO. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Piano 6. Scales in double 6ths. Chopin Etudes; Beethoven Sonatas of the difficulty of Op. 31, No. 3; Bach, Well-Tempered Clavichord; Brahms; Chopin, larger works; romantic and modern pieces; Survey of literature and ensemble work.

8. PIANO. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Piano 7. Bach, Chromatic Fantasie and Fugue; a concerto; Beethoven sonatas such as Op. 53. Survey of literature.

†ORGAN

1. ORGAN. Any quarter. 1-2 cr. Prerequisite, placement in Piano 3. Individual instruction for beginners. Preparatory studies for manuals alone, pedals alone. Trios for manuals and pedals. Elementary registration. Easy composition by Guilman, Rogers, Archer, Stainer.

2. ORGAN. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Organ 1. Pedal studies and trios Douglas-Cronham. Stainer Manual and Pedal Drills. More advanced solos.

3. ORGAN. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Organ 2. Major and minor scales for manuals and pedals. Advanced pedal-manual drills by Stainer. Easy Bach Chorales and Fugues, hands alone. Solos by contemporary composers.

4. ORGAN. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Organ 3. Gleason Technic drills. Easier Bach Chorales and Preludes, using hands and feet. Fughettos by Merkel, Rheinberger. Easy work by Dubois, Carl, slow movements from Guilman Sonatas. Compositions suitable for church services.

5. ORGAN. Any quarter. 1-4 cr. Prerequisite, 3 cr. in Organ 4 and/or placement in Piano 5. Technic by Gleason and Dickson. Choral preludes, trios by Bach. Easier works by Mendelssohn, Guilman and others.

6. ORGAN. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Organ 5. Continued technical studies by Gleason and Dickson. Mendelssohn Sonatas II and IV. Guilman Sonatas. Bach Preludes and Fugues. C Major, C Minor, Little Fugue in G Minor. Easier works by Franck; Widor Symphony II or IV. Easier sonatas by Mozart, Beethoven. Selected compositions by modern composers.

7. ORGAN. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Organ 6. Gleason Technic transposed. Mendelssohn Sonatas I and V; Bach Sonata, Concerto, Preludes, Toccata and Fugue in D minor; Handel Concerto. Advanced solos by Franck; Widor Symphony V and VI; Vierne; Rheinberger trios and sonatas. Study of hymn liturgy, oratorios. Selected modern composition.

8. ORGAN. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Organ 7. Gleason and Dickson Technic. Bach, Sonatas II and III, Fantasy and Fugue in G minor, advanced Preludes and Fugues, Choral Preludes, Toccata and Fugue in F; chorales by Schubler, Franck, Honegger, Brahms, Karg-Elert; works by Vierne, Scherzetto and Bonnet; Dupre, Preludes and Fugues.

†VOICE

1. VOICE. Any quarter. 1-2 cr. Individual or class instruction for beginners. Breathing, resonance, vowel formation, and posture as related to tone production. Simple vocalises of Clippinger, Lutgen, Vaccal or other vocalises of similar difficulty. Methods of producing crescendo, diminuendo, legato, staccato, flexibility, velocity. Sight reading. Songs in English such as Charles, When I Have Sung My Songs; Mendelssohn, On Wings of Song.

2. VOICE. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Voice 1. Development of crescendo, diminuendo, legato, staccato. Continuation of vocalises. Major, minor and chromatic scales. Sight reading. Songs in

English such as Huhn, Invictus; Franz, Dedication (male). Haydn, My Mother Bids Me Bind My Hair; Wilson, When Love Is Kind (female).

3. VOICE. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Voice 2. Problems of musicianship approached with a study of rhythms, dynamics and phrasings. Sight reading. Continuation of English songs. Old Italian songs such as Scarlatti, O Cessate di Piagarmi; Pergolesi, Nina; Monteverdi, Lasciatemi Morire; Giordani, Caro Mio Ben.

4. VOICE. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Voice 3. Development of flexibility and velocity. Sight reading. Representative song literature from Bach, Brahms, Handel, Debussy, Duparc, Hageman, Carpenter, etc., and operatic and oratorio arias.

5. VOICE. Any quarter. 1-4 cr. Prerequisite, Music 1, Voice and/or placement test. Technical studies as in Voice 1-4 with greater concentration. Must be able to demonstrate musicianship, satisfactory range and quality of voice, and ability to pursue the course successfully. Italian, French, German diction with selected songs in these languages. Emphasis on Italian.

6. VOICE. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Voice 5. Continued study of literature with emphasis on German lieder, oratorio and operatic literature.

7. VOICE. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Voice 6. Continued study of literature with emphasis on modern French opera, oratorio, and English literature.

8. VOICE. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Voice 7. More extended study and survey of vocal literature. Program building.

†VIOLIN

1. VIOLIN. Any quarter. 1-2 cr. Individual or class instruction for beginners. All major and minor scales and arpeggios in 1 octave. Simple double stops. Positions through the third. Elements of shifting and vibrato. Introduction to legato, staccato, spiccato, bowing, pizzicato, Herfurth, Tune a Day books I and II; Left-hand drill in Bytovsky, Book I, part I. Short pieces such as Merle Isaac, Album of Favorite Violin Solos.

2. VIOLIN. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Violin 1. All major and minor scales and arpeggios in 2 octaves. Chromatic scales; shifting in positions one through five. Introduction to martele, loure, slurred spiccato. Bytovsky Book I. Short pieces such as those in "The Violin of Bygone Days." Boosey-Hawkes.

3. VIOLIN. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Violin 2. Major and minor scales and arpeggios with various bowings. Thorough study of bowing styles and tone production. Complete half of Fischel, Double Stops. Shifting drill, Sevcik, Op. 8 Orchestral technique—Violin Passages, Broza and Britten. Vivaldi, Concerto in A minor. Short pieces such as Sammartini-Elman, Canto Amoroso. Kreisler, Rondino on a Theme by Beethoven.

4. VIOLIN. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Violin 3. Major and minor scales and arpeggios in 3 octaves. Emphasis on bowing styles. Violin Passages, Broza and Britten continued. Complete Fischel, Double Stops. Corelli, Sonatas; Schubert, Sonatinas; Viotti, Concerto No. 23; short pieces such as Kreisler, La Gitana.

5. VIOLIN. Any quarter. 1-4 cr. Prerequisite, Violin 4 or placement test. All major and minor scales and arpeggios in 3 octaves. Kreutzer Etudes. Sevcik Double Stops, Op. 9, Mozart concerto; Tartini, Sonata; Wieniawski, Legende.

6. VIOLIN. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Violin 5. Completion Kreutzer Etudes and Sevcik Double Stops. Handel, Mozart sonatas. Bruch, Mendelssohn Concertos. Concert pieces: Sarasate, Wieniawski, Saint-Saens, Corelli.

7. VIOLIN. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Violin 6. Rode caprices, Bach sonatas for violin alone. Beethoven sonatas and concertos. Bruch, Saint-Saens, Wieniawski concertos. Lalo, Symphonie Espagnole; Saint-Saens, Rondo Capriccioso; Sarasate, Zigeunerweisen.

8. VIOLIN. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Violin 7. Bach sonatas, Paganini caprices. Schumann, Brahms, Franck sonatas. Brahms, Goldmark, Sibelius, Tchaikowsky, Glazunov concertos. Concert pieces.

The course for viola is similar to that for violin.

†CELLO

1. CELLO. Any quarter. 1-2 cr. Individual or class instruction for beginners. Elementary studies in first and fourth positions. Dotzauer Method Vol. I; Edith Otis pieces; Schmidt, Six Easy Pieces.

2. CELLO. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Cello 1. Studies in second and third position. All major and minor scales 2 octaves with various bowings. Introduction of vibrato. Dotzauer Method Vol. II. Easy pieces using position studied such as Old Masters for Young Cellists.

3. CELLO. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Cello 2. Studies in fifth, sixth, seventh positions. Continued study in vibrato. Studies by Lee, Grutzmacher, Schroeder. Marcello Sonata; pieces by Popper, Squire, Jarnfeldt.

4. CELLO. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Cello 3. Introduction of thumb position. Major and minor scales in 3 octaves. Arpeggios, bowing studies. Advanced Dotzauer etudes; Piatti etudes; Eccles Sonata, pieces such as Bloch, Prayer; Granados, Intermezzo.

5. CELLO. Any quarter. 1-4 cr. Prerequisite, Cello 4 or placement test. Advanced thumb position studies. Chromatic scales. Review of 3-octave major and minor scales. Studies by Grutzmacher and Lee. Early classic sonatas such as Sammartini. Klengel Concertino; Mendelssohn, Student Concerto; Bach, Suite 1.

6. CELLO. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Cello 5. Major scales and arpeggios in 4 octaves. Sonatas by Vandini, Grieg. Bach Suites II and III. Early Haydn concertos.

7. CELLO. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Cello 6. Major scales in 4 octaves. Solos; Popper, Hungarian Rhapsody; Bloch, Kol Nedri; Saint-Saens, Dvorak Concertos; Bach, Suite IV.

8. CELLO. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Cello 7. Scales in 3rds and 6ths. Dupont Etudes Vol. I and II. Popper Etudes. Bach Suite V. Beethoven Sonatas. Lalo, Haydn Concertos. Pieces by modern composers.

The course for string bass is similar to that for cello.

†TRUMPET OR CORNET

1. TRUMPET. Any quarter. 1-2 cr. Individual or class instruction for beginners. Mouthpiece placement, tone production, attack, and slurring. Methods: Clarke, Elementary Studies for Cornet; Arban, Complete Method; S. Hering, 40 Progressive Etudes; Petit, Methode pour cornet a piston (Vol. I).

2. TRUMPET. Any quarter. 1-2 cr. Prerequisite, 3 cr. in trumpet 1. Embouchure strengthening and development. Methods: (In addition to those required in trumpet 1.) Goldman, Daily Embouchure Studies; Reinhardt, Concone Studies for Trumpet.

3. TRUMPET. Any quarter. 1-2 cr. Prerequisites, 3 cr. in trumpet 2. Intensive study of embouchure development. Studies in the mastery of legato and dynamic control. Perfection of single staccato tonguing. Beginning scale work. Methods: (In addition to those required in trumpet 2.) Hering, 32 Etudes; Schlossberg, Daily Technical Drills; Clarke, Technical Studies (2nd series); Duhem, Etudes. Easy solos by Balay, Andreiu, Cools, and Cords.

4. TRUMPET. Any quarter. 1-2 cr. Prerequisite, 3 cr. in trumpet 3. The development of technical facility. Intensive study of scales and arpeggios. The development of a deeper and more thorough musical comprehension. Methods: (In addition to those required in trumpet 3.) Laurent, Etudes Pratiques (Vol. I); Bousquet, 36 Celebrated Etudes; Brandt, Orchestral Etudes; Williams, Method for Trumpet (Vol. II). Intermediate solos by Busser, Ropartz, Mouquet, Petit, von Weber, Alary, and Bohme.

5. TRUMPET. Any quarter. 1-4 cr. Prerequisite, 3 cr. in trumpet 4. The development of orchestral techniques. Complete mastery of all fundamentals. Study of ornaments. Triple and double tonguing. Transposition to trumpet in C and in A. Methods: (In addition to those required in trumpet 4.) Laurent, Etudes Pratiques (Vol. II); Williams, School of Transposition; Sasche, 100 Etudes; Glantz, Etudes (Vol. I); Hering, 24 Advanced Etudes; Petit, Methode pour cornet a piston. Intermediate solos by Arban, Goeysens, Dallier, Balay, and Gaubert.

6. TRUMPET. Any quarter. 1-4 cr. Prerequisite, 12 cr. in trumpet 5. Further development of orchestral techniques. Transposition to trumpet in C, A, D, and F. Study of passages from the orchestral repertoire. Work in the complex rhythms of the contemporary schools of composition. Further study of ornaments. Methods: (In addition to those required in trumpet 5.) Glantz, Etudes (Vol. II); St. Jacome, Complete Method (Vol. II); Mancini, Modern Etudes; Maxime Alphonse, Etudes Nouvelles (Vol. I); Bartold, Orchestral Studies from the Symphonic Repertoire (Classical and Modern Works, Vol. I & II). Difficult solos by Haydn, L. Mozart, Fitzgerald, LeClair, and Handel.

7. TRUMPET. Any quarter. 1-4 cr. Prerequisite, 12 cr. in trumpet 6. Further study of transposition to trumpet in C, A, D, F, E-flat, and E.

Further studies of orchestral passages. The study of the high trumpet in D. More study of modern rhythms. The reading of works in manuscript. Methods: (In addition to those required in trumpet 6.) Mancini, Rhythmic Etudes; Mazas, Manuscript Duets; Maxime Alphonse, Etudes Nouvelles (Vol. II); Barthold, Orchestral Studies from the Symphonic Repertoire (Classical and Modern Works, Vol. III); The Works of R. Strauss. Difficult solos by Bach, Goedicke, and Vidal.

8. TRUMPET. Any quarter. 1-4 cr. Prerequisite, 12 cr. in trumpet 7. The development of tone, technique, fluency, interpretation, sight reading and transposition to a level comparable with artistic professional performance. Transposition to C, A, D, F, E-flat, E, A-flat, B-natural, G, D-flat, and F (alto). Methods: (In addition to those required in trumpet 7.) Bartold, Orchestral Studies from the Symphonic Repertoire (The Works of Wagner, Vol. I & II). A review of the longer solo works by Haydn, Vidal, and Fitzgerald. Difficult solos in the longer forms by Bach, Goedicke, Piiss, Feldman, Bozza, and Hindemith.

†CLARINET

1. CLARINET. Any quarter. 1-2 cr. Individual or class instruction for beginners. Langenus Book I. Major scales and arpeggios. Development of correct embouchure, breath control, staccato, tone production and technic. Solos: Mozart, Adagio Religioso; Debussy, Petite Piece.

