1964-1965 Course Catalog

University of Montana--Missoula. Office of the Registrar
Old Main Hall, first building to be constructed on the MSU campus, is now surrounded by a physical plant of approximately 50 buildings including classrooms, laboratories, shops, offices, dormitories and athletic facilities. Mount Sentinel, shown in the background, is a part of the campus.

—Photo by Ernst Peterson
Tree-shaded walks and lawns are features of an uncommonly attractive campus. The building is home of the Art and Drama Departments, which are a portion of the MSU School of Fine Arts. The University Theater and the Masquer Experimental Theater are located here.
The Liberal Arts building houses the College of Arts and Sciences, the School of Education and the University's new computer center. In recent years, the capacity of the building has been doubled to care for growing registration.
Close at hand are the magnificent timberlands and mountains of western Montana. Across a field of lupine, Trapper Peak surges upward in the Bitterroot range, and was a landmark passed by Lewis and Clark on their way to the Pacific. Hundreds of scenic wonders such as this are within an hour or two of driving from the campus.

—Photo by Ernst Peterson
THE UNIVERSITY OF MONTANA
Alfred J. Dubbe, Executive Secretary

The University of Montana is a public research university in Missoula, Montana. It was established in 1893 and is the flagship institution of the Montana University System. The university offers a wide range of undergraduate and graduate programs across various colleges and schools. The University comprises the following institutions, schools, and departments:

MONTANA STATE BOARD OF EDUCATION
Ex-officio Regents of the University of Montana

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MAURICE E. RICHARD, 1972 Ex-Officio

MONTANA STATE UNIVERSITY, MISSOULA
Established February 17, 1893, and consisting of
The College of Arts and Sciences
The School of Law
The School of Pharmacy
The School of Forestry
The School of Journalism
The School of Business
The School of Education
The School of Fine Arts
The Summer Session
The Graduate School

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

The Biological Station (Flathead)
The Forest and Conservation Experiment Station
The Forest Nursery
The Lubrecht Experimental Station
The Division of Extension and Public Service
The Montana Cooperative Wildlife Research Unit
The Montana Cooperative Forest Service
The University Press

Robert Johns, President

MONTANA STATE COLLEGE, BOZEMAN
Established February 16, 1893, and consisting of
The Division of Agriculture
The Division of Education
The Division of Engineering
The Division of Letters and Science
The Division of Professional Schools
School of Architecture
School of Art
School of Home Economics
School of Nursing
The Agricultural Experiment Station
The Montana Grain Inspection Laboratory
The Montana Wool Laboratory
The Central Montana Branch Station (Moccasin)

The University comprises the following institutions, schools, and departments:
The Eastern Montana Branch Station (Sidney)
The Huntley Branch Station (Huntley)
The Northern Montana Branch Station ( Havre)
The Northwestern Branch Station (Creston)
The U. S. Range Station (Miles City)
The Western Montana Branch Station (Corvallis)
The Engineering Experiment Station
The Agricultural Extension Service
The Public Service Division
The Summer Quarter
The Graduate Division

Leon H. Johnson, President

MONTANA SCHOOL OF MINES, BUTTE
Established February 17, 1893, and consisting of
The Course in Mining Engineering
The Course in Metallurgical Engineering
The Course in Mineral Dressing Engineering

The University comprises the following institutions, schools, and departments:
The Course in Geological Engineering
The Course in Petroleum Engineering
The Graduate School
Summer Field Courses

E. G. Koch, President

MONTANA STATE UNIVERSITY
Missoula

Spring Quarter opens March 20, 1964
Summer Quarter opens June 16, 1964
Autumn Quarter opens September 21, 1964
Winter Quarter opens January 4, 1965
Spring Quarter opens March 29, 1965
Summer Quarter opens June 14, 1965
Autumn Quarter opens September 20, 1965
Winter Quarter opens January 3, 1966
Spring Quarter opens March 28, 1966
Summer Quarter opens June 13, 1966

MONTANA STATE COLLEGE
Bozeman

Spring Quarter opens March 20, 1964
Summer Quarter opens June 16, 1964
Autumn Quarter opens September 21, 1964
Winter Quarter opens January 4, 1965
Spring Quarter opens March 29, 1965
Summer Quarter opens June 15, 1965
Autumn Quarter opens September 20, 1965
Winter Quarter opens January 3, 1966
Spring Quarter opens March 28, 1966
Summer Quarter opens June 14, 1966

MONTANA SCHOOL OF MINES
Butte

First Semester opens September 28, 1964
Second Semester opens February 8, 1965
Summer Field Work opens June 14, 1965
First Semester opens February 13, 1966
Second Semester opens February 7, 1966
Summer Field Work opens June 13, 1966
First Semester opens September 26, 1966

WESTERN MONTANA COLLEGE OF EDUCATION
Dillon

Spring Quarter opens March 20, 1964
Summer Quarter opens June 15, 1964
Autumn Quarter opens September 21, 1964
Winter Quarter opens January 4, 1965
Spring Quarter opens March 29, 1965
Summer Quarter opens June 15, 1965
Autumn Quarter opens September 20, 1965
Winter Quarter opens January 3, 1966
Spring Quarter opens March 28, 1966
Summer Quarter opens June 13, 1966

EASTERN MONTANA COLLEGE OF EDUCATION
Billings

Spring Quarter opens March 20, 1964
Summer Quarter opens June 15, 1964
Autumn Quarter opens September 21, 1964
Winter Quarter opens January 4, 1965
Spring Quarter opens March 29, 1965
Summer Quarter opens June 15, 1965
Autumn Quarter opens September 20, 1965
Winter Quarter opens January 3, 1966
Spring Quarter opens March 28, 1966
Summer Quarter opens June 15, 1966

NORTHERN MONTANA COLLEGE
Havre

Spring Quarter opens March 20, 1964
Summer Quarter opens June 17, 1964
Autumn Quarter opens September 21, 1964
Winter Quarter opens January 4, 1965
Spring Quarter opens March 29, 1965
Summer Quarter opens June 16, 1965
Autumn Quarter opens September 20, 1965
Winter Quarter opens January 3, 1966
Spring Quarter opens March 28, 1966
Summer Quarter opens June 15, 1966

CONDELED CALENDAR
The University of Montana

Winter Quarter, 1964 through Summer, 1966

MONTANA STATE UNIVERSITY
Missoula

Spring Quarter opens March 20, 1964
Summer Quarter opens June 16, 1964
Autumn Quarter opens September 21, 1964
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MONTANA STATE COLLEGE
Bozeman

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Butte

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Summer Field Work opens June 14, 1965
First Semester opens February 13, 1966
Second Semester opens February 7, 1966
Summer Field Work opens June 13, 1966
First Semester opens September 26, 1966

WESTERN MONTANA COLLEGE OF EDUCATION
Dillon

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NORTHERN MONTANA COLLEGE
Havre

Spring Quarter opens March 20, 1964
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Spring Quarter opens March 29, 1965
Summer Quarter opens June 16, 1965
Autumn Quarter opens September 20, 1965
Winter Quarter opens January 3, 1966
Spring Quarter opens March 28, 1966
Summer Quarter opens June 15, 1966
POURPOSE OF CATALOG

The Catalog of Montana State University is published to provide current information to be used by prospective students, their parents, their teachers, and advisers; by college students, faculty members, and administrative officers; by registrars and accrediting agencies. It also provides a historical record.