2. CLARINET. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Clarinet 1. Langenus Book II. Further develop flexibility and freedom of style necessary for performance of more difficult compositions. Exhaustive study of tone production and staccato. Solos: Delmas, Promenade; Kalinikow, Chanson Triste.

3. CLARINET. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Clarinet 2. Rose, 40 Studies, Book I; Klose, Book I. Develop musicianship and artistic performance. Lazarus and Cavallini Duets. Solo: Monti, Czardus, Jean-Jean, Second Angantino.

4. CLARINET. Any quarter. 1-2 cr. Prerequisite, 3 cr. in Clarinet 3. Rose, 40 Studies, Book II; Baermann Method Book III. Sarlit Etudes. Comprehensive study of all major and minor scales for velocity with various articulations. Solos: Weber, Concertino; Delmas, Italian Fantaisie.

5. CLARINET. Any quarter. 1-4 cr. Prerequisite, 3 cr. in Clarinet 4 and/or placement test. Complete review of tone production, embouchure and breath support. All major and minor scales and chords memorized Labanchi Method, part II. Orchestral Studies, Peter's Edition. Introduction to symphonic clarinet work. Solos: Grovley, Lamento and Taratello; Lefevre, Fantaisie Caprice.

6. CLARINET. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Clarinet 5. Jean-Jean Etudes, Studies in phrasing of cadenzas, Langenus Studies in transposition. Concertos: Spohr, Mozart; Sonatas; Brahms, Reger, Saint-Saens.

7. CLARINET. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Clarinet 6 Perier Method. Further study of symphonic literature. Rode Studies. Study of various "schools" of clarinet playing. Concertos: Mendelssohn, Spohr, Milhaud Jean-Jean, Au Clair de la Lune.

8. CLARINET. Any quarter. 1-4 cr. Prerequisite, 12 cr. in Clarinet 7. Examination of all works and methods and assayance of their value in teaching clarinet. Further study of modern literature and development of artistry in phrasing, style and command of the instrument in solo performance. Beethoven Violin Sonatas (selected); Debussy, First Rhapsody for Clarinet and Orchestra.

The other woodwind instruments upon which a major is acceptable are flute, oboe, bassoon, and saxophone. Courses for these instruments are similar to that for clarinet.

FOR UNDERGRADUATES

*10. BAND, ORCHESTRA, CHORAL GROUPS. 1 Q. Autumn. Winter. Spring. Summer. 1 cr. Band, A Cappella Choir, Men's Glee Club, Women's Glee Club, Choral Union and Orchestra. Prerequisite, consent of instructor. Music majors registered in Music 10 are required to attend recitals as prescribed by the music faculty.

11abc. THEORY I. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Prerequisite, pass satisfactorily music placement examination and/or Music 14a. The art and science of music structure, including the study of scales, keys, intervals, chords, cadences, melody writing, beginning modulations, and rhythms. Practice in two-, three-, and four-part writing, analysis, dictation, and keyboard application. The course is designed to acquaint the student with the fundamentals of musicianship, to increase his accuracy and understanding in musical performance, and to

train him to think in tone so that he is able to sing, identify, and write the music he hears.

†14abc. PIANO IN CLASS. 3 Q. Autumn, winter, spring, Summer, 14a. 1 cr. each quarter. Individual instruction for beginners. All major and minor scales 2 octaves HS. All major and minor triads in all positions. Harmonization of simple tunes with I IV V7 chords. Materials such as Oxford and Burrows Adult Beginners books. Transposition, memorization, and sight-reading.

†15abc. INTERMEDIATE PIANO IN CLASS. 3 Q. Autumn, winter, spring, 1 cr. each quarter. Prerequisite, 3 cr. in either Piano I, Music 14abc, or placement test. All major and minor scales 2 octaves HT. Further development of harmonization, transposition, memorization, and sight-reading. Materials such as Felton Progressing Studies and Bartok Mikrococosmos Books I and II.

S22. MUSIC FOR THE GRADE SCHOOL TEACHER. 1 Q. Summer. 3 cr. A study of materials and methods relating to the teaching of music in the grade and rural schools. Students who have received credit in Music 123a are not eligible to enroll in this course for credit.

23abc. CLASS PIANO METHODS. 3 Q. Autumn, winter, spring, 2 cr. each quarter. Prerequisite, placement in Piano 3. A normal class for piano teachers and public school music instructors dealing with methods and materials for teaching piano classes in public schools and private studios. Practical demonstrations with children's classes. Offered in 1953-54 and in alternate years.

†25. STRING INSTRUMENTS IN CLASS. 3 Q. Autumn, winter, spring, Summer. 1 cr. each quarter. Students may enter any quarter. One instrument each quarter, to be selected by students with advice and consent of instructor. A course designed to enable music education majors to gain a practical knowledge of the stringed instruments. May be repeated for a maximum of 4 credits.

†29. WIND AND PERCUSSION INSTRUMENTS IN CLASS. 3 Q. Autumn, winter, spring, Summer. 1 cr. each quarter. Students may enter any quarter. One instrument each quarter to be selected by students with advice and consent of instructor. A course designed to enable music education majors to gain a practical knowledge of the instruments of the band. May be repeated for a maximum of 4 credits.

31abc. CONDUCTING AND INSTRUMENTATION. 3 Q. Autumn, winter, spring, 3 cr. each quarter. Summer, 31a. Prerequisite, 10 credits in music including Music 11ab. (a) Fundamentals of conducting. (b) Choral conducting. (c) Instrumental conducting. Choral and instrumental groups are made available for practical experience. 31a is a prerequisite for 31b or c.

35abc. LISTENING TO MUSIC. 3 Q. Autumn, winter, spring. Section I—Music Majors. 2 cr.; Section II—Non-Music Majors, 1-3 cr. Students may enter any quarter. The elements of musical understanding; musical progress from ancient to modern times. Music of important periods of composition illustrated by means of phonograph selections and departmental programs.

S38. RECITALS-LECTURES. 1 Q. Summer. 1-2 cr. Open to all students. A course presenting concert repertory of various periods and schools with historical and analytical comment. Students who wish to register for one credit will be required to attend six programs presented by Mr. Wendt, pianist, and six by other music faculty members. Students who wish to register for 2 credits are required to attend 2 additional lecture periods per week, do supplementary reading, and listen to phonograph records.

*40. ENSEMBLE GROUPS. 1 Q. Autumn. Winter. Spring. Summer. 1 cr. Applied majors of junior and senior rank not registered in Music 10 are required to attend recitals as prescribed by the music faculty. Any small group of two or more players or singers may have a course outlined by the instructor. Opportunity is offered for the development of sight reading and for gaining acquaintance with music literature; accompanying. Students may register for more than one ensemble group in any one quarter.

41abc. THEORY II. 3 Q. Autumn, winter, spring, 4 cr. each quarter. A continuation of Theory I. Further practice in sight singing, ear-training, dictation, and keyboard work; the inter-relation of harmony and counterpoint; the analysis of Bach chorales; and creative work exemplifying the contents of the course.

45abc. MICROPHONE AND PROGRAM TECHNIC. 3 Q. Autumn, winter, spring, 2 cr. each quarter. (a) Basic characteristics of sound, its perception by the human ear, and its transmission and reproduction by radio. The study of equipment and practical experience in its use. (bc) Prerequisite, 45a. Production of musical programs and the selection of music for theme, bridges, sound effects, etc.

47abc. KEYBOARD HARMONY. 3 Q. Autumn, winter, spring, 1 cr. each quarter. Prerequisite, Music 41abc or concurrent registration and placement in Piano or Organ 5. Practical application of theory principles

to the keyboard. Exercises in modulation, transposition, and development of extempore playing.

FOR UNDERGRADUATES AND GRADUATES

105. APPLIED MUSIC. (Voice, piano, organ, string or wind instruments.) Autumn, winter, spring. Summer. 1-8 cr. Prerequisite, completion of Music 8 or graduate standing in music education and consent of the Dean of the School of Music. Individual instruction.

S108. UNIT COURSE IN MUSIC EDUCATION. 1 Q. Summer. 1-3 cr. Prerequisite, junior standing in music or teaching experience and consent of instructor.

111abc. THEORY III. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Prerequisite, Music 41c. Chromatic harmony; altered chords; foreign modulation; analysis and writing in Classic and Romantic styles, both instrumental and vocal.

S114. PIANO TEACHING WORKSHOP. 1 Q. Summer. 1-8 cr. Prerequisite, junior standing in music or teaching experience and consent of instructor.

S120. PIANO FOR THE CLASSROOM TEACHER. 1 Q. Summer. 2 cr. Prerequisite, junior standing and teaching experience. Presenting simple material at a basic level of skill, this course is designed to assist the teacher to a wider utilization of the piano in classroom and school situations.

123abc. SCHOOL MUSIC. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Summer, 1½-3 cr. Prerequisite, Music 31a or concurrent registration. (a) Music methods and materials for elementary schools including child voice, rhythmic development, rote singing. (b) Music methods and materials for junior high school grades. (c) Music methods and materials for senior high schools including bands, orchestras, glee club, chorus, problems of community music, operettas, festivals. Students may not receive credit for this course and the identical course Education 123abc.

125abc. COUNTERPOINT. 3 Q. Autumn, winter, spring. 2 cr. each quarter. Prerequisite 41c or concurrent registration. 15th century vocal style and 18th century instrumental contrapuntal technic.

S126. MUSIC FOR PUBLIC PERFORMANCE. 1 Q. Summer. 2 cr. Practical lessons in analysis of cantatas, operettas, pageants, musical plays, and other type of entertainment for production in elementary and high school.

129abc. ORCHESTRATION. 3 Q. Autumn, winter, spring. 2 cr. each quarter. Prerequisite 41c. Study and application of the problems of transcribing music for symphonic orchestra.

131. ADVANCED CONDUCTING AND INSTRUMENTATION. 1 Q. (May be repeated for credit to a maximum of 6 credits.) Autumn. Summer. 3 cr. Prerequisite, Music 31abc and junior standing. A continuation of 31abc. Technics of conducting and problems of interpretation.

S133. MUSIC APPRECIATION FOR THE CLASSROOM. 1 Q. Summer. 1 cr. Prerequisite, junior standing or teaching experience. This course is designed to aid teachers interested in music appreciation either as a subject in grade or rural schools or in correlation with related subjects at any level.

134abc. HISTORY OF MUSIC. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Students may enter any quarter. Prerequisite, Music 35abc or senior standing in music. Music of all periods analyzed: the lives, works and influences of all composers discussed and studied.

135abc. MUSIC LITERATURE. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Prerequisite, Music 35abc. The historical background and comparison of selected symphonic and choral compositions by great composers. (a) Classical Period, (b) Romantic Period, (c) Modern Period.

140abc. INTERPRETATION AND STYLE. 3 Q. Autumn, winter, spring. 1 cr. each quarter. Prerequisite, Music 111c. Piano compositions of different national schools and periods and characteristics of each from the standpoint of interpretation and style. Offered in 1953-54 and in alternate years.

142. SENIOR RECITAL. 1 Q. 2 cr. Prerequisite, registration in Music 8.

151. SCHOOL CHORAL PROGRAM. 1 Q. Winter. Summer. 3 cr. Prerequisite, Music 31a or concurrent registration and junior standing. An advanced course in the study of choral music for the junior and senior high school. Actual study of materials at hand, using procedures applicable to the group performing and materials used.

152. SCHOOL INSTRUMENTAL PROGRAM. 1 Q. Spring. Summer. 3 cr. Prerequisite, Music 31a or concurrent registration and junior standing. An advanced course designed to meet the needs of school music conductors

and directors. A thorough study of suitable music materials for all levels of instruction.

S153. ORCHESTRA MATERIALS. 1 Q. Summer. 3 cr. Prerequisites, Music 31abc, or consent of instructor. A thorough study of methods, books, and literature for the school orchestra.

158abc. ANALYSIS OF FORM. 3 Q. Autumn, winter, spring. 2 cr. each quarter. Prerequisite, Music 41c or concurrent registration. A course designed to familiarize the student with the melodic, harmonic, and formal structure of the different kinds of musical composition.

159abc. COMPOSITION. 3 Q. Autumn, winter, spring. 2 cr. each quarter. Prerequisite, Music 41c. A course in creative writing.

163. RADIO, TELEVISION AND FILMS IN MUSIC EDUCATION. 1 Q. 3 cr. Practical use of out-of-school radio listening and commercial movies in school music classes. Study of films and film strips available, and their use in grade and high school music classes.

169abc COMPOSITION II. 3 Q. Autumn, winter, spring. 2 cr. each quarter. Prerequisite, Music 159c. A continuation of Composition I with writing in larger forms.

179abc. SIXTEENTH CENTURY COUNTERPOINT. 3 Q. Autumn, winter, spring. 2 cr. each quarter. Prerequisite, Music 41abc or concurrent registration. Direct approach to writing in the late 16th century motet style.

FOR GRADUATES

200. RESEARCH AND PROFESSIONAL WRITING. Any quarter. Credit variable to a total of 8. Prerequisite, graduate standing in music. Techniques of research in music education. Emphasis is placed on the selection of problems, the development of the steps of procedure, the technical tools to be used in the writing of a professional paper.

221. CONTEMPORARY TRENDS IN MUSIC EDUCATION. 1 Q. Winter. Summer. 3 cr. Prerequisite, graduate standing in music. A survey of basic needs and objectives in curriculum planning for junior and senior high school music. Study of new procedure and practices and a practical review of basic principles underlying music education.

223. SCHOOL MUSIC ADMINISTRATION AND SUPERVISION. 1 Q. Autumn. Summer. 3 cr. Prerequisite, graduate standing in music. Designed for graduate students whose primary purpose in advanced study is preparation for administrative or supervisory work in music education. A study of school systems, plans for organizing and administering the music program in the elementary, junior and senior high school.

S259. ADVANCED THEORY. 1 Q. Summer. 3 cr. Prerequisite, Music 41c, and graduate standing. The theoretical study of the romantic, impressionistic, and contemporary styles of composition; analysis of the music of these periods, pointing out typical and characteristic devices of each. Emphasis will be placed on the student's composing short pieces synthesizing each style.

262. GRADUATE SEMINAR IN SCHOOL MUSIC. Any quarter. Credit variable 1-5. May be repeated for a maximum of 15 credits.

PHARMACY

Professors Jack E. Orr (Dean), John F. Suchy; Associate Professor Tracey G. Call; Assistant Professors Gordon H. Bryan, Muriel R. Loran.

The School of Pharmacy was established in 1907 at Montana State College and was transferred to the State University campus in 1912.

The School of Pharmacy is a member of the American Association of Colleges of Pharmacy and is accredited as a class "A" school by the American Council on Pharmaceutical Education.

The aim of the School of Pharmacy is to provide theoretical and practical instruction in the several areas of pharmaceutical education, based on a sound background in the basic sciences and in general education, thus enabling the graduate to assume the responsibilities of modern professional practice, useful citizenship, and personal living.

A three year professional program based on two years of general college work and leading to the degree of Bachelor of Science in Pharmacy is offered. The first two years are devoted to the prescribed pre-professional subjects listed below and may be taken in any recognized college or university. The professional curriculum of the School of Pharmacy covers three years and must be taken in residence at Montana State University, although students transferring from other accredited schools of pharmacy may be admitted to an advanced standing determined on the basis of credits presented.

A program of study leading to the Master of Science degree in the areas of pharmacy, pharmaceutical chemistry, pharmacognosy, and pharmacology is also offered.

OPPORTUNITIES. Many opportunities are available in this field to both men and women. Most graduates enter retail pharmacy in rural, neighborhood, "downtown," or prescription stores. Others conduct hospital pharmacies, a particularly attractive field for women. Graduates also find opportunities as representatives for pharmaceutical manufacturers, in government service, in manufacturing pharmacy, and those with advanced degrees are in demand in research positions and in pharmaceutical education.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra and geometry. It is also recommended that the high school preparation include advanced algebra, trigonometry, chemistry, physics and, particularly if the student may pursue advanced studies in pharmacy, a foreign language.

REQUIREMENTS FOR ADMISSION TO THE PROFESSIONAL CURRICULUM. 1. The general requirements for admission to Montana State University as listed earlier in the catalog.

2. At least two years of prescribed pre-pharmacy college courses as follows:

Composition, 9-10 credits; Inorganic Chemistry (incl. qual. anal.), 15-20 credits; General Zoology or Biology, 10 credits; Organic Chemistry, 10 credits; Physics, 15 credits; Botany, 5 credits; Principles of Economics, 5-8 credits; Mathematics (must complete through trigonometry), 5-10 credits; Electives (social sciences, humanities, speech, etc.), 10-15 credits.

Applicants presenting two years of satisfactory college work but with certain deficiencies in the above list may be admitted, but such deficiencies must be removed.

The autumn quarter is the normal time of admission to the School of Pharmacy.

REQUIREMENTS FOR LICENSURE IN MONTANA. An applicant for licensure as a Registered Pharmacist in Montana must pass an examination by the State Board of Pharmacy. To be qualified for this examination, the applicant shall be a citizen of the United States, of good moral character, at least twenty-one years of age, and shall be a graduate of an accredited school of pharmacy. However, such an applicant shall not receive a license until he has completed an internship of at least one year following graduation in an approved pharmacy in the state of Montana.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN PHARMACY. Candidates for the degree of Bachelor of Science in Pharmacy must:

1. Meet the general University requirements for graduation.
2. Complete a course of study which is satisfactory to the staff of the School of Pharmacy.

Candidates for the degree of Master of Science in Pharmacy must comply with the regulations governing graduate study and must complete a program satisfactory to the faculty of the School of Pharmacy.

PRE-PHARMACY CURRICULUM

FIRST YEAR: Chemistry 11abc or 13abc, Zoology 10, English 11ab, Mathematics 10, 13, ROTC 1abc or 21abc, Health and Physical Education 11abc, Botany 13. (Students satisfactorily passing the mathematics placement examination will be exempt from Mathematics 10, in which case they will substitute a social science or humanities elective.)

SECOND YEAR: Chemistry 38ab, Physics 11abc, Economics 14ab, Zoology 23, ROTC 2abc or 22abc, Health and Physical Education 12abc and an elective.

PHARMACY CURRICULUM

FIRST YEAR: Bacteriology 101ab, Business Administration 11a, Pharmacy 10, 14, 21a, 24ab, 26, 52a, Zoology 140ab.

SECOND YEAR: Chemistry 40, 103, Pharmacy 21b, 24c, 52b, 93, 114abc, 115c, 121, 141, Health and Physical Education 32.

THIRD YEAR: Business Administration 151, 162, Pharmacy 77, 95abc, 96, 97abc, 140abc, 175, 176.

FOR UNDERGRADUATES

10. **PRINCIPLES OF PHARMACY.** 1 Q. Winter. 3 cr. The study of metrology, pharmaceutical arithmetic, pharmaceutical Latin, and the form of the prescription including prescription calculations.

14. **INORGANIC PHARMACEUTICAL CHEMISTRY.** 1 Q. Autumn.

4 cr. Prerequisite, Chemistry 13c or equivalent. The inorganic chemicals of medicinal and pharmaceutical importance. Typical substances representative of the various groups of the periodic system are studied in the laboratory with emphasis on official identity and purity tests and incompatibilities.

21ab. OPERATIVE PHARMACY. 2 Q. Spring, 3 cr.; Autumn, 5 cr. Continuous. Prerequisite, Pharmacy 10. The study of fundamental technics and processes and the various classes of pharmaceutical preparations.

24abc. PHARMACOGNOSY. 3 Q. Winter, 3 cr.; Spring, 4 cr.; Autumn, 3 cr. Continuous. Prerequisites, Botany 13, Chemistry 38ab, or equivalents. A study of the plant and animal products used in pharmacy and medicine.

26. HISTORY AND LITERATURE OF PHARMACY. 1 Q. Autumn. 3 cr. Historical evolution of pharmacy, scope of present day pharmacy, literature of the profession and ethical principles which guide the practice of pharmacy.

50. MANUFACTURING PHARMACY. 1 Q. On demand. 3 cr. Prerequisite, Pharmacy 21ab. Study and manufacture of pharmaceuticals in quantities.

52ab. DRUG ANALYSIS. 2 Q. Spring, winter. 5 cr. each quarter. Prerequisite, Pharmacy 14. Quantitative analysis of official drugs and preparations according to the methods of the U.S.P. and N.F.

60. COSMETICS. 1 Q. On demand. 3 cr. Prerequisite, Pharmacy 21ab. Lecture and laboratory in the theory and technic of cosmetic formulation.

77. PHARMACY ADMINISTRATION. 1 Q. Autumn. 3 cr. Prerequisite, senior standing in pharmacy. Problems involved in the management of a retail pharmacy with emphasis on the professional problems of the drug store.

91. HOSPITAL PHARMACY. 1 Q. On demand. 3 cr. Prerequisite, Pharmacy 50. The various procedures and technics employed in the practice of pharmacy in the hospital.

92abc. HOSPITAL PRACTICE. 1-3 Q. On demand. 1-3 cr. each quarter. Prerequisite, Pharmacy 91. A laboratory course in which the student participates in the routine of a hospital pharmacy. At hospital.

93. BIOLOGICALS. 1 Q. Spring. 5 cr. Prerequisites, Bacteriology 101ab and junior standing in pharmacy. Biologicals, antibiotics, vitamins, hormones, and other medicinal products of biological origin.

95abc. DISPENSING. 3 Q. Autumn, 3 cr.; winter, 4 cr.; spring, 4 cr. Prerequisite, Pharmacy 121. The fundamental principles of prescription compounding by means of a detailed study of the common dosage forms and special forms of medication. Fundamental principles involved in product formulation.

96. PHARMACEUTICAL LAW. 1 Q. Spring. 3 cr. Prerequisite, senior standing in pharmacy. State and federal laws pertaining to the practice of pharmacy.

97abc. PHARMACEUTICAL PRACTICE. 3 Q. Autumn and winter. 2 cr. each quarter. Spring, 1 cr. Prerequisite, senior standing in pharmacy. Students are assigned to various pharmacies in Missoula and the School of Pharmacy Apothecary in order to acquaint them with pharmacy as it is practiced in different drug stores.

FOR UNDERGRADUATES AND GRADUATES

102. MEDICINAL PLANTS. 1 Q. Spring or summer, on demand. 2 cr. Prerequisite, Pharmacy 24abc or permission of instructor. The collection, identification, drying, garbling, and milling of crude drugs.

104. TAXONOMY OF MEDICINAL PLANTS. 1 Q. Any quarter, on demand. 3 cr. Prerequisite, Pharmacy 102 or permission of instructor. The herbarium study of medicinal plants.

106. DRUG PLANT PROPAGATION. 1 Q. Spring or summer, on demand. 2 cr. Prerequisite, Pharmacy 24abc. Greenhouse and field practice and problems.

113. DRUG MICROSCOPY. 1 Q. Spring. 2 cr. Prerequisite, junior standing in pharmacy and Pharmacy 24abc. Microscopic examination of drugs, foods and spices. The detection of adulterants and impurities.

114abc. ORGANIC MEDICINAL PRODUCTS. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Prerequisites, Pharmacy 21a and Chemistry 38ab. The various organic substances used medicinally with special emphasis on the correlation of chemical structure with therapeutic activity and incompatibility.

115. ORGANIC MEDICINAL PRODUCTS LABORATORY. 1 Q. Any quarter. 2 cr. May be taken to a maximum of 6 credits. Prerequisite, Pharmacy 114abc or concurrent registration. A laboratory course supplementing Pharmacy 114abc. Synthesis, identity and purity tests, and incompatibilities of typical organic medicinals.

121. PHYSICAL PHARMACY. 1 Q. Winter. 5 cr. Prerequisites, Phar-

macy 21ab and Chemistry 40 or equivalent. The application of physical chemical principles and laws to the preparation and study of pharmaceutical products.

140abc. PHARMACOLOGY. 3 Q. Autumn, winter, spring. 4 cr. each quarter. Prerequisite, Zoology 140ab or equivalent, senior standing in pharmacy. The pharmacodynamics of drugs and its application to therapeutics.

141. BIOASSAY. 1 Q. Winter. 3 cr. Prerequisite, Zoology 140ab. The evaluation of the potency of drugs by biological means.

142. TOXICOLOGY. 1 Q. Spring, on demand. 3 cr. Prerequisite, Pharmacy 140ab. Emergency procedures for the treatment of poisoning, characteristics of the more common poisons, and the recognition and identification of poisons.

145. PARENTERAL SOLUTIONS. 1 Q. On demand. 3 cr. Prerequisite, Pharmacy 93. A study of methods and technics in the manufacture and use of solutions for injection.

150. ADVANCED MANUFACTURING PHARMACY. 1 Q. On demand. 3 cr. Prerequisite, Pharmacy 50. Study of the more complex production technics.

165. ADVANCED ANALYSIS. 1 Q. On demand. 3 cr. Prerequisite, Pharmacy 52ab. A study of the more involved methods of analysis as applied to pharmaceuticals.

175. VETERINARY PHARMACY. 1 Q. Winter. 3 cr. A study of pharmaceuticals used in the treatment of diseases of animals.

176. PESTICIDES. 1 Q. Spring. 3 cr. Fungicides, herbicides, insecticides, rodenticides, and miscellaneous pest control methods and materials.

198. PHARMACY SEMINAR. Any quarter. 1 cr. each quarter. May be taken to a maximum of 6 credits. Prerequisite, senior standing in pharmacy.

199. SPECIAL PROBLEMS IN PHARMACY. Any quarter. 2-5 cr. May be repeated up to a total of 10 cr. Prerequisite, senior standing in pharmacy. Research studies by conference, library and laboratory research in pharmacy, pharmaceutical chemistry, pharmacognosy, or pharmacology.

FOR GRADUATES

201. RESEARCH. Credits and hours to be arranged.

205. ALKALOIDS. 1 Q. Any quarter. 4 cr. Prerequisite, Pharmacy 114abc or equivalent. Study of the structure, synthesis, isolation, identification of the alkaloids.

206. VEGETABLE DRUG HISTOLOGY. 1 Q. Spring. 3 cr. Prerequisites, Pharmacy 102, Botany 21, 168. Histological technic and descriptions of crude drug sections.

207. STEROLS, TERPENES, AND VOLATILE OILS. 1 Q. Any quarter. 3 cr. Prerequisite, Pharmacy 114abc or equivalent. Study of the occurrence, preparation, isolation, and chemistry of the sterols, terpenes, and volatile oils.

209. ADVANCED PHARMACOLOGY. 1-3 Q. Any quarter. 3-5 cr. Prerequisite, Pharmacy 140abc or equivalent. The more involved actions of drugs upon cells and organs.

210. ADVANCED PHARMACY. 1-3 Q. Any quarter. 3-5 cr. Prerequisite, Pharmacy 95 or equivalent. The more complex problems involved in formulation and preparation of pharmaceuticals.

214abc. ADVANCED ORGANIC MEDICINAL PRODUCTS. 3 Q. Autumn, winter, spring. 3-5 cr. each quarter. Given in alternate years. The organic medicinals with emphasis on proof of structure, synthetic procedures, structure-activity relationships, etc.