The Catalog is planned to furnish the prospective student with information needed for selecting a school and making long-range educational plans leading to a chosen career. Students without well-defined objectives may attend for a year or two as "General" majors, taking courses that meet general requirements for graduation and that provide general education as a foundation for more specific work selected not later than the end of the sophomore year.

USE OF CATALOG

1. Students should study with care those sections on REGISTRATION AND GENERAL REGULATIONS and on GRADUATION REQUIREMENTS. This information should be reviewed before registration periods.

2. When checking on particular courses, be sure to review the EXPLANATION OF SYMBOLS (See Index).

3. Plan your program at least a year in advance and double-check it against the printed schedules of classes since there are often deviations from the listings in the Catalog.

4. If you have selected a major, study carefully the specific additional requirements for graduation listed under your chosen field. You are responsible for planning your program.

5. When in doubt as to meanings or interpretation of listed information, consult your adviser or department chairman; they are available if you need assistance.

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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.
LOCAL EXECUTIVE BOARD

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Mrs. Thomas E. Mulhoney, Missoula
Alex M. Stepanoff, Missoula

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Friedrich, William, B.A., Catholic University of America, Graduate Assistant
O'Dell, Johns S., B.A., Montana State University, Graduate Assistant
Pembie, Richard H., B.A., Simpson College, Graduate Assistant
Tree, Wayne B. A., Montana State University, Graduate Assistant

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English

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Harrar, Phyllis L. (Mrs.), M.A., Montana State University, Instructor (Winter Quarter)
4—OFFICIAL DIRECTORY

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MARTIN, RUBY (Mrs.), M.A., Montana State University, Instructor
MORBASCH 

Health, Physical Education and Athletics

SCHWAB, WALTER C., Ph. D., State University of Iowa, Director and Professor
ADAMS, HARRY E., M.S., University of Washington, Professor; Head Track Coach
CHIN, ERIC N., B.A., Montana State University, Assistant Professor
CRUZ, GEORGE W., M.S., Indiana University, Assistant Professor
DAMBERG, GEORGE H., B.A., Montana State University, Professor
DAVISON, HUGH, B.S., University of Colorado, Instructor; Assistant Football and Basketball Coach; promoted to Head Football Coach February 1, 1964
DECHLER, CHARLES F., M.A., Columbia University, Professor
HORTON, DONNA, B.S., University of Utah, Instructor
JENKINS, RAY, M.S., University of Colorado, Assistant Professor; Head Football Coach
KRAHTHORPE, DAVID, M.Ed., Utah State University, Instructor; Assistant Football Coach (beginning February 1, 1964)
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WHITEHEAD, CLINT C., M.S., Brigham Young University, Instructor; Assistant Football Coach; Head Wrestling Coach (beginning February 1, 1964)
WILSON, VINCENT M.A., New York University, Associate Professor
FLYNN, RUSSELL T., B.S., MacMurray College, Graduate Assistant
LEPER, TERRY L., B.A., Coe College, Graduate Assistant
LIVEWEL, HARLEY W., B.S., Montana State University, Graduate Assistant
MOLLER, DENNIS O., B.S., South Dakota State College, Graduate Assistant
POLO, JOHN F., B.S., University of Oregon, Graduate Assistant
WHITEHEAD, DEANNA, B.S., Texas Woman's University, Assistant

Geography

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FIELD, CHRIS, M.A., University of California at Los Angeles, Instructor
HANSEN, AXEL E., M.S., University of Wisconsin, Instructor

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HOWER, JOHN J., Ph.D., Washington University (St. Louis), Associate Professor
SILVERMAN, ARNOLD J., Ph.D., Columbia University, Associate Professor
WEHRENBERG, JOHN P., Ph.D., University of Illinois, Associate Professor
WEIDMANN, ROBERT M., Ph.D., University of California, Associate Professor
WINTON, DONALD II, Ph.D., University of Texas, Assistant Professor
BRENNER, ROBERT L., B.S., City College at City University of New York, Graduate Assistant

History

WEN, MELVIN C., Ph.D., State University of Iowa, Professor and Chairman
BEATTY, HUBERT I., Ph.D., Stanford University, Visiting Assistant Professor
BENNETT, EDWARD E., Ph.D., University of Wisconsin, Professor Emeritus
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BENTON, SYLVIA C. (Mrs.), B.A., Montana State University, Graduate Assistant
HOOYTOO, BURTON A., B.A., Montana State University, Graduate Assistant
KAMMERZELL, LINDA J., B.A., Montana State University, Graduate Assistant

Psychology

ATKINSON, E. A., M.A., Montana State University, Professor and Acting Chairman (deceased January 16, 1964)
GRIFFITHS, WILLIAM J., Jr., Ph.D., University of Cincinnati, Professor and Chairman (deceased October 26, 1963)
Ammon, W. B., Ph.D., State University of Iowa, Professor
CLOW, MARINE, Ph.D., Stanford University, Professor; Associate Dean of Students
DUMAS, FRANK M., Ph.D., University of Texas, Professor (on leave 1965-66)
MILLER, ARNOLD, Ph.D., Clark University, Assistant Professor
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SAPPENFIELD, BERT R., Ph.D., Brooklyn College, Graduate Assistant (Winter Quarter)
 COLLINS, DONALD, B.A., Western Washington State College, Graduate Assistant
CuNNING, CHARLES, B.A., Ohio State University, Assistant
Davies, Susan (Mrs.), B.A., Montana State University, Assistant (Spring Quarter)
Fuchs, James, B.A., Montana State University, Assistant
KAPLAN, BERTON B., B.S., Brooklyn College, Graduate Assistant (Winter and Spring Quarters)
KEMP, ELEANOR E., B.A., Ashland College, Assistant
LAWRENCE, DONALD, Graduate Assistant (Autumn and Winter Quarters)
McCARTY, KEITH, B.S., Westminster College, Graduate Assistant
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Van NUTS, DAVID, B.A., University of Pennsylvania, Graduate Assistant

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Velde, ROBERT L., Lieutenant Colonel, USAF, M.A., University of Colorado, Professor and Chairman
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Lau, HERBERT a. (T/Sgt.), Assistant
MAAS, ALBERT H. (T/Sgt.), Assistant
WALDEN, EDWARD (S/Sgt.), Assistant

Military Science (Army)