PHYSICAL SCIENCES

Following are the requirements leading to the Bachelor of Arts degree with a major in physical sciences:

University Requirements	Credits	
English Composition	9-10	
Physical Education	6	
Military Science (men)	6	21-22
Group Requirements		
Group II	12	
Group III	12	24

Requirements outside major

Biological Science 13abc or 15 credits in Biological Science selected from Zool. 10, 24, Bot. 10ab or 11a; at least 5 cr. must be selected from each of the two fields Botany and Zoology	15	
Language	8-23	23-38

Major Requirements

Mathematics through Analytical Geometry	15-20	
Chemistry 11abc or 13ab and 13c	15-20	
Physics 11 or 20	15	
Geology 11ab, 15	13	
Astronomy	5	63-73

Fifteen credits from one of the following sequences:

Mathematics 22, 23, 110	15	
Physics 114, 122, 146, 162 (Requires Math. 22, 23)	25	
Chemistry 17, 19 or 38, 40	15	
Geology 22abc or 24ab, 26, and 120	15	15-25

Free Electives		40-4
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If a teaching certificate and the advanced sequence in Physics are desired substitute 24 credits in Education for 15 credits in Biological Science and 9 credits of free electives.

If a teaching certificate and the advanced sequence in Mathematics, Chemistry or Geology are desired substitute 24 credits in Education for 24 credits of free electives.

PHYSICS

Professors C. R. Jeppesen, G. D. Shallenberger (Chairman);
Assistant Professor Mark J. Jakobson. Scientific Technician
Archer Taylor.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra and geometry. It is also recommended that the high school preparation include advanced algebra, solid geometry, and trigonometry.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN PHYSICS. In addition to the general requirements for graduation listed earlier in the catalog forty or more credits in physics must be earned for the Bachelor of Arts degree. In preparation for advanced courses, a student should take Physics 20abc in the sophomore year. Essential courses offered in other departments: Mathematics 13, 16, 21, 22, 23, 107a; Chemistry 13; a reading knowledge or five quarters (23 to 25 credits) in one modern language.

FOR UNDERGRADUATES

11abc. **GENERAL PHYSICS.** 3 Q. Autumn, winter, spring. (For summer, see summer session bulletin.) 5 cr. each quarter. Prerequisite for 11a, Mathematics 10; 11a is prerequisite for 11b and 11c. This course satisfies medical school requirements in general physics. (a) Mechanics and wave motion; (b) sound, electricity and magnetism; (c) heat and light. Students may not receive credit in both 11abc and 20abc.

20abc. **GENERAL PHYSICS.** 3 Q. Autumn, winter, spring. 5 cr. each quarter. Prerequisites: for 20a, Mathematics 13; for 20b, 20a; for 20c, 20b; high school physics is desirable. This course satisfies medical and technical school requirements in general physics. (a) mechanics and wave motion; (b) sound, electricity, and magnetism; (c) heat and light.

25. **SELECTED TOPICS FROM GENERAL PHYSICS.** 1 Q. Winter. 5 cr. Prerequisite, Physics 20a or 11a. Topics selected include heat, light, electricity, and magnetism. This course is essentially a duplication of parts of Physics 11bc and 20bc.

50ab. **LABORATORY ARTS.** 2 Q. Autumn, winter. 1 cr. each quarter. Open to upper division science majors who have completed Physics 20abc. Elements of glass blowing and machine shop practice.

60. **WEATHER.** 1 Q. Winter. 3 cr. Prerequisite, Physics 20abc. Not a laboratory course. Given in 1953-54 and in alternate years.

70. **GEOMETRICAL OPTICS.** 1 Q. Spring. 2 cr. Prerequisite, Physics 20abc or 11abc and Mathematics 13 and 16. Lectures and laboratory. Given 1953-54 and in alternate years.

114. **ELECTRICITY.** 1 Q. Winter. 5 cr. Prerequisites, Physics 20abc

and Mathematics 23 or concurrent registration. Lectures and laboratory. Given in 1954-55, and in alternate years.

122. LIGHT. 1 Q. Autumn. 5 cr. Prerequisites, Physics 20abc and Mathematics 22 or concurrent registration. Lectures and laboratory. Given in 1954-55, and in alternate years.

131ab. SELECTED TOPICS. 2 Q. Any quarter. 1-5 cr. each quarter. Prerequisites, consent of instructor and 15 credits in college physics.

146. HEAT. 1 Q. Winter. 5 cr. Prerequisites, Physics 20abc and Mathematics 23 or concurrent registration. Not a laboratory course. Given 1953-54 and in alternate years.

152. ATOMIC PHYSICS. 1 Q. Autumn. 5 cr. Prerequisites, Physics 20abc and Mathematics 22 or concurrent registration. Lectures and laboratory. Given 1953-54, and in alternate years.

160. INTRODUCTION TO NUCLEAR PHYSICS. 1 Q. Spring. 3 cr. Prerequisite, Physics 152. Not a laboratory course. Given in 1953-54 and in alternate years.

166. ELECTRONICS. 1 Q. Spring. 5 cr. Prerequisites, Physics 114 and Mathematics 23. Lectures and laboratory. Given in 1954-55, and in alternate years.

170abc. THEORETICAL PHYSICS. 3 Q. Autumn, winter, spring. 5 cr. each quarter. Prerequisites, Physics 20abc and Mathematics 23. Physics 170a is a prerequisite for 170b; 170b is a prerequisite for 170c. Not a laboratory course.

180. PHYSICS SEMINAR. 1 Q. Spring. 1 cr. A library and discussion course required of physics majors.

FOR GRADUATES

201. RESEARCH. Given subject to demand. 2-10 cr. Prerequisites, graduate standing and consent of instructor.

212abc. ADVANCED EXPERIMENTAL PHYSICS. 3 Q. Autumn, winter, spring. 2 cr. each quarter. Given subject to demand.

252. RADIATION AND ATOMIC STRUCTURE. Given subject to demand. 5 cr. Prerequisites, Physics 152 and graduate standing.

254ab. QUANTUM MECHANICS. 2 Q. Winter, spring. 5 cr. each quarter. Prerequisites, Physics 152, 170abc and graduate standing. Given subject to demand.

PRE-MEDICAL SCIENCES

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra and geometry. It is also recommended that the high school preparation include advanced algebra, chemistry, French or German and a well-rounded background in English literature and in the social studies.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN PRE-MEDICAL SCIENCES. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Pre-Medical Sciences.

FIRST TWO YEARS: Chemistry 11abc or 13ab, 13c, 38ab; Zoology 10, 15 or Botany 10a or 11b; Physics 11abc or 20abc; French or German through course 13b (the number of quarters taken depends upon high school preparation and placement examination); electives selected in general from the non-sciences to make 90 credits.

SECOND TWO YEARS: Bacteriology 117, 118, 119; Chemistry 17, 40; Psychology 11; Zoology 23, 102; French or German through course 15; additional electives to meet requirements for graduation.

PSYCHOLOGY AND PHILOSOPHY

Professors E. A. Atkinson (Chairman), Maurine Clow, Edwin L. Marvin, Bert R. Sappenfield; Assistant Professor Frederick R. Fosmire; Lecturer Samuel L. Buker; Instructors F. L. Brissey, Kenyon B. DeGreene, Edwin G. Kellner, Kermit E. Severson.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN PSYCHOLOGY AND PHILOSOPHY. A foreign language is not required for a degree, but is strongly recommended for those who intend to do graduate work.

Senior examinations will be given only to candidates for honors.

In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Psychology, Philosophy or a combination of Psychology and Philosophy.

A. PHILOSOPHY MAJOR: 45 or more credits in philosophy, including Philosophy 50, 51, 52a, 52b, and 55.

B. PSYCHOLOGY MAJOR: 45 or more credits in psychology, including Psychology 11, 12a and 12b or 12c, 104, 105, 111, 129, 130, and certain other courses recommended by the adviser, such as Zoology 10 or 24 and Mathematics 25.

C. COMBINED MAJOR: 45 or more credits in philosophy and psychology combined. This concentration is designed for a program of general education rather than for professional preparation. The adviser will assist the student in selecting a combination of courses depending upon the student's need.

PHILOSOPHY

FOR UNDERGRADUATES

50. LOGIC. 1 Q. Autumn. Spring. 5 cr. A study of the valid forms of reasoning, the methods of science, and the detection of fallacies.

51. ETHICS. 1 Q. Winter. 5 cr. Inquiry into the nature of moral values, the standards of moral judgment, and the moral problems arising in personal life and in social relations.

52a. HISTORY OF ANCIENT AND MEDIEVAL PHILOSOPHY. 1 Q. Winter. 5 cr. Prerequisite, sophomore standing or consent of instructor.

52b. HISTORY OF MODERN PHILOSOPHY. 1 Q. Spring. 5 cr. Prerequisite, either Philosophy 55 or Philosophy 52a.

55. INTRODUCTION TO PHILOSOPHY. 1 Q. Autumn. Prerequisite, sophomore standing or consent of instructor. A study of human nature and the human effort to establish standards of thought, feeling and conduct. Topics treated will include personal ethics, social and political philosophy, the meaning of religion for man, and the endeavor to reach a unified view of the world.

S144. PHILOSOPHY OF MODERN PSYCHOLOGY. 1 Q. Summer. 3 cr. Prerequisite, Psychology 11 or 25a and junior standing. The logical foundation of modern psychological science and consideration of some of the philosophical problems of behavior science as a basis of the educative process.

156. CONTEMPORARY PHILOSOPHY. 1 Q. Autumn. 5 cr. Prerequisite, junior standing and Philosophy 52b. (52b may be waived by consent of instructor.) A study of selected philosophies of the present and recent past. The content of the course will vary from year to year. Not given in 1953-54.

157. METAPHYSICS AND EPISTEMOLOGY. 1 Q. Autumn. 5 cr. Prerequisite, Philosophy 52b and consent of the instructor. Philosophical theories concerning the nature of reality and the validity of human knowledge.

191. PROBLEMS IN PHILOSOPHY. 3 Q. Autumn, winter, spring. Prerequisite, 15 credits in Philosophy and consent of the instructor. Credit variable. Not more than nine credits may be applied toward graduation.

PSYCHOLOGY

FOR UNDERGRADUATES

10. HOW TO STUDY AND WORK EFFECTIVELY. 1 Q. Any quarter. 3 cr. Prerequisite, permission of the instructor. Designed to assist students who have good aptitude but low performance record.

11. INTRODUCTION TO PSYCHOLOGY. 1 Q. Autumn. Winter. Spring. Summer. 5 cr. Open to all students. An outline study of the whole field, and an introduction to the special courses in psychology.

12abc. EXPERIMENTAL PSYCHOLOGY. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Prerequisite, Psychology 11. Students may enter any quarter. (a) Sensation and Perception. A survey of sensory and perceptual processes with special attention to experimental procedures. Emphasis on visual perception and auditory perception. Assigned laboratory work. (b) Learning and Motivation. Lectures, demonstrations, and assigned laboratory work dealing with the methodology, results and interpretations of human and animal experiments concerning learning and motivation. (c) Action. An experimental course dealing with techniques and data pertaining to the psychological problems of determinants and concomitants of action. Emphasis on operation of control systems and man-machine relations. Assigned laboratory work.

13. CHILD AND ADOLESCENT PSYCHOLOGY. 1 Q. Autumn. Spring. Summer. 5 cr. Prerequisite, Psychology 11. The psychological development of the child from birth through adolescence.

14. SOCIAL PSYCHOLOGY. 1 Q. Autumn. Winter. Spring. 5 cr. Prerequisite, Psychology 11. Effects of social factors on the personality and behavior of individuals. Psychology of propaganda, leadership, morale, social attitudes and related topics.

30. APPLIED PSYCHOLOGY. 1 Q. Autumn. Spring. 5 cr. Prerequisite, Psychology 11. General principles of applied psychology. Special reference to the psychology of student life. The psychology of industry, law, the arts, safety, medicine, student problems, and related subjects.

32. PSYCHOLOGY OF BUSINESS. 1 Q. Autumn. Winter. Spring. 5 cr. Prerequisite, Psychology 11.

FOR UNDERGRADUATES AND GRADUATES

S103. PSYCHOLOGY OF LEARNING. 1 Q. Summer. 3 cr. Prerequisite, Psychology 12 or Education 25a and junior standing. A survey of systematic and theoretical interpretations in learning.

104. SYSTEMATIC PSYCHOLOGY. 1 Q. Winter. 5 cr. Prerequisite, junior standing and one quarter of Psychology 12. A study of the historical development of the major psychological systems; functionalism, structuralism, behaviorism, psychoanalysis, gestalt, etc.

105. PHYSIOLOGICAL PSYCHOLOGY. 1 Q. Spring. 3 cr. Prerequisite, Psychology 11, one quarter of Psychology 12, Zoology 10 and junior standing. A study of certain physiological and neurological functions related to psychological activity.

111. ADVANCED GENERAL PSYCHOLOGY. 1 Q. Autumn. 5 cr. Prerequisite, one quarter of Psychology 12.

S113. ADVANCED CHILD AND ADOLESCENT PSYCHOLOGY. 1 Q. Summer, 4 cr. Prerequisite, junior standing; Psychology 13 or Education 25a and teaching experience. Systematic consideration of theories and research on motivation, personality, emotions, attitudes, social learning and adjustment in children from birth through adolescence.

115. ABNORMAL PSYCHOLOGY. 1 Q. Autumn. Spring. Summer. 5 cr. Prerequisite, Psychology 11 and junior standing. A study of abnormal phenomena and mental disorders; sleep and dreams; the subconscious; hypnosis; psychoanalysis.

116. PSYCHOLOGY OF ADJUSTMENT AND MENTAL HYGIENE. 1 Q. Winter. 5 cr. Prerequisite, Psychology 11 and junior standing. A general study of all aspects of mental hygiene and the adjustment of the personality to modern life. Some emphasis on the mental hygiene of the school room.

119. MENTAL HEALTH IN THE CLASSROOM. 1 Q. Any quarter. 4 cr. Prerequisite, Psychology 116; or Education 25a, 140, and 152; or, Education 25a and extensive teaching experience; consent of instructor. Offered by extension only.