Moucha, M. F., Colonel, U.S. Army, B.S., U.S. Military Academy, Professor and Chairman
Cannon, MAX E., Major, U.S. Army, Assistant Professor
Dankers, WILLIAM H., Captain, U.S. Army, B.S., Montana State University, Assistant Professor
MacDonald, Angus, Captain, U.S. Army, B.S., Texas A. & M. College, Assistant Professor
Petersen, ALFRED L., Captain, U.S. Army, B.S., Wagner College, Assistant Professor
Stone, HARDY R., Captain, U.S. Army, B.S., Mississippi State University, Assistant Professor
Allen, charles g. (S/Sgt.), Assistant

French, Wallace d. (S/Sgt.), Assistant
Seuritz, Duane E. (S/Sgt.), Assistant
Simpson, Loren E. (M/Sgt.), Assistant
Zackary, Cecil L. (S/Sgt.), Assistant

Sociology, Anthropology, and Social Welfare

Browner, Gordon, Ph.D., University of North Carolina, Professor and Chairman
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Duesbery, Venne, Ph.D., University of Stockholm, Visiting Associate Professor
DuVERY, Robert J., Ph.D., University of Missouri, Associate Professor
Evans, arts W., Ph.D., University of Texas, Assistant Professor; Administrative Assistant to Dean, College of Arts and Sciences, and to Director of Summer Session
Gold, Raymond L., Ph.D., University of Chicago, Associate Professor (on leave 1965-66)
Heinrich, Albert C., M.Ed., University of Alaska, Assistant Professor (on leave 1965-66)
Malouf, CARLing l., Ph.D., Columbia University, Associate Professor
Tascher, Harold, Ph.D., University of Illinois, Professor
Taylor, Dee C., Ph.D., University of Michigan, Associate Professor
Bolin, Twila K., B.A., Montana State University, Assistant
Boring, William T., Assistant
CarMichael, Glenn A., B.A., Montana State University, Graduate Assistant
Dreessen, Jon J., B.A., Eastern Washington State College, Graduate Assistant
Haldor, Larry J., B.A., Idaho State University, Graduate Assistant
HARDY, Marielle G. (Mrs.), B.A., Montana State University, Graduate Assistant (Autumn Quarter), Assistant (Winter and Spring Quarters)
Ross, June A. (Mrs.), B.S., University of Oregon, Graduate Assistant
Zuken, Edwin F., B.A., Yankton College, Assistant

Speech

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Creswell, CONOR R., M.S., University of Wisconsin, Instructor in Speech Pathology and Audiology
Hansen, BERT, M.A., University of Washington, Professor
McGINNIS, RALPH Y., Ph.D., University of Denver, Professor
McGehee, Jesse B., M.A., University of Washington, Assistant Professor of Speech Pathology and Audiology
Owen, James, M.A., University of Denver, Instructor
Parker, Charles D., Ph.D., State University of Iowa, Associate Professor of Speech Pathology and Audiology; Director, Speech and Hearing Clinic
Witt, Daniel M., M.A., University of Denver, Instructor
French, Leonard M., B.A., Montana State University, Graduate Assistant
Garrett, Roger L., B.A., Montana State University, Graduate Assistant
Mills, John H., B.A., Montana State University, Graduate Assistant
Peterson, Duane L., B.S., Eastern Montana College of Education, Assistant
Skones, Orville, Graduate Assistant
White, William p., B.A., Montana State University, Graduate Assistant

Zoology

Wright, Philip L., Ph.D., University of Wisconsin, Professor and Chairman
Bailey, Edward d., Ph.D., Pennsylvania State University, Visiting Instructor
Bartelmez, George W., Ph.D., University of Chicago, Guest Investigator (Courtesy)
Brown, Ludwig G., Ph.D., University of Chicago, Professor
BRUNSON, ROYAL B., Ph.D., University of Michigan, Professor
CRAIGHEAD, JOHN J., Ph.D., University of Michigan, Professor (also Forestry); Leader, Montana Cooperative Wildlife Research Unit
HOFFMANN, ROBERT S., Ph.D., University of California, Associate Professor (on leave 1963-64)
PEIFFER, E. W., Ph.D., University of California, Associate Professor
PHILIP, CORNELIUS B., Ph.D., University of Minnesota; Sc.D. (hon.), University of Nebraska, Lecturer (Courtesy)
ROWAN, WILLIAM B., Ph.D., Cornell University, Associate Professor
SCHMIDT, GERALD D., M.S., Colorado State University, Instructor
WEISE, GEORGE F., Ph.D., University of California at Los Angeles, Professor
WILSON, GRANT L., Ph.D., University of Maryland, Assistant Professor
JOHNSON, RICHARD E., B.S., University of California, Graduate Assistant
MARKLE, PATRICIA A., B.A., Humboldt State College, Graduate Assistant
MEAD, RODNEY A., M.A., University of California at Davis, Graduate Assistant
PLAKKE, RONALD B., Colorado State College, Graduate Assistant (Autumn Quarter)
SHMITT, RUPERT M.S., Oregon State University, Graduate Assistant
SULLIVAN, JOHN O., M.S., Utah State University, Graduate Assistant
VERBEKE, NICO ALAS A., B.S., University of British Columbia, Graduate Assistant

SCHOOL OF BUSINESS ADMINISTRATION
BLOMGRAND, PAUL E., B.B.A., Indiana University, Dean and Professor; Director, Bureau of Business and Economic Research
BARTH, GLENN R., M.B.A., University of Minnesota, Assistant Professor
CURRAGE, KENNETH W., M.B.A., University of Washington, C.P.A. (Wash.), Assistant Professor
DOEBIS, JACK R., B.A., Montana State University, C.P.A. (Mont.), Lecturer (part-time)
EMBLEN, DONALD J., B.A., Columbia University, C.P.A. (Mont.), Professor
ERION, GENE L., Ph.D., University of Wisconsin, Associate Professor
HARING, ROBERT C., Ph.D., Indiana University, Assistant Professor
HELBING, ALBERT A., Ph.D., Johns Hopkins University, Professor
HENNINGSEN, FREDERICK A., M.A., Montana State University, C.P.A. (Mont.), Assistant Professor
KEMPER, JACOB J., Ph.D., Ohio State University, C.P.A. (Mont.), Professor (on leave 1963-64)
LUNE, ROBERT C., M.A., Harvard University, Professor Emeritus
MCCARTY, FRANK P., B.S., University of Colorado, C.P.A. (Mont.), Lecturer (part-time)
MARTINSING, ALVHELE, M.Ed., Montana State University, Assistant Professor
MITCHELL, GEORGE L., LL.B., Montana State University, Instructor
PANTHER, ROBERT T., LL.B., Montana State University, Professor; Financial Vice President
SORENSEN, CHESTER A., M.B.A., University of Washington, Assistant Professor
SWANSON, MARGARET (Mrs.), M.Ed., University of Washington, Assistant Professor
SWANSON, MAX R., B.S., University of Nebraska, C.P.A. (Mont.), Lecturer (part-time)
TAYLOR, NORMAN E., Ph.D., University of Minnesota, Associate Professor
WILSON, BRENA F. (Mrs.), M.A., University of Southern California, Professor
TIMMONS, GORDON D., M.S., Montana State College, Graduate Assistant
ZOPF, GERALD F., B.S., Montana State University, Graduate Assistant

SCHOOL OF EDUCATION
CARLETON, LINUS J., Ed.D., University of Oregon, Dean and Professor
AMES, WALTER R., Ph.D., University of Wisconsin, Professor Emeritus
ANDERSEN, DALE G., M.Ed., University of Southern California, Assistant Professor (Spring Quarter)
COLLEY, EDMUND K., Ed.S., Indiana University, Assistant Professor; Director, Audio-Visual Centralized Services

CONSTANZ, HENRY P., M.E., University of North Dakota, Visiting Instructor (part-time)
GORMAN, ROBERT E., Ed.D., Indiana University, Associate Professor; Director, Counseling Center
GROOME, IRENE A., M.A., State University of Iowa; MA. (L.S.), George Peabody College for Teachers, Assistant Professor
HOGERS, LAWRENCE W., M.A.L.S., University of Michigan, Assistant Professor
HOOG, CHARLES E., M.A., Montana State University, Assistant Professor; Director of Teacher Placement
JAY, ROBERT H., D.Ed., University of Oregon, Assistant Professor
LOTTIE, KENNETH V., Ph.D., Harvard University, Professor
MATHIL, CHARLES R., M.Ed., Montana State University, Assistant Professor Emeritus
MILLIS, GEORGE H., Ed.D., University of Illinois, Associate Professor
MUNRO, JAMES J. R., Ed.D., University of Washington, Associate Professor (on leave Winter Quarter)
RIESE, HARLAN C., Ed.D., Montana State University, Assistant Professor
SLATTON, VERNON G., Ed.D., University of Oregon, Professor; Director, Education Research and Service
SMITH, LEO, M.A., University of Washington, Professor; Registrar
SOEDESS, RICHARD A., Ph.D., University of California at Los Angeles, Assistant Professor (also Botany); Director, Biological Station
WATSON, FRANK J., M.A., Northwestern University, Associate Professor (on leave Spring Quarter)
BAUSHEL, KENNETH M., Montana State University, Graduate Assistant
BENTON, JOHN G., B.A., Montana State University, Graduate Assistant
FELLOWS, THOMAS, Jr., B.S., Montana State College, Graduate Assistant
GROVE, STANLEY A., M.S., University of Oregon, Graduate Assistant
JENSEN, CLARENCE G., M.S., Brigham Young University, Graduate Assistant
PAULSON, CLYDE S., M.A., Montana State University, Graduate Assistant; Counseling Center
SWAN, MALCOLM, M.E., Montana State College, Graduate Assistant

THE SCHOOL OF FINE ARTS
BOYLE, CHARLES W., Ph.D., Indiana University, Dean and Professor of Music

Art
DEW, JAMES E., M.A., Oberlin College, Associate Professor and Chairman
ARNOLO, ADEN F., M.A., State University of Iowa, Professor
AUTO, A. RUBY, M.F.A., Washington State University, Assistant Professor (on leave Winter and Spring Quarters)
BLACKMER, MAXINE (Mrs.), M.A., Montana State University, Instructor (part-time)
FAGAN, PETER, M.F.A., University of Oregon, Instructor (Winter and Spring Quarters)
HOOK, WALTER, M.A., University of New Mexico, Professor
LEEDY, JAMES A., M.A., Michigan State University, Assistant Professor
BALDWIN, DOUGLAS K., B.A., Montana State University, Graduate Assistant
CARLEUX, MICHAEL, M.A., Montana State University, Graduate Assistant
NESTEE, HERBERT P., B.A., Idaho State University, Graduate Assistant
STACH, LEONARD S., Northern Illinois University, Graduate Assistant

Drama
BROWN, FIRMEN H., Jr., Ph.D., University of Wisconsin, Associate Professor and Chairman
BANKS, DOUGLAS H., Ph.D., University of Washington, Associate Professor (on leave Winter and Spring Quarters)
BARNES, LAWRENCE E., M.S., University of Oregon, Visiting Lecturer (Winter and Spring Quarters)
JAMES, RICHARD H., M.A., Northwestern University, Instructor
JOHNSON, CLAUDINET (Mrs.), B.A., Montana State University, Graduate Assistant
McCAIG, R. DONALD, B.A., Montana State University, Graduate Assistant (resigned March 1, 1964)
MAYOR, JOHN A., B.A., St. Ambrose College, Graduate Assistant (Winter and Spring Quarters)
Music

DOTY, GERALD H., Ed.D., Indiana University, Associate Professor and Chairman

ANDERSON, EUGENE, M.A., University of Washington, Professor

BOYD, CHARLES W., Ph.D., Indiana University, Professor; Dean, School of Fine Arts

CARR, CAROL D., M.Mus., Eastman School of Music, Instrucutor

EVERSOLE, JAMES A., M.Mus., College-Conservatory of Music of Cincinnati, Assistant Professor (on leave 1963-64)

HESEG, HAROLD H., M.Mus., Eastman School of Music, Instructor (part time)

HEYER, MURIEL J., M.Mus., College-Conservatory of Music of Cincinnati, Instructor

HUMMEL, GEORGE, M.A., Columbia University, Associate Professor

JOHNSTON, DONALD O., Ph.D., Eastman School of Music, Assistant Professor

LEAVENWORTH, ROSEMARY (Mrs.), M.Mus., Eastman School of Music, Instructor

LESTER, JOHN L., B.Mus., Southwestern University, Professor

LEWIS, GEORGE D., M.Mus., Montana State University, Assistant Professor

MANNING, WILLIAM M., M.Mus., Drake University, Assistant Professor

MUSKULMAN, JOSEPH A., M.Mus., Northwestern University, Assistant Professor

OAKLAND, LLOYD O., M.Mus., Northwestern University, D.Mus. (hon.), Cornell College, Professor

PERRY, LAURENCE B., M.Mus., Syracuse University, Assistant Professor

RAMSHILL, BERNICE B. (Mrs.), Associate Professor Emeritus

REYNOLDS, FLORENCE, M.Mus., Eastman School of Music, Associate Professor (on leave 1963-64)

RICHMAN, LUTHER A., Ed.D., University of Cincinnati, D.Mus. (hon.), College-Conservatory of Music of Cincinnati, Professor

WEDDLING, EUGENE, B.Mus., Yale University, Professor

WENDY, RUDOLF, M.Mus., Eastman School of Music, Professor

WHITWELL, DAVID E., Ph.D., Catholic University of America, Instructor

CLEMENT, ALBERT J., M.A., University of Wyoming, Graduate Assistant

CURRAGE, JOHN R., B.A., College of Great Falls, Graduate Assistant

HARTFELDER, GENE A., B.A., Ripon College, Graduate Assistant

VANDERLINDE, R. JAY, B.F.A., University of South Dakota, Graduate Assistant

School of Forestry

BOLSE, ARNOLD W., D.P.A., Harvard University, Dean and Professor; Director of Montana Forest and Conservation Experiment Station