This course is designed for in-service training of classroom teachers. Whenever possible it will be given by the staff of one of the State Mental Hygiene Clinics. Students may not receive credit for this course and the identical course Education 119.

128. PSYCHOLOGY OF PERSONALITY. 1 Q. Any quarter. 3 cr. Prerequisite, Psychology 11 and junior standing. Principals of personality organization and processes of disorganization. The social stimulus values of modes of behavior and personality characteristics.

129. INDIVIDUAL DIFFERENCES. 1 Q. Autumn. 5 cr. Prerequisite, Psychology 11 and junior standing. Principles of individual differences and their measurements. Emphasis on test construction and the principles of interpretation of psychological tests.

130. PSYCHOLOGICAL TESTING. 1 Q. Winter. 5 cr. Prerequisite, Psychology 129 and junior standing. Description, application, and interpretation of specific psychological tests to measure intelligence, aptitudes, interests, personality characteristics, etc.

131. CLINICAL PSYCHOLOGY. 1 Q. Spring. 5 cr. Prerequisite, Psychology 115 and 130, and junior standing; open only to psychology majors. Techniques applicable to clinical problems. Emphasis on history taking, diagnostic interviewing and testing, and the therapeutic interview.

132. INDIVIDUAL TESTING. 1 Q. Any quarter. 3 cr. May be repeated to a maximum of 6 credits. Prerequisite, Psychology 129. A study of, and laboratory practice in, the current, individual psychological tests, such as the Binet Scale, the Wechsler-Bellevue, Thematic Apperception, and the Rorschach.

140. INDUSTRIAL PSYCHOLOGY. 1 Q. Spring. 3 cr. Prerequisite,

Psychology 11 and junior standing. Applications of psychology in industry; job analysis; accident prevention; development of skill; fatigue; motives in industry; psychological problems of supervision and management.

141. PERSONNEL PSYCHOLOGY. 1 Q. Winter. 3 cr. Prerequisite, Psychology 11 and junior standing. Psychological principles in personnel; development and usefulness of tests, rating scales and other technical personnel aids in selection, classification and training of personnel; psychological techniques in worker efficiency and adjustment problems.

174. COUNSELING LABORATORY. 1 Q. Any quarter. 4 cr. Prerequisite, Psychology 130, junior standing, and permission of the instructor. This course is designed to afford practical experience in psychological testing, clinical work and counseling.

S175. PSYCHOLOGY OF COUNSELING HIGH SCHOOL GIRLS. 1 Q. Summer. 3 cr. Prerequisite, Psychology 130 or Education 25a, teaching experience and junior standing. Interview methods, test interpretation, counseling techniques, behavior problems, and such other problems as are commonly handled by a high school dean of girls.

190. PROBLEMS IN PSYCHOLOGY. 3 Q. Autumn, winter, spring. Summer. Credit variable. Prerequisite, 15 credits in psychology and consent of the instructor. Not more than nine credits may apply toward graduation.

FOR GRADUATES

201. RESEARCH. Any quarter. Credit variable. Permission of instructor required. Work on selected problems under direction.

212. ADVANCED EXPERIMENTAL PSYCHOLOGY. 1 Q. Any quarter. 3-5 cr. Prerequisite, Psychology 12abc and graduate standing.

231. HOSPITAL INTERNSHIP. Any quarter. 3 cr. Prerequisite, permission of instructor and graduate standing. May be repeated for a total of 9 credits.

PUBLIC SERVICE DIVISION

Andrew C. Cogswell, director; Bert B. Hansen, coordinator of community services; Earl Martell, director of publications and editor of news service; William Spahr, radio programing director; Miss Mary Margaret Courtney, Home Study and Adult Education secretary; Mrs. Ralph E. Fields, alumni records secretary.

The Public Service Division is the administrative agency through which the University carries on its off-campus activities and services. In it are the departments of Home Study and Adult Education, Alumni Relations, Radio Programing, and the Publications and News Service. In addition the divisions work directly with communities and groups in community historical pageant-dramas, community surveys, institutes, forums, etc. For organizations desiring speakers and programs from the campus, a lecture and concert bureau is maintained.

Within the Public Service Division are maintained the campus offices of the Montana State University Alumni Association and the Endowment Foundation of Montana State University.

The division publishes a special bulletin on Home Study and Adult Education offerings, which may be obtained from the Director, Public Service Division, Montana State University, Missoula, Montana.

RADIO

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra and geometry. It is also recommended that the high school preparation include advanced algebra, solid geometry, and trigonometry.

SPECIAL REQUIREMENTS FOR THE CERTIFICATE IN RADIO. Graduation from the University and successful completion of the curriculum of technical courses in radio.

Both professional and technical courses are offered in radio in the departments of English and Physics and in the schools of Journalism and Music. The curriculum of technical courses in radio is for students who desire technical rather than professional training.

PROFESSIONAL COURSES

English, ESp 45, 46, 48, EDr 45; Journalism 45, 46, 47, 48; Music 45a; Physics 166.

CURRICULUM OF TECHNICAL COURSES

Freshmen: R1, R2.

Sophomore: Physics 11ab; R4a, R4b, R3, R5.

Junior: R6, R7, R8.

TECHNICAL COURSES OFFERED FOR UNDERGRADUATES

R1. INTRODUCTION TO RADIO. 1 Q. Winter. 2 cr. Open to freshmen. Radio as an instrument of mass communication and entertainment; its history, extent, economics, regulation and responsibilities.

R2. VOICE AND DICTION IN RADIO. 1 Q. Spring. 3 cr. Prerequisite, R1. Open to freshmen. This course may not be substituted for ESp 48 by English (Speech) majors. Credit will not be given for both R2 and ESp 48. Phonation, articulation, enunciation, pronunciation, vocal variety, effective speaking and reading, related to radio speech.

R3. RADIO ELECTRONICS. 1 Q. Spring. 5 cr. Prerequisite, Physics 11ab. Not open to freshmen. A study of vacuum tubes, radio circuits, high frequency oscillation, electronic measurements, and regulations of the Federal Communication Commission.

R4ab. MUSIC IN RADIO. 2 Q. Autumn, winter. 3 cr. each quarter. Not open to freshmen. (a) Autumn. Prerequisites, R1, R2. Study of music in its relationship to radio programs, place of music in radio, planning programs, music productions, selection of personnel and talent. (b) Winter. Prerequisite R4a. Continuation of R4a, and: problems of copyright clearance, music continuity, microphone technique for music productions, developing music library for radio stations, arranging, composing, and musicology for radio.

R5. STUDIO EQUIPMENT. 1 Q. Spring. 2 cr. Prerequisite, Physics 11ab, R1, R2. Not open to freshmen. An introduction to the mechanics of equipment used in the broadcasting studio. A laboratory course designed for the beginning radio operator.

R6. RADIO NEWS. 1 Q. Autumn. 3 cr. Prerequisites, R1, R2, R5, and junior standing. Students may not receive credit for Journalism 45 and R6. Techniques of news gathering, writing, and announcing for the small station.

R7. RADIO ADVERTISING. 1 Q. Winter. 3 cr. Prerequisites, R1, R2, R4ab, R5, and junior standing. Students may not receive credit for Journalism 48 and Radio 7. An elementary course in the principles of radio advertising.

R8. PROGRAMING AND DIRECTING. 1 Q. Spring. 3 cr. Prerequisites, R1, R2, R4ab, R5, R6, and R7. Open to juniors and seniors. Students may not receive credit for both R8 and ESp 46ab. A correlated study of programing techniques, preparation and direction of radio programs.

RELIGION

Bruce K. Wood, Director; Clara C. Wood, Associate Director.

Nonsectarian courses in Religion are provided by the affiliated Montana School of Religion, which is supported by gifts and controlled by a Board of Trustees representing the University and supporting denominations.

18R. INTRODUCTORY STUDY OF RELIGION. 1 Q. Autumn. Winter. 2 cr. Open to all students. An introduction to the purposes, methods, and content of research into the origins and interpretations of scriptures including the Bible, the comparative study of the living religions of the world, the study of Church history, and the psychology of religion.

19R. SURVEY OF THE BIBLE. 1 Q. Autumn. 3 cr. Open to all students. A study of the backgrounds, origins, content, and basic messages of the Bible. Includes consideration of all the major positions and points of view for the student to investigate, but does not dictate or hold the student responsible for accepting any particular point of view.

23R. LIFE AND TEACHINGS OF JESUS. 1 Q. Autumn. 3 cr. Open to all students. An historical and critical study of the life and teachings of Jesus, with an attempt to understand Him in terms of His own first-

century environment and to discover the relevance of His teachings for today.

27R. PSYCHOLOGY OF RELIGION. 1 Q. Winter. Spring. 3 cr. Prerequisite, Psychology 11. A study of the nature of religious experience; its emergence and development in individuals; its psychological background; and its various forms of expression.

41R. CHRISTIANITY TO 1700. 1 Q. Winter. 3 cr. Open to all students. A study of the background and development of the Christian Church, as recorded in the Acts and the Epistles of the New Testament, its spread through the Roman Empire and its growth in Europe, through the Reformation.

42R. CHRISTIANITY IN AMERICA. 1 Q. Spring. 3 cr. Open to all students. A study of the development and influence of the Christian Church in this country, including the effects of colonial development, wars, evangelical revivals and development of denominations and sects, settlement of the West, industrialization and urbanization of modern life, the missionary out-reach of the Churches and the present trend toward a united Church.

104R. COMPARATIVE WORLD RELIGIONS. 1 Q. Spring. 5 cr. Prerequisite, junior standing. A comparison of the living religions of the world showing their historical sequence and interrelations, with assigned readings from their literature.

RESERVE OFFICERS TRAINING CORPS DEPARTMENT

Coordinator Frank W. Milburn, Lt. Gen. U. S. Army, Ret.

Military and Air Science are courses conducted by Army and Air Force officers at the University as part of the program of the armed forces of the nation, known as the Reserve Officers Training Program or ROTC. Unless waived for cause in individual cases, all undergraduate male students other than veterans are required to take the basic course for two years. The advanced courses normally lead to commissions in the armed forces of the United States. No degrees are offered by the University in military or air science; students who pursue the advanced courses plan to secure degrees in some other curriculum. The scope of instruction is indicated below. Most University graduates who complete these courses and secure their commissions are ordered to active duty or sent into further training or special graduate work. In active service, the majority are assigned duties for which their University training has prepared them. A variety of careers in the Army or Air Force are open to them, although many plan only to serve out their required period of duty pursuant to laws and regulations for the defense of the nation in the present international difficulties.

MILITARY SCIENCE AND TACTICS

Professor Samuel H. Hays (Lieutenant Colonel, Infantry) (Chairman); Associate Professor Charles G. Ray (Major, Infantry); Assistant Professor Phil R. Garn (Captain, Infantry); Instructor Robert W. Engberg (First Lieutenant, Infantry); Assistants John N. Southern (M/Sgt, Infantry), Frank C. Baker (M/Sgt, Infantry), Lionel J. Bonnin (SFC, RA unassigned), Robert E. Shipley (SFC, Infantry), Bern Chadwick (SFC, Ordnance).

BASIS COURSE: Required for all undergraduate degrees unless waived for cause. This work must be completed during the first six quarters unless deferred upon petition by the student.

1abc. MILITARY SCIENCE I. 3 Q. Autumn, winter, spring. 1 cr. per quarter. Student may enter any quarter. Individual Weapons and Marksmanship; American Military History; Leadership, Drill and Exercise of Command.

2abc. MILITARY SCIENCE II. 3 Q. Autumn, winter, spring. 1 cr. per quarter. Prerequisite is successful completion of the corresponding quarter of Military Science I. Crew Served Weapons and Gunnery; Map Reading; Leadership, Drill and Exercise of Command.

ADVANCED COURSE: The Advanced Course includes instruction and training leading to a commission as a Second Lieutenant in the United States Army Reserve. Once begun, successful completion of the 6 quarters and the 6 weeks Summer Camp is a requirement for all Bachelor Degrees, unless sooner honorably dismissed. Admission to the Advanced Course is on application of the student and selection by the PMS&T and the President of the University. To make application the student must:

- (1) Have not reached the 27th anniversary of his birth.
- (2) Be a citizen of the United States.
- (3) Have successfully completed the Basic Course or have been granted credit for it by the PMS&T.
- (4) Have a grade average of "C" or better.

11abc. MILITARY SCIENCE III. 3 Q. Autumn, winter, spring. 3 cr. per quarter. Small Unit Tactics and Communications; Organization, Function and Mission of the Arms and Services; Military Teaching Methods; Leadership; Leadership, Drill and Exercise of Command.

12abc. MILITARY SCIENCE IV. 3 Q. Autumn, winter, spring. 3 cr. per quarter. Prerequisite is successful completion of the corresponding quarter of Military Science II. Logistics; Operations; Military Administration and Personnel Management; Service Orientation; Leadership, Drill and Exercise of Command.

20. MILITARY SCIENCE V. Summer Camp. No credit. 6 weeks. (Last week of June through first week of August.) Practical work at an Army Training Center. Taken during the summer after completion of ROTC 11, Military Science III.

AIR SCIENCE AND TACTICS

Professor Clarence V. McCauley (Lt. Col. USAF) (Chairman); Associate Professors Edwin C. Frost (Major, USAF), George H. Koehler (Major, USAF), Edward J. Zeuty (Major, USAF); Assistant Professor George T. Zeigler (Captain, USAF); Assistants Charles R. Anderson (T/Sgt, USAF), William S. Feder (T/Sgt, USAF), Richard G. Leonard (M/Sgt, USAF), Morris W. Porter (M/Sgt, USAF), Charles May (M/Sgt, USAF).

BASIC COURSE: Required for all undergraduate degrees. This work must be completed during the first six quarters unless deferred upon petition by the student. Two quarters of ROTC 30, Air Force Band, may be substituted for Leadership, and Drill, portion of AFROTC 21c and AFROTC 22c.

21abc. AIR SCIENCE I. 3 Q. Autumn, winter, spring. 1 cr. per quarter. Introduction to AFROTC, Introduction to Aviation. Fundamentals of Global Geography, International Tensions and Security Organizations, and Instruments of National Military Security. Drill—Basic Military Training.

22abc. AIR SCIENCE II. 3 Q. Autumn, winter, spring. 1 cr. per quarter. Elements of Aerial Warfare; Targets, Weapons, Aircraft, Air Ocean, Air Force Bases and Forces; and Careers in the Air Force. Leadership Laboratory—Cadet non-commissioned officer training.

30. AIR FORCE BAND. 1 Q. Spring. 1 cr. Admission must be approved by the School of Music. Band formations and Marching; Military Music; Military Ceremonies.

ADVANCED COURSE: The AFROTC advanced course provides fundamental training designed to develop the cadet into a well-rounded junior Air Force officer. It includes a six week summer encampment between the junior and senior years. No flying training is offered as part of the course, but graduates have opportunities for Pilot or Aerial Observer training in the grade of Second Lieutenant. While serving in an active duty status, selected graduates with a major in technical or professional subjects are also given opportunities for graduate work in their specialties leading toward higher degrees at various leading Universities as well as at the USAF Institute of Technology. Admission to the Advanced Course is on application of the student and selection by the PAS&T and the President of the University. Once begun successful completion of the six quarters and the six weeks summer camp is a requirement for all bachelors degrees.

To be eligible, the student must:

- (1) Not have reached his 25th birthday at the time of enrollment in the course. In the case of students who are veterans, the age limit may be extended.
- (2) Be a citizen of the United States.
- (3) Have successfully completed the basic course, or have been granted credit for the course by the PAS&T.
- (4) Be in good standing in the University.

It is the policy of the Air Force to commission students completing the Advanced Course in a Military Specialty corresponding to their academic major.

31abc. AIR SCIENCE III. 3 Q. Autumn, winter, spring. 3 cr. per quarter. Air Force Commander and Staff; Problem Solving Techniques; Communications Process and Air Force Correspondence; Military Law Courts and Boards; Aerodynamics and Propulsion, Aircraft Engines, Navigation, Weather; Air Force Base Functions, and Leadership Laboratory.

32abc. AIR SCIENCE IV. 3 Q. Autumn, winter, spring. 3 cr. per quarter. Continuation of 31abc and summer camp training. Principles of Leadership and Management; Career Guidance; Military Aspects of World Political Geography; Military Aviation and the Art of War; Briefing for Commissioned Service; and Leadership Laboratory.

40. AIR SCIENCE V. Summer Camp. No credit. Six weeks. (Last week of June through the first week of August.) Practical application at an Air Force Base of the principles learned in AFROTC classroom work. Taken during the summer after completion of AFROTC 31, Air Science III. Individual Weapons. Familiarization Flying, Field Exercises, USAF Base Activities and Equipment, Air Base Problems, Physical Training, and Drill.

SECRETARIAL-HOME ARTS

Following are the requirements leading to the Bachelor of Arts degree with a major in Secretarial-Home Arts.

University Requirements	Credits	
English Composition	9-10	
Physical Education	6	15-16
Group Requirements		
Group III (General 15abc recommended)	12-15	
Group I	12-15	24-30
Special requirements outside major		
Economics 10, Anthropology 15, Sociology 17	15	
History 12ab	10	
Political Science 14	5	
Psychology	5	35
Major Requirements		
Home Economics 17abc, 24, 80, 119, 124, 129	35	
Business Administration 20 or 21 (4 quarters), 22 (3 quarters), 25, 26, 27	29	64
(Students may elect additional courses in Business Administration not to exceed 12 credits.)		
Free Electives		48-41
		186

SOCIAL SCIENCES

Following are the requirements leading to the Bachelor of Arts degree with a major in Social Sciences:

University Requirements	Credits	
English Composition	9-10	
Physical Education	6	
Military Science (men)	6	21-22
Group Requirements		
Group I	12-15	
Group III	12-15	24-30
Major Requirements		
Economics 14ab, 10, or 19 and 8 credits of upper division work	21	
History 12ab, 21 (2 quarters) and 103 or 132 or 119	22	
Political Science 14, 17ab, 20, 145, 108	21	
Anthropology 14 or 15, Sociology 17, 25 and 4 credits of upper division work	22	
Fourteen credits of upper division work in one of the above fields in addition to those listed	14	100
Free Electives		41-40
		186

For teaching certificate elect 24 hours in Education.

SOCIOLOGY, ANTHROPOLOGY, SOCIAL WORK

Professor Gordon Browder (Chairman); Associate Professor Harold Tascher; Assistant Professor Carling I. Malouf; Instructor James W. Carroll.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN SOCIOLOGY, ANTHROPOLOGY, OR SOCIAL WORK. In addition to the general requirements for graduation listed earlier in the catalog fifty credits in departmental courses are required for the Bachelor of Arts degree with a major in Sociology, Anthropology, or Social Work.

- A. **SOCIOLOGY:** At least 35 credits must be in sociology courses, including Sociology 16, 25, and 118. Anthropology 14 or 15 must be taken. Remaining credits for the major may be selected from Anthropology and Social Work courses. Students selecting the sociology major must complete Economics 14ab. When possible, Mathematics 25 should be taken. It is recommended that students planning to take graduate work elect a foreign language.
- B. **ANTHROPOLOGY:** At least 30 credits must be in anthropology courses. Sociology 16 and 118 must be completed. Remaining credits may be selected from sociology and social work courses. Mathematics 25 is recommended.

C. SOCIAL WORK:

- 1. **GENERAL INFORMATION:** This curriculum provides a social science concentration with emphasis on social work. It leads to a major in social work, and is designed to meet the needs of:
 - a. The student who wishes to prepare for graduate training in professional social work.
 - b. The student who wishes to prepare for social work positions which do not require graduate professional training.
 - c. The general student who wants to be prepared for intelligent and responsible participation in community life.

A student who plans to enter a professional school of Social Work should select courses in line with his chief interests such as in social case work, social group work, community organization and welfare administration, social welfare research, community recreation, school social work or personnel work in industry.

- 2. **MAJOR REQUIREMENTS:** A minimum of 30 credits in social work courses is required. During the first two years, the following courses should be taken: Anthropology 14 or 15, Economics 14ab, History 12ab or 21bc, Political Science 17ab, Psychology 11, and Sociology 16 and 17.

One course in addition to those listed above must be taken in each of the fields of anthropology, economics, history, political science, psychology and sociology to a total of at least 20 credits. These courses should be selected from the following: Anthropology 142; Economics 105, 107, 110, 113ab, 114, 115, 120, 130, 161; History 122, 125, 126, 147; Political Science 116ab, 120ab, 124, 146; Psychology 115, 116, 129, 130; Sociology 100, 119, 120, 121, 122, 127, 129.

- D. **COMBINED ECONOMICS AND SOCIOLOGY:** For those who plan to go into work that requires a background in both sociology and economics the following courses in addition to general departmental requirements should be completed: Economics 101, 104a, 111 or 112, 113a; Anthropology 15; Sociology 16, 119, 120, 122, 123, 129. The remaining credits for a major will be selected in counsel with the student's adviser. A minimum of 60 credits is required for the combined economics and sociology major.

SOCIOLOGY

FOR UNDERGRADUATES

- 16. **ELEMENTARY SOCIOLOGY.** 1 Q. Autumn. Winter. Summer. 4 cr. Prerequisite, sophomore standing. A general study of interhuman relations.
- 17. **SOCIAL PROBLEMS.** 1 Q. Winter. Spring. Summer. 5 cr. Open to all students. A general study of social and personal disorganization.
- 25. **DEVELOPMENT OF SOCIAL THOUGHT.** 1 Q. Autumn. 4 cr.

Prerequisite, sophomore standing. The development of social thought from earliest times to the establishment of sociology.

FOR UNDERGRADUATES AND GRADUATES

100. COURTSHIP AND MARRIAGE. 1 Q. Any quarter. 3 cr. Prerequisite, junior standing. A general consideration of factors in courtship and marriage.

116. SOCIAL MOVEMENTS. 1 Q. Spring. 3 cr. Prerequisite, junior standing and course 16. A study of selected reform and other movements with particular reference to their leadership. Offered in 1954-55 and alternate years.

118. SOCIAL SCIENCE METHODS. 1 Q. Autumn. 4 cr. Prerequisite, junior standing and 10 credits in Social Science courses. An introduction to the methods used in studies in the Social Sciences.

119. RURAL SOCIOLOGY. 1 Q. Winter. 4 cr. Offered in 1953-54 and alternate years. Prerequisite, junior standing and either course 16 or 17. The organization and social relationships of rural life; the rural community; problems of rural life. Special emphasis on Montana and the Northwest.

120. POPULATION. 1 Q. Spring. 4 cr. Prerequisite, junior standing and course 16. A quantitative and qualitative analysis of world population; vital statistics and population change, migration, and immigration.

121. URBAN SOCIOLOGY. 1 Q. Winter. 4 cr. Offered in 1954-55 and alternate years. Prerequisite, junior standing and course 16. A study of the rise of urbanism; the ecological setting and demographic trends of cities; the social relationships and organization of city life.

122. CRIMINOLOGY. 1 Q. Spring. 5 cr. Prerequisite, junior standing and either course 16 or 17. A study of the causes, prevention, detection, and correction of crime.

123. REGIONAL SOCIOLOGY. 1 Q. Spring. 4 cr. Summer, 2 or 4 cr. Offered in 1953-54 and alternate years. Prerequisite, junior standing and course 16. A study of the regional concept and method; types of regions; regional planning. Emphasis is laid on the Northwest Region.

126. PRINCIPLES OF SOCIOLOGY. 1 Q. Winter. 3 cr. Prerequisite, junior standing and course 16. An advanced course in the methods, concepts, and data of sociology.

127. SOCIAL CONTROL. 1 Q. Winter. 4 cr. Prerequisite, junior standing and course 16. A study of the institutional and non-institutional processes and methods by which persons and groups are controlled.

128ab. SEMINAR. 2 Q. Winter, spring. 2 cr. each quarter. Students may enter either quarter. Prerequisite, senior standing and 10 credits in sociology. An analysis of current sociological literature and methods.

129. THE FAMILY. 1 Q. Autumn. 4 cr. Prerequisite, junior standing and course 16. A comparative, historical and analytical study of the family.

172. CONTEMPORARY SOCIOLOGICAL THEORY. 1 Q. Winter. 2 cr. Prerequisite, junior standing and course 25. A study of selected European and American writers in social science. Offered in 1954-55 and alternate years.

190. ADVANCED PROBLEMS. Any quarter. 1-2 cr. Prerequisite, senior standing and consent of instructor. May be repeated to a maximum of 6 credits.

FOR GRADUATES

201. GRADUATE RESEARCH. Any quarter. Credit variable. Prerequisite, graduate standing.

ANTHROPOLOGY

FOR UNDERGRADUATES

14. SOCIAL ANTHROPOLOGY. 1 Q. Autumn. Summer. 5 cr. Open to all students. A study of institutions as exemplified in primitive religion, economics, political structures, art, and music.

15. ELEMENTARY ANTHROPOLOGY. 1 Q. Winter. 5 cr. Open to all students. An analysis of the culture concept and of the processes of culture growth and change, with special consideration given to invention, diffusion, and acculturation. Students who completed the former course Sociology 15a may not receive credit for 15.

18. SOCIAL ORGANIZATION OF PRIMITIVE PEOPLES. 1 Q. Spring. 4 cr. Prerequisite, sophomore standing. A study of the social structure of non-literate peoples: family, kinship structure, kin and local groups associations, social classes, and political aggregates.

19. RACE AND MINORITIES. 1 Q. Winter. 3 cr. Prerequisite,

sophomore standing. Problems of assimilation of racial and cultural minorities. Offered in 1953-54 and alternate years.

FOR UNDERGRADUATES AND GRADUATES

138. PREHISTORIC CULTURES. 1 Q. Winter. 3 cr. Prerequisite, junior standing. A survey of prehistoric man and his cultures, up to the dawn of history, in Europe and the Near East. Offered in 1954-55 and alternate years.

139. ARCHAEOLOGY OF MONTANA. 1 Q. Spring. 3 cr. Prerequisite, junior standing and consent of instructor. The origins and distribution of aboriginal cultures in Montana and surrounding regions. Classes meet twice weekly, and students are required to attend a minimum of three field trips in which actual archaeological sites will be excavated, and techniques demonstrated. One credit is allowed for the field trips.

142. CULTURE AND PERSONALITY. 1 Q. Spring. 3 cr. Prerequisite, junior standing. A study of the role of culture in the formation of personality. Offered in 1954-55 and alternate years.

144. ANTHROPOLOGY OF SOUTH AMERICA. 1 Q. Winter. 4 cr. Prerequisite, junior standing. A survey of the cultures of the Indians of South America. Offered in 1953-54 and alternate years.

145. ANTHROPOLOGY OF NORTH AMERICA. 1 Q. Autumn. 4 cr. Prerequisite, junior standing. A survey of the native cultures of North America, north of the Rio Grande.

146. ANTHROPOLOGY OF AFRICA. 1 Q. Spring. 4 cr. Prerequisite, junior standing. A study of the aboriginal cultures of Africa. Offered in 1954-55 and alternate years.

147. ANTHROPOLOGY OF ASIA. 1 Q. Spring. 4 cr. Prerequisite, junior standing. The peoples and cultures of Asia, including India, China, Japan, Siberia, and the Near East. Offered in 1953-54 and alternate years.