ADAMS, KENT T., M.F., Oregon State University, Instructor

BENAHAM, RICHARD W., M.S.F., Montana State University, Assistant Professor

BLAKE, GEORGE M., Ph.D., University of Minnesota, Assistant Professor

CRANE, JOHN J., Ph.D., University of Michigan, Professor (also Zoology); Leader, Montana Cooperative Wildlife Research Unit

EDOLEMAN, LEE E., M.S., Colorado State University, Instructor

FAVRO, JAMES L., M.F., University of Washington, Assistant Professor (on leave 1963-64)

GERLACH, FREDERICK L., M.F., Montana State University, Assistant Professor

KRIS, JOHN P., Ph.D., Yale University, Professor

LANGE, ROBERT E., M.F., Colorado State University, Assistant Professor

MERRIAM, LAWRENCE H., Ph.D., Oregon State University, Assistant Professor

MORRIS, MILTON S., M.S., Colorado State University, Professor

NIMMO, THOMAS J., Ph.D., University of Wisconsin, Assistant Professor

PENGELLY, W. LEONEL, Ph.D., Utah State University, Lecturer

PIERCE, WILLIAM R., Ph.D., University of Washington, Associate Professor

STOFFE, ROBERT W., M.F., University of Michigan, Assistant Professor

TAYLOR, RICHARD D., Ph.D., University of California, Professor (on leave 1963-64)

Williams, Ross, M.F., Yale University, Dean and Professor Emeritus; Director Emeritus, Forest and Conservation Experiment Station

Brown, FAY, B.S.F., Montana State University, Graduate Assistant

BUENEMER, RONALD H., Graduate Assistant

Haines, MANFRED L., B.S., Montana State University, Assistant

WRIGHT, WILLIAM B., B.S., Louisiana Polytechnic Institute, Graduate Assistant

School of Journalism

BLOMBERG, NATHAN, B.A., Oxford University, Dean and Professor

BRICK, WARREN J., Ph.D., State University of Iowa, Associate Professor

COSGROVE, ANDREW C., M.A., University of Minnesota, Professor; Dean of Students

DUGAN, EDWARD B., M.A., University of Missouri, Professor

HILL, PHILIP J., M.A., State University of Iowa, Assistant Professor; Director, Radio-Television Studies

JOHNSON, DOLORES M., B.A., Montana State University, Assistant Professor (part time)

REAU, DEAN M., A.M., University of Missouri, Assistant Professor

WOWLER, PINKERTON L., B.A., Montana State University, Graduate Assistant

OLSON, ROLF Y., B.A., Montana State University, Graduate Assistant

RICHARDS, RONALD P., B.A., Montana State University, Assistant

School of Law

SULLIVAN, ROBERT E., LL.B., University of Notre Dame, Dean and Professor

BRICKS, EDWIN W., LL.M., Harvard University, Professor

CROMWELL, GARDNER, S.J.D., University of Michigan, Associate Professor

ELSON, LARRY M., S.J.D., University of Michigan, Assistant Professor

HOUSTON, ROBERT M., M.A. (L.S.) University of Denver; LL.B., University of San Francisco, Assistant Professor; Law Librarian

LEAF, CHARLES W., S.J.D., Harvard University, Dean Emeritus; Professor Emeritus

LOHN, STEPHEN V., LL.M., Harvard University, Lecturer (part-time) (Fall Semester)

MAKER, DAVID R., S.J.D., Harvard University, Dixon Professor

ROUSSE, LESLIE R., LL.M., University of Michigan, Professor

SWANSON, RUSSELL E., B.A., Montana State University, Professor (part-time) (Fall Semester)

STONE, ALBERT W., LL.B., Duke University, Professor

TOLMEE, J. HOWARD, LL.B., Harvard University, Professor Emeritus

WHITE, STUART W., B.A., Harvard University, Professor Emeritus

WYNN, ROBERT L., B.A., St. Olaf College, Assistant

WILEY, DOROTHY L., M.F., University of Colorado, Professor Emeritus

WILSON, KEMP J., B.S., Montana State College, Assistant

School of Pharmacy

VAN HOREN, ROBERT L., Ph.D., State University of Iowa, Dean and Professor

BRYAN, GORDON H., Ph.D., University of Maryland, Professor

CANNON, DONALD H., Ph.D., University of Wisconsin, Assistant Professor

PETTINATO, FRANK A., Ph.D., University of Washington, Assistant Professor

SUCHY, JOHN F., Ph.D., University of Colorado, Professor Emeritus

WAILES, JOHN L., Ph.D., University of Colorado, Professor

Affiliated School of Religion

TATSUYAMA, TOSHIKI, Th.D., Boston University, Assistant Professor and Director
SERVICES

Library
CAMPBELL, KATHLEEN, M.S., University of Denver, Librarian (Professor)
BREWER, MARIL M. (Mrs.), B.A., Montana State University, Reference Librarian (Assistant Professor)
DELAND, MARY F. (Mrs.), B.S. in L.S., University of Washington, Catalog Librarian (Assistant Professor)
MIDGERT, ASHLAND S., (Mrs.), B.A., Montana State University, Assistant Catalog Librarian (Instructor)
MILLS, DOUGLAS E., M.A., B.L.S., University of California, Acquisitions Librarian; Head, Technical Processes Department (Assistant Professor)
NELSON, RITA (Mrs.), B.A., Montana State University, Assistant Acquisitions Librarian (Assistant Professor)
POND, PATRICIA B. (Mrs.), M.A., University of Minnesota, Reference Assistant (Instructor)
SPEER, LUCILE E., M.A., University of Chicago, Documents Librarian (Professor)
WHITE, M. CATHLEEN, M.A., Montana State University, Assistant Librarian and Reference Librarian Emeritus (Professor Emeritus)

Bureau of Business and Economic Research
BLOOMBERG, PAUL B., D.B.A., Indiana University, Director; Dean and Professor, Business Administration
JOHNSON, MAXINE C. (Mrs.), M.A., Montana State University, Assistant Director and Research Associate
HURLEY, ELIZABETH L. (Mrs.), B.A., University of Chicago, Research Associate

Forest and Conservation Experiment Station
BOLLE, ARNOLD W., D.P.A., Harvard University, Director; Dean and Professor of Forestry
COONEY, ROBERT F., B.S.F., Montana State University, Research Associate (Courtesy)
STAFF of Forestry School
BRAUN, CLAIRE E., B.S., Kansas State University, Graduate Assistant (Winter and Spring Quarters)
CARRON, TONY C., B.S.F., Montana State University, Research Assistant
CONNAD, RALPH M., B.S., Montana State University, Graduate Assistant (Autumn Quarter)
GRATZER, MILOS J., B.S., University of British Columbia, Graduate Assistant (Winter and Spring Quarters)
LINDU, CRAB J., B.S.F., Montana State University, Assistant (Winter Quarter)
MAGONE, LAWRENCE M., B.S.F., Montana State University, Graduate Assistant (Autumn Quarter)

Biological Station
SOLBERG, RICHARD A., Ph.D., University of California at Los Angeles, Director; Assistant Professor, Botany and Education
HARVEY, LEROY H., Ph.D., University of Michigan, Assistant Director; Professor of Botany
STAFF of Botany and Zoology Departments

Wildlife Research Unit
CRAIGHEAD, JOHN J., Ph.D., University of Michigan, Leader; Professor, Forestry and Zoology
ATWELL, GERRY C., M.S., Montana State University, Assistant Unit Leader and Research Associate
CRAIGHEAD, FRANK C., Ph.D., University of Michigan, Research Associate
COONEY, ROBERT F., B.S.F., Montana State University, Unit staff member; Research Associate, Forest and Conservation Experiment Station (Courtesy)
HOPFMANN, ROBERT S., Ph.D., University of California, Unit Staff member; Associate Professor, Zoology (on leave 1963-64)
PENKELLY, W. LESLIE, Ph.D., Utah State University, Lecturer
TABER, RICHARD D., Ph.D., University of California, Unit staff member; Professor, Forestry (on leave 1963-64)
WRIGHT, PHILIP L., Ph.D., University of Wisconsin, Unit staff member; Professor, Zoology

Extension and Public Service
CROWDER, TROY F., M.A., State University of Iowa, Director; Assistant to the President (Assistant Professor)

Publications and News Service
RYAN, JACK, B.A., Montana State University, Director; Distribution Manager, University Press

Counseling Center
GORMAN, ROBERT E., Ed.D., Indiana University, Director; Associate Professor, Education
PEARSON, DAVID T., M.S., University of New Hampshire, Graduate Assistant
SPEELER, LEE, M.S., Montana State University, Graduate Assistant

Placement Service
HOOD, CHARLES E., M.A., Montana State University, Director of Teacher Placement; Assistant Professor, Education

Alumni Office
HIDIHAM, ROBERT J., B.A., Montana State University; Executive Secretary, Alumni Association

Audio-Visual Centralized Services
COLBY, EDMUND K., Ed.S., Indiana University, Director; Assistant Professor, Education

Residence Halls
BROWN, JAMES A., M.S., Colorado State University, Director
CHAMBERLAIN, D. GERMINE, B.S., University of Alberta, Director, Food Service; Instructor, Home Economics

Family Housing
LARSON, KEITH T., B.A., Montana State University, Manager

Miscellaneous Administration
ANDERSON, HOMER E., M.A., Montana State University, Director of Admissions (Instructor)
ARMES, LUCILLE JAMESON (Mrs.), B.A., Montana State University, Secretary to the President (Assistant Professor)
FERGUSON, MARY ELMORE (Mrs.), M.A., Columbia University, Assistant Director Emeritus, Museum and Northwest Historical Collection (Assistant Professor Emeritus)
HANSEN, ROBERT W., M.D., University of Illinois, Director, Health Services (part time)
KRIEGER, FREDERICK W., B.S., University of Colorado, Superintendent, Buildings and Grounds
LOMMASON, EMMANUEL E. (Mrs.), M.A., Montana State University, Assistant Registrar (Instructor)
MARTFELL, EARL W., B.A., Montana State University, Director, Student Activity Facilities; Athletic Manager (Instructor)
MURPHY, CALVIN L., B.A., Montana State University, Controller
SWEARINGEN, T. G., B.A., Montana State University, Director, Planning and Construction
VALACCHI, ANTONIO, M.E., Montana State University, Assistant to the Dean of Students

OFFICIAL DIRECTORY—9
10—ORGANIZATION

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 40,500 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.

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

Each of the professional schools, or departments, with additional accrediting is approved by the appropriate national accrediting organization: the American Association of Collegiate Schools of Business, the American Chemical Society, the National Council on Accreditation of Teacher Education, National Association of Schools of Music, Society of American Foresters, American Council on Education, Association of American Law Schools, and the American Council on Pharmaceutical Education.

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.

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, ex-officio Regents of the University of Montana. There is also a local three-member Executive Board for each Institution. The 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." The Office of the executive secretary is located in the State Capitol at Helena, Montana.

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.

FUNCTIONS AND GOALS. Montana State University is responsible for: (1) providing undergraduate education in the arts and sciences, (2) professional and advanced professional education based on a sound foundation of arts and sciences, (3) graduate education, including doctoral programs, (4) research conducted through in the creative activities supported by both public and private sources, and (5) maintaining a vigorous program of service as part of its responsibility to state and nation.

The University's program of undergraduate education makes available to the student a fund of knowledge pertaining to the world in which he lives and to the heritage of free men and institutions. It seeks to liberate his intellectual capacities for continued learning and to deepen his awareness of ethical and aesthetic values. These goals it fosters through (1) teaching that stimulates the student and inspires him to continue, on his own, the search for knowledge; (2) a campus environment that sustains the efforts of teachers and students to achieve the basic objectives for which the University exists; and (3) a curriculum that: (a) provides reasonable depth in the several liberal arts disciplines—the biological, physical and social sciences, the humanities, and the fine arts; requires demonstrated literacy in use of the English language and encourages competence in foreign language, (c) provides opportunity for development of professional and technical competence as a practitioner in some field of endeavor by focusing knowledge and experience from many fields as it applies to the profession concerned, emphasizing the principles and methods basic to the field through study in areas fundamental to the profession, cultivating needed skills, and inculcating the profession's standards, (b) reveals man's great insights and discoveries of the past and stimulates the individual to seek new insights and discoveries, (d) provides maximum opportunities for each student to develop his individual talents and capacities, and (f) encourages a growing awareness of the significance of ethical values and the personal and social responsibilities of the educated person.

In Law, where education beyond the normal baccalaureate is a prerequisite to professional competence and licensing, advanced professional education is offered.

At Montana State University graduate education, which emphasizes advanced training in the disciplines of research and critical analysis, affords the able student opportunities to advance his knowledge in areas of his interest and competence and extend his unique intellectual qualities; increase his potential for significant contribution to man's fund of knowledge; and enlarge his capacity for leadership in scientific or professional service.

The graduate program exploits special advantages of location, faculty interests and qualifications, and facilities. Master's degrees are offered in most fields, some for terminal purposes and others to lead to more advanced work. Fifth and sixth year programs not involving a degree are offered in some areas. Doctoral programs are offered in a number of selected disciplines.

CAMPUS AND FACILITIES—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), the Fort Missoula property (243 acres), and the Experimental Forest (22,000 acres). The physical plant includes thirty-three brick and masonry buildings, as well as numerous other structures for storage and other purposes.