171. CULTURE AND THEORY. 1 Q. Winter. 2 cr. Prerequisite, junior standing and Sociology 25. A brief course in the development of theory and method in cultural anthropology to the present, and a consideration of various archaeological, ethnological, and socio-psychological theories in the light of historical anthropology. Offered in 1954-55 and alternate years.

180. ARCHAEOLOGICAL SURVEY. 3-9 cr. Any quarter in which field parties are organized. Prerequisite, junior standing. This course may be repeated to a maximum of 18 credits. A field course in Montana archaeology.

181. FIELD WORK: NORTHWEST ETHNOLOGY. 1-5 cr. Any quarter in which field parties are organized. Prerequisite, junior standing. This course may be repeated to a maximum of 15 credits. A field course in the study of Indian tribes of Montana and related areas.

190. ADVANCED PROBLEMS. Any quarter. 1-2 cr. Prerequisite, senior standing and consent of instructor. May be repeated to a maximum of 6 credits.

FOR GRADUATES

201. RESEARCH. Any quarter. Credit variable. Prerequisite, graduate standing.

SOCIAL WORK

FOR UNDERGRADUATES

30. THE FIELD OF SOCIAL WORK. 1 Q. Winter. 4 cr. Prerequisite, sophomore standing. An introduction to the field of social work and of social work functions. Development of modern social work and the distinctive features of the profession.

FOR UNDERGRADUATES AND GRADUATES

S124. JUVENILE DELINQUENCY. 1 Q. Summer. 5 weeks. 3 cr. Prerequisite, junior standing. Nature and extent of the problem. The role of courts, social agencies, and schools in its prevention and treatment.

130. CASE STUDIES IN SOCIAL WORK. 1 Q. Spring. 4 cr. Prerequisite, senior standing and 12 credits in social work including course 30. A detailed analysis of social work principles, functions, and methods as illustrated by case-record material drawn from a variety of social welfare settings.

132. INTRODUCTION TO THE GROUP PROCESS. 1 Q. Spring. 4 cr. Prerequisite, junior standing. The place of group experience in a democracy. Principles and methods involved in working with groups. Group dynamics.

133. COMMUNITY RELATIONS. 1 Q. Autumn. 4 cr. Prerequisite,

senior standing. The place of community organization in a democracy. Principles and methods of meeting community needs. Inter-group dynamics.

134. FIELD PRACTICE, COMMUNITY SERVICES LABORATORY. 3 Q. Autumn, winter, spring. May be entered any quarter. 2-4 cr. each quarter to a maximum of 10. Prerequisite, senior standing and course 30. Direct experience in local health and welfare agencies as a volunteer. Analysis and evaluation of experience in terms of social work principles and methods. Two-hour discussion, 3-9 hours volunteer service in selected community agencies.

135. CHILD WELFARE SERVICES. 1 Q. Winter. 4 cr. Prerequisite, senior standing. Development, organization, functions and methods of public and voluntary programs designed to meet the special needs of children and their families' foster home and institutional care, adoption services, school social services, youth services, etc.

136. PUBLIC ASSISTANCE. 1 Q. Autumn. 4 cr. Prerequisite, junior standing. Development, organization, functions and methods of governmental programs designed to protect individuals and families against the loss of income due to such hazards as unemployment, illness, disability, old age and death.

170abc. RECREATIONAL LEADERSHIP. 3 Q. Autumn, winter, spring. 3 cr. each quarter. Prerequisite, junior standing. Students may enter any quarter. (a) Philosophy of recreation, theory and practice of group leadership and program media skills in relation to various age groups. (b) An investigation of the forces, resources and interests required to provide a total community recreation program. (c) Philosophy of camping, theory and practice of group leadership and recreational skills in relation to organized camping. Administration under joint supervision with the Department of Health and Physical Education. Students may not receive credit for this course and the identical course H. & P.E. 170abc.

WILDLIFE TECHNOLOGY

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra and geometry. It is also recommended that the high school preparation include advanced algebra, solid geometry, and trigonometry.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN WILDLIFE TECHNOLOGY. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Science degree with a major in Wildlife Technology.

FRESHMAN YEAR: Botany 11ab, 12; Chemistry 11abc or 13ab; English 11ab; Mathematics 10 or 13; 0-5 group requirement credits; plus required Health and Physical Education and Military or Air Science.

SOPHOMORE YEAR: Zoology 10, 24, 23, 15; Physics 11a, 25 or 20abc; 8-15 group requirement credits; plus required Health and Physical Education and Military or Air Science.

JUNIOR YEAR: Zoology 109 or 110; Forestry 120, 12, 20a; Botany 22 and 160; Mathematics 25; Zoology 107 or 108; 5 elective credits.

SENIOR YEAR: Geology 11a; Zoology 109 or 110, 107 or 108; Botany 51; Bacteriology 19 or 103; 15-25 elective credits.

Suggested general electives: Bacteriology 19 or 103; Biological Science 150ab; Botany 126; Chemistry 13c, 19, 103; Forestry 25, 138; Geology 11b; Modern Languages 11ab, 13ab, 15; Zoology 102, 105, 107, 108, 109, 110, 117, 125, 128, 129, 131, 132.

Students primarily interested in Aquatic Biology should elect courses from the following list: Botany S163, S174; Chemistry 17; Zoology S161, S166.

Students primarily interested in birds and big game should elect courses from the following list: Botany 164; Forestry 140abc; General 150b.

ZOOLOGY

Professors Ludvig G. Browman (Chairman), Gordon B. Castle, Philip L. Wright; Associate Professors Royal B. Brunson, George F. Weisel; Assistant Professor John J. Craighead.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN ZOOLOGY. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelor of Arts degree with a major in Zoology: 54 credits in Zoology including Zoology 10, 15, 23, 102, 111ab, 125, 126, 128, 3 credits of 129, and 140ab.

The following must also be completed: Botany 11ab, 12 or S61 or 161b; Chemistry 11abc or 13ab, and 13c, or 19; and Physics 11abc or 20abc.

Students who contemplate graduate work in Zoology should elect during their junior or senior years Bacteriology 19, 103, and Zoology 105. It would be wise for prospective graduate students to secure a reading knowledge of both French and German if possible.

A reading knowledge of a modern foreign language at the level of attainment expected of a student who has passed four quarters in a language as demonstrated by a suitable achievement test, or 23 to 25 credits in French, German or other language approved by the department is required.

Students who plan to secure a certificate to teach should consult the Dean of the School of Education or the Registrar.

Senior examinations are given only to candidates for honors.

FOR UNDERGRADUATES

10. GENERAL ZOOLOGY. 1 Q. Autumn. Summer. 5 cr. Open to all students. Certain basic biological principles as exemplified by the study of the characteristics of animal protoplasm and selected invertebrates, and a vertebrate form.

15. FIELD ZOOLOGY. 1 Q. Spring. 3 cr. Prerequisite, Zoology 10. A field and laboratory course in the collection, identification and preservation of animals.

23. COMPARATIVE VERTEBRATE ZOOLOGY. 1 Q. Spring. 5 cr. Prerequisite, Zoology 10 or equivalent and sophomore standing. The comparative anatomy, morphology, development and phylogeny of the vertebrates.

24. HUMAN PHYSIOLOGY. 1 Q. Winter. Summer. 5 cr. Prerequisite, sophomore standing. An overview of the normal physiology of blood, circulation, respiration, digestion, excretion, irritability, locomotion, coordination and reproduction.

FOR UNDERGRADUATES AND GRADUATES

101. GENERAL COMPARATIVE EMBRYOLOGY. 1 Q. Autumn. 5 cr. Prerequisite, Zoology 111ab and junior standing. The early stages of development of the invertebrates and vertebrates, including meiosis, fertilization, cleavage, formation of the germ layers and early organogenesis. Given in 1954-55 and alternate years.

102. VERTEBRATE EMBRYOLOGY. 1 Q. Winter. 5 cr. Prerequisite, Zoology 23 and junior standing. The early stages of development of the vertebrates including organogenesis, with emphasis on birds (chick) and mammals (pig).

105. HISTOLOGY AND MICROTECHNIQUE. 1 Q. Winter. 5 cr. Prerequisite, Zoology 23, junior standing and consent of the instructor. Basic tissues are studied, and a limited amount of work is done on organology. Microtechnique with emphasis on the paraffin method.

107. AQUATIC BIOLOGY. 1 Q. Spring. 5 cr. Prerequisite, Zoology 15, Botany 12, and junior standing. A survey of the biota of fresh water with emphasis upon the invertebrate fauna, with some consideration of their relationship to the food chains and habitats of aquatic vertebrates. Collection, ecological relations, identification and taxonomic position of aquatic organisms below vertebrates.

108. ORNITHOLOGY. 1 Q. Spring. 5 cr. Prerequisite, Zoology 23 and junior standing. The structure, classification and life histories of birds. Weekly field trips. Students are expected to provide themselves with binocular field glasses.

109. MAMMALOLOGY. 1 Q. Winter, 1954. Autumn, 1955. 5 cr. Prerequisites, Zoology 23 and junior standing. The classification identification and life histories of mammals. Field trips are taken on which mammals are collected and studied.

110. ICHTHYOLOGY. 1 Q. Autumn. 5 cr. Prerequisite, Zoology 23, junior standing and consent of the instructor. The systematics and distribution of the more important orders of fish, their collection and identification. Certain fundamentals of the physiology of fish are considered. The recognition and life histories of local fish.

111ab. INVERTEBRATE ZOOLOGY. 2 Q. Autumn, winter. 5 cr. Prerequisite, three quarters of college zoology and junior standing. The anatomy, embryology, and phylogeny of the invertebrate animals.

113. FOREST ENTOMOLOGY. 1 Q. Spring. 3 cr. Prerequisite, Zoology 10 or equivalent and junior standing. A study of the major groups of forest insects, their effects on forests and forest products, their life histories, distribution, ecology and control.

125. GENETICS. 1 Q. Autumn. 5 cr. Prerequisite, Zoology 23 or Botany 22, and junior standing. The mechanisms of heredity, involving consideration of Mendelian inheritance, linkage systems, chromosomal aberrations, extra-chromosomal inheritance, and their relationship to structure and function.

126. EVOLUTION. 1 Q. Winter. 3 cr. Prerequisite, Botany 10ab or 11ab and 12, and Zoology 10 and 15 and junior standing. The theories of evolution from the historical point of view; the nature of evolutionary processes, the evidence for evolution, and the factors of evolution. Not a laboratory course. Students may not receive credit for this course and the identical course Botany 126.

128. ANIMAL ECOLOGY. 1 Q. Spring. 5 cr. Prerequisite, Zoology 15, Botany 12 or equivalent, junior standing and consent of the instructor. Zoology 107 or 111ab is recommended. A study of the relationships between animals and their environment with special emphasis on the invertebrates. (Field trips are taken every Saturday.)

129. BIOLOGICAL LITERATURE. 3 Q. Autumn. Winter. Spring. 1 cr. each quarter. Prerequisites, senior standing and 20 credits in Botany or Zoology and consent of the chairman of the Department of Botany or Zoology. Reviews of recent literature as a survey of the trend of investigation and experimentation in biological fields. Reports of special studies.

131. ADVANCED VERTEBRATE ZOOLOGY. 1 Q. Any quarter. 1-5 cr. Prerequisite, 25 credits in Zoology including Zoology 23, senior standing and consent of instructor. (I) Morphology and Taxonomy; (II) Physiology; (III) Ecology. Primarily a problems type course, involving semi-independent work. By variation of content as indicated, the course may be repeated during succeeding quarters.

132. ADVANCED INVERTEBRATE ZOOLOGY. 1 Q. Any quarter. 1-5 cr. Prerequisite, 25 credits in Zoology including Zoology 107 or 111ab, senior standing and consent of the instructor. (I) Morphology and Taxonomy; (II) Physiology; (III) Ecology. Primarily a problems course involving semi-independent work. By variation of content as indicated, the course may be repeated during succeeding quarters.

133. VERTEBRATE ENDOCRINOLOGY. 1 Q. Spring. 3 cr. Prerequisite, Zoology 23, 102, junior standing and consent of the instructor. The microscopic anatomy and the normal physiology of the major glands of internal secretion of vertebrates. Correlative problems employing surgical and experimental techniques may be undertaken as part of the laboratory work.

140ab. VERTEBRATE PHYSIOLOGY. 2 Q. Autumn, winter. 5 cr. each quarter. Prerequisites, Zoology 23 or equivalent, three quarters of college chemistry, junior standing and consent of the instructor. (a) General physiological properties of protoplasm; blood, body fluids, and circulation; respiration and excretion. (b) Digestion, nutrition and intermediary metabolism; excitation, conduction, responses, senses; endocrines and reproduction.

165. ENTOMOLOGY. 1 Q. Autumn. 5 cr. Prerequisite, Zoology 10, 15 and junior standing. A study of insects, including their structure, classification, life histories, distribution and ecology.

COURSES OFFERED AT THE BIOLOGICAL STATION

S108. ORNITHOLOGY. 1 Q. Summer. 3 cr. Prerequisite, one laboratory course in Vertebrate Zoology and junior standing.

S109. MAMMALOLOGY. 1 Q. Summer. 6 cr. Prerequisite, Comparative Vertebrate Zoology and junior standing.

S110. ICHTHYOLOGY. 1 Q. Summer. 3 cr. Prerequisite, Comparative Vertebrate Anatomy and junior standing.

S161. LIMNOLOGY. 1 Q. Summer. 6 cr. Prerequisite, General Zoology and one college course in Chemistry and junior standing.

S164. NATURAL HISTORY OF INVERTEBRATES. 1 Q. Summer. 3 cr. Prerequisite, two quarters of college Zoology and junior standing.

S165. ENTOMOLOGY. 1 Q. Summer. 6 cr. Prerequisite, two laboratory courses in Zoology including Invertebrate Zoology and junior standing.

S166. AQUATIC INSECTS. 1 Q. Summer. 3 cr. Prerequisite, two laboratory courses in Zoology including Invertebrate Zoology and junior standing, and consent of instructor.

S199. SPECIAL PROBLEMS IN ZOOLOGY. 1 Q. Summer. 2-5 cr. Prerequisite, adequate background courses in the subject, senior standing and consent of the instructor.

S200. ADVANCED ZOOLOGICAL PROBLEMS. 1 Q. Summer. Credit variable. Prerequisite, graduate standing and consent of the instructor.

S261. LIMNOLOGICAL METHODS. 1 Q. Summer. 3 cr. Prerequisite, graduate standing, Limnology and at least one year of college chemistry.

FOR GRADUATES

200. ADVANCED ZOOLOGICAL PROBLEMS. 1-5 Q. Autumn. Winter. Spring. Credit variable. Opportunity is given graduate students with sufficient preparation and ability to pursue original investigations.

MONTANA STATE UNIVERSITY
Missoula

SUMMARY OF REGISTRATION, 1952-53

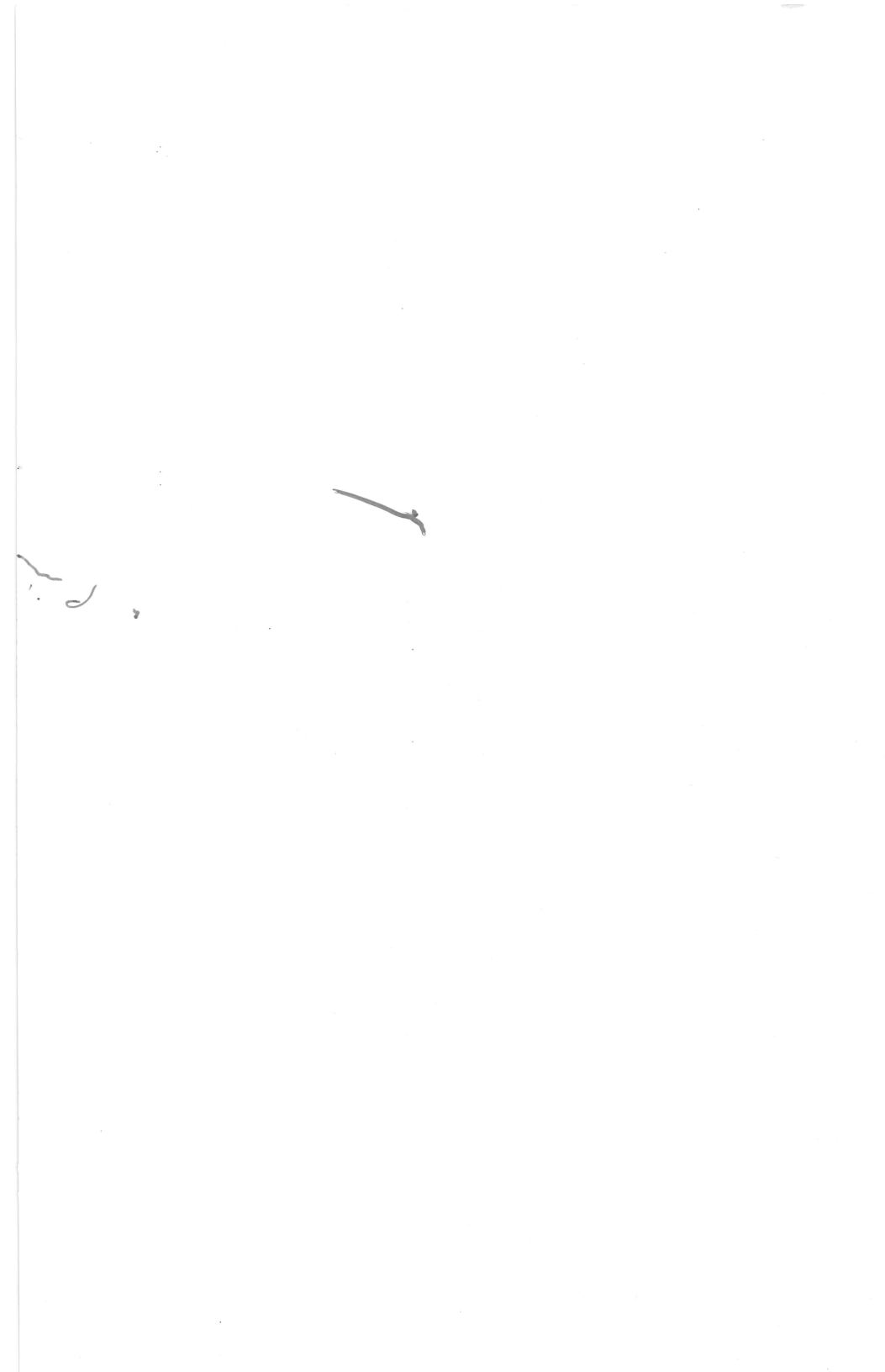
COLLEGES, SCHOOL OR COURSE	Graduates			Seniors			Juniors			Sophomores			Freshmen			Specials			Totals			
	Total	Women	Men	Total	Women	Men	Total	Women	Men	Total	Women	Men	Total	Women	Men	Total	Women	Men	Total	Women	Men	

Arts and Sciences	73	18	91	137	81	218	104	84	188	200	146	346	321	199	520	1	---	1	836	528	1364	
Business Administration	6	1	7	123	19	142	95	25	120	---	---	---	---	---	---	---	---	---	224	45	269	
Education	44	15	59	41	16	57	24	13	37	---	---	---	---	---	---	---	---	---	109	44	153	
Forestry	17	---	17	44	---	44	47	---	47	38	---	38	39	2	41	---	---	---	185	2	187	
Journalism	3	1	4	14	9	23	14	6	20	19	11	30	28	13	41	---	---	---	78	40	118	
Law	30	---	30	48	2	50	14	---	14	---	---	---	---	---	---	---	---	---	92	2	94	
Music	3	4	7	11	10	21	14	8	22	11	14	25	17	21	38	---	---	---	56	57	113	
Pharmacy	8	1	9	16	5	21	12	1	13	15	---	15	10	3	13	---	---	---	61	10	71	
TOTALS	184	40	224	434	142	576	324	137	461	283	171	454	415	238	653	1	---	1	1641	728	2369	
Unclassified	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4	19	23	
TOTALS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1645	747	2392	
Summer Quarter, 1952	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	519	327	846
TOTALS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2164	1074	3238
Less duplicates	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	136	72	208
Total Enrollment of Residence Students	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2028	1002	3030
Correspondence and Extension Students	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	384	520	904
TOTALS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2412	1522	3934
Less duplicates	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	109	85	194
TOTAL FOR YEAR 1952-53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2303	1437	3740

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CONDENSED CALENDAR
THE UNIVERSITY OF MONTANA
1953-55

MONTANA STATE UNIVERSITY, Missoula

Autumn Quarter opens September 20, 1953
Winter Quarter opens January 4, 1954
Spring Quarter opens March 22, 1954
Summer Quarter opens June 14, 1954
Autumn Quarter opens September 19, 1954
Winter Quarter opens January 3, 1955
Spring Quarter opens March 21, 1955

MONTANA STATE COLLEGE, Bozeman

Autumn Quarter opens September 21, 1953
Winter Quarter opens January 4, 1954
Spring Quarter opens March 29, 1954
Summer Quarter opens June 14, 1954
Autumn Quarter opens September 20, 1954
Winter Quarter opens January 3, 1955
Spring Quarter opens March 28, 1955

MONTANA SCHOOL OF MINES, Butte

First Semester opens September 28, 1953
Second Semester opens February 8, 1954
Summer Field Work opens June 14, 1954
First Semester opens September 27, 1954
Second Semester opens February 7, 1955

WESTERN MONTANA COLLEGE OF EDUCATION, Dillon

Autumn Quarter opens September 21, 1953
Winter Quarter opens January 4, 1954
Spring Quarter opens March 22, 1954
Summer Quarter opens June 14, 1954
Autumn Quarter opens September 20, 1954
Winter Quarter opens January 3, 1955
Spring Quarter opens March 21, 1955

EASTERN MONTANA COLLEGE OF EDUCATION, Billings

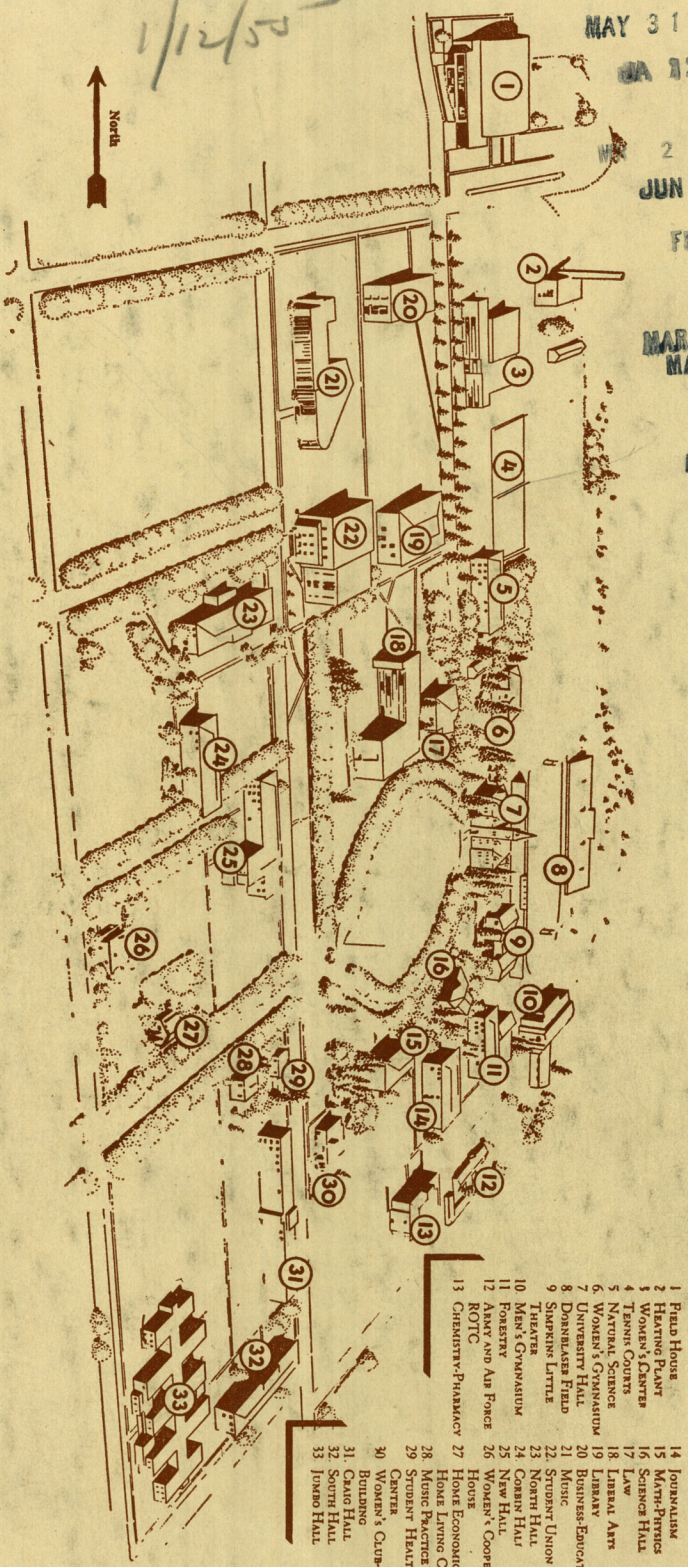
Autumn Quarter opens September 21, 1953
Winter Quarter opens January 4, 1954
Spring Quarter opens March 22, 1954
Summer Quarter opens June 7, 1954
Autumn Quarter opens September 20, 1954
Winter Quarter opens January 3, 1955
Spring Quarter opens March 21, 1955

NORTHERN MONTANA COLLEGE, Havre

Autumn Quarter opens September 21, 1953
Winter Quarter opens January 4, 1954
Spring Quarter opens March 22, 1954
Summer Quarter opens June 14, 1954
Autumn Quarter opens September 20, 1954
Winter Quarter opens January 3, 1955
Spring Quarter opens March 21, 1955

The Montana State University Campus

MAY 31 '55 4: PM
 JUN 12 '54 11: AM
 JUN 22 '54 3: PM
 FEB 28 '56 5: P
 MAR 1 '55 9: P
 MAR 1 '55 4: PM
 MAR 26 '55
 AUG '55 9



- | | | | |
|----|---------------------------|----|---------------------------|
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| 2 | HEATING PLANT | 15 | MATH-PHYSICS |
| 3 | WOMEN'S CENTER | 16 | SCIENCE HALL |
| 4 | TENNIS COURTS | 17 | LAW |
| 5 | NATURAL SCIENCE | 18 | LIBERAL ARTS |
| 6 | WOMEN'S GYMNASIUM | 19 | LIBRARY |
| 7 | UNIVERSITY HALL | 20 | BUSINESS EDUCATION |
| 8 | DORNBELASER FIELD | 21 | MUSIC |
| 9 | SIMPSON'S LITTLE THEATER | 22 | STUDENT UNION |
| 10 | MEN'S GYMNASIUM | 23 | NORTH HALL |
| 11 | FORESTRY | 24 | COBBIN HALL |
| 12 | ARMY AND AIR FORCE ROTC | 25 | NEW HALL |
| 13 | CHEMISTRY-PHARMACY | 26 | WOMEN'S COOPERATIVE HOUSE |
| 27 | HOME ECONOMICS | 31 | CARD HALL |
| 28 | MUSIC PRACTICE | 32 | SOUTH HALL |
| 29 | STUDENT HEALTH CENTER | 33 | JORDAN HALL |
| 30 | WOMEN'S CLUB-ART BUILDING | | |

JUL 26 '55 12: M

JUL 26 '55 4: PM

1/12/50