Special instructional facilities also include the Biological Station, 90 miles north of the campus on Flathead Lake with buildings for housing and research; the Forest Nursery and the Experimental Forest near the campus; and the Wildlife Research Unit. In addition to the general library there is a separate library for the law school. Special museums and collections include those relating to anthropology, biology, geology, and history.

THE LIBRARIES on campus have collections numbering 271,845 volumes, receive 5,226 periodicals and house 39,581 maps. The library is also a depository for United States government documents.

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 2,000 acres.

Facilities include an administration-recreation building, a four-room laboratory, three one-room laboratories, a kitchen and dining hall, three bath houses, thirty-five one-
room and eleven two-room cabins, as well as various maintenance buildings.

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 opportunity for research in many fields of Biology.

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

THE BUREAU OF BUSINESS AND ECONOMIC RESEARCH of the School of Business Administration is set up to provide Montana businessmen with the types of statistics useful to them in conducting their businesses; to disseminate information of general interest on the economic and social aspects of the state; and to engage in studies in the areas of economic and other social sciences which show promise of making contributions to knowledge, or to the development of methods of analysis, regardless of whether such studies are directly related to the state.

Publications include the MONTANA BUSINESS QUARTERLY; THE MONTANA ALMANAC, issued periodically (in co-operation with other University departments); the MONTANA TRADE ASSOCIATION DIRECTORY, issued annually; and various monographs. Contributors include members of the staff, the faculty, and on occasion, the student body.

FOREST AND CONSERVATION EXPERIMENT STATION is staffed by: Kent T. Adair (Forest Economics), Richard W. Behan (Policy and Administration), George M. Blake (Silviculture), Arnold W. Bolle (Director), Robert F. Cooney (Research Associate), Lee E. Eddleman (Range Management), John P. Kril (Wood Utilization), Robert A. McKinsey (Lubrecht Forest Field Assistant), Lawrence C. Merriam (Recreation), Melvin S. Morris (Range Management), Thomas J. Nimlos (Forest Soils), William R. Pierce (Forest Management), Robert W. Steele (Forest Fire Control), Richard D. Taber (Wildlife Management).

The Forest and Conservation Experiment Station, School of Forestry, Montana State University, operates under Chapter 141, Laws of Montana of 1937. The Dean of the School of Forestry was designated as director. The Act specifies that the purpose of the Station is:

"To study the growth and the utilization of timber . . . To determine the relationship between the forest water conservation, and runoff regulation; the forest and pasture for domestic livestock and wildlife; the forest and recreation and those other direct and indirect benefits that may be secured by the maintenance of or the establishment of forest or woodlands . . . To study and develop the establishment of windbreaks, shelter belts and woodlots on the farms of the State . . . to study logging, lumbering and milling operations and other operations dealing with the products of forest soils with special reference to their improvement . . ."

"To cooperate with the other departments of the University of Montana, the state forester and the state board of land commissioners, the state fish and game commission, the state livestock commission, and the United States government and its branches as a land grant institution, or otherwise, in accordance with their regulations."

"To collect, to compile and to publish statistics relative to Montana forests and forestry and the influence flowing therefrom: to prepare and publish bulletins and reports . . . to collect a library and bibliography of literature pertaining to or useful for the purpose of this act . . . to establish such field experiment stations and to otherwise aid such gifts of land or other donations as may be made."

The station is supported by funds appropriated by the Congress and the State of Montana, income from the sale of forest products, grazing, mining and special leases, and by private grants. Some research is concentrated on the 22,000 acre Lubrecht Experimental Forest, and at appropriate locations throughout the State—much of it in cooperation with private, state and federal agencies.

Information derived from research conducted by the staff is made available to the people of the State in printed bulletins, leaflets, and circulars.

WILDLIFE RESEARCH UNIT. The Montana Cooperative Wildlife Research Unit was established at Montana State University in 1949. The Unit is 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 Unit Coordinating Committee 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 requirements for a degree of Master of Science in Wildlife Technology. Concentrations in the areas of wildlife and fisheries for and in behalf of the Unit Coordinator and University Faculty will ordinarily lead to the degree of Master of Science in Wildlife Management.

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 March 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.

UNIVERSITY MUSEUM contains anthropological, archaeological, art, botanical, geological, historical, and zoological collections. The historical and part of the Indian collections are on display in the Fine Arts Building, while the other collections are housed with the departments most intimately concerned.

The Historical and Indian displays are open to the public from 3:00 to 5:00 o'clock on Mondays through Thursdays and on Sundays from 2:00 to 4:00 o'clock while the University is in session. The other collections may be visited by request to the department concerned.

THE 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.

THE BUREAU OF PRESS AND BROADCASTING RESEARCH undertakes research and service projects as part of the program of the School of Journalism. It is responsible for THE MONTANA JOURNALISM REVIEW and other publications of value to the press and broadcasting media.

THE DIVISION OF EXTENSION AND PUBLIC SERVICE is the agency through which the University carries on off-campus activities and services. In it are the departments of Home Study, Extension Classes, and the School for Administrative Leadership.

The division works directly with communities and groups in community historical pageant-dramas, community service surveys, institutes, forums, short courses, and conferences.
APPLICATIONS 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. (c) A completed University Health Record Form signed by a qualified physician, and mailed by him directly to the University Health Service.

All new freshmen, and transfer students with less than a full year of college credit, are required to take the AMERICAN COLLEGE TESTING PROGRAM examination, preferably in November or February. The test is also offered in April, June, and in the summer. Complete information and registration forms are sent to all high schools well in advance of each test date. Check with your High School Counselor or Registrar if information is not available, write to the REGISTRAR, Montana State University, Missoula, Montana.

Results of these examinations are used for general advising purposes to assist in identifying students with high college potential who may be seeking scholarships, for placement in English, and as part of the information used to determine non-resident admissions.

New students who do not take the AMERICAN COLLEGE TESTING PROGRAM examination in advance will pay the $4.00 registration fee and take it on campus before they register.

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 Montana 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.

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 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.

STUDENTS FROM NON-ENGLISH SPEAKING COUNTRIES who wish to qualify for admission to Montana State University must give evidence of proficiency in English. Formal tests with certification by appropriate American diplomatic officers are now available at some United States diplomatic posts. If such tests are not available, the applicant may arrange for testing, with cost payable in his own currency, by writing:

Testing and Certification
English Language Institute
University of Michigan
Ann Arbor, Michigan, U. S. A.

The student should indicate that he wishes to study at Montana State University, the level (undergraduate or graduate), and the field in which he proposes to study. The English Language Institute will inform the student how to complete arrangements for testing and, following examination, will send the results directly to Montana State University.

NON-RESIDENT ADMISSIONS. Entering freshmen (no previous college work) must be in the upper 50 per cent of their high school graduating class or pass an entrance examination which establishes the equivalent level of competency. The American College Testing Program examination will be used for this purpose.

Non-resident transfer students must: (a) meet general admission requirements, (b) be eligible to return to the school from which they are transferring, and (c) have a C average on all college work attempted.

Changing schools or objectives may result in loss of time. 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.

ADVANCE REGISTRATION FEE. For all new applicants, except graduate students, the registration fee of $10.00 (or $5.00 per semester) must accompany the application for admission. If the student registers, this fee is credited to him as payment of the registration fee for the quarter (semester) for which application was made (see STUDENT FEES), but it is not refundable if the student fails to register for the term indicated for entrance. This fee will be refunded if admission is refused.

ADMISSION BY EXAMINATION. A 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.

The State Superintendent of Public Instruction issues a high school equivalency certificate under authorization of the State Board of Education on the basis of the General Educational Development Tests to service personnel, honorably discharged veterans and non-veteran adults, provided the applicant meets the following requirements: (1) A minimum standard score of 35 or above on each of the five tests and an average standard score of 45 on all five GED tests. (2) Minimum age of 19 years. Service personnel taking GED tests before age 19 may not apply for an equivalency certificate before they are 18 years of age. (3) Applicant must be a legal resident of Montana, or employed regularly in the state, or assigned by military authority to a station in Montana for a period of 30 days prior to examination. (4) Previous high school enrollment is not required. (5) A knowledge of American government, including the principles of national, state and local government, is required. This requirement may be met by submitting at the time of GED testing an official transcript of credits for an American government course completed either in an accredited high school, through a correspondence school approved by the National University Extension Association or the National Home Study Council, through the United States Armed Forces Institute, Marine Corps Institute or Coast Guard Institute; or by obtaining a passing score in an American Government examination administered by the University Counseling Service or by an authorized Testing Service Agency in Montana.

Application for the GED tests is made on a special form obtainable from the Registrar. Results of GED tests taken in the service can be accepted only when reported officially by the United States Armed Forces Institute, by official agencies of the Veterans Testing Service of the American Council on Education, or by the manager of a Veterans Administration hospital which has an authorized Educational Therapy Program.

A fee of $4.00 is required and this includes administration of the American Government examination to those who must take it. A fee of $1.00 is charged for administration of the GED General Test.
the American government test, only. The same fee applies for a retest on all five parts of the GED and the American Government examination if taken with the five parts of the GED test. A fee of $1.00 per test is charged for a retest on one or more separate tests of the GED battery, and for retest on the American Government examination (except as noted above). Maximum charge for any retest period is $4.00. No fee is charged for issuing high school equivalency certificates.

A waiting period of six months is required before applicants may re-take the American Government examination or any part or all of the test of General Educational Development. A waiting period of three months is required for any subsequent re-test on the GED tests or the American Government examination.

High School diplomas are not issued on the basis of GED tests, nor are Montana high schools authorized to issue diplomas or certificates on the basis of the General Educational Development Tests.

EARLY ADMISSION may be granted to a limited number of high school students who have completed their junior year, with specific agreement and recommendation of the High School and the University.

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. A transfer student must meet general admission requirements, be eligible to return to the school from which he is transferring, and his record must be such as would assure his admission to, or reinstatement at, this University had he been one of its students. 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 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. (This paragraph applies only to Montana residents.)

ADVANCED PLACEMENT with college credit may be granted from high schools offering college level courses. Such courses are to be agreed upon in advance by the high school involved and the University. Suitable means of validation by comprehensive examinations will be determined by the University. Advanced placement examinations of the College Entrance Examination Board may be accepted.

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 to which they desire. Such special students may acquire status as regular students and become candidates for degrees either (a) by taking entrance examinations or (b) by transferring to entrance credit sufficient credits earned in the University to make the student eligible 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. Under certain circumstances, older students, permitted to select courses 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. Ordinarily, students may not register after the first week of classes.

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) Various tests to help the student determine University aptitudes and the courses in which he or she will learn most effectively. (4) Social gatherings at which students become acquainted with fellow classmates, students of other classes, and members of the faculty. (5) 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 major courses and all group requirements by the end of their third year at the University except in their field of specialization.

WAIVER OF PREREQUISITE. Instructors must file with the Registrar's Office a "Waiver of Prerequisite" form for any student allowed in a course without meeting the stated prerequisite.

MAXIMUM CREDIT LOAD. Except for students registering in an approved curriculum, the maximum credit load per quarter is as follows: (1) For Freshmen and Sophomores, 16 credits plus physical education and ROTC as required; (2) Juniors and Seniors may register for 17 credits except that students with approximately B averages may be permitted by their advisers to register for 18 credits.

In addition to those allowed numbers of credits per quarter, freshmen and sophomores may take one additional credit selected from applied or ensemble music, rehearsal and performance, and current affairs. The student must maintain a C average during the previous quarter in residence in order to be permitted to carry this added credit. 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.

MINIMUM SCHOLASTIC REQUIREMENTS. A student may be dropped from the University any quarter if his record is very unsatisfactory.

After a student has been dropped for low grades, he is usually not readmitted until three quarters have passed. However, the Academic Standards Committee may, if convinced that the circumstances warrant, readmit upon his appeal any student at any time.

Students entering the University prior to autumn quarter 1962 will continue to be governed by the deficiency score system in effect at the time of entrance.

Students entering autumn quarter 1962 and thereafter who do not, based on credits attempted, attain and maintain grade-point-averages (GPA's) as shown below in columns (1) and (2) will be dropped. Those within credit and GPA ranges under (3) below, are in effect on scholastic probation.

<table>
<thead>
<tr>
<th>Number of Credits Attempted</th>
<th>GPA Required for Good Standing</th>
<th>GPA Required for Waiver</th>
<th>GPA Required for Reinstatement</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>1.5</td>
<td>1.7</td>
<td>1.6</td>
</tr>
<tr>
<td>45</td>
<td>1.6</td>
<td>1.7</td>
<td>1.8</td>
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<tr>
<td>90</td>
<td>1.7</td>
<td>1.7</td>
<td>1.8</td>
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<tr>
<td>135</td>
<td>1.8</td>
<td>1.7</td>
<td>1.8</td>
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<td>and more</td>
<td></td>
<td></td>
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</tbody>
</table>

Under exceptional circumstances, upon petition, the
probation period may be extended for students who fall below the minimum grade-point average.

CHANGES IN PROGRAM OF STUDIES. To drop or add courses, change from credit to listener or vice versa, the student must secure a Drop-Add card from the Registrar’s Office and return it to that office after getting the required signatures. Withdrawal from a course scheduled for a full quarter is not permitted during the first five weeks of instruction with a “W” (withdrawal, no credit) and an “F” is assigned if a student drops a course after the fifth week. An “F” is assigned for dropping a 5-week course after the third week and also for any unofficial withdrawal from a class. Changes from credit to listener or vice versa are allowed only within these same time limits. Ordinarily no course may be added after the first week of classes.

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 and “F” grades are assigned. 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 A COURSE. When a course in which a student has previously received a grade is repeated, the first grade and any credit received are automatically cancelled and the credit and the last grade received are recorded, even if the second grade is lower. Loss of credit due to repeating a course is the responsibility of the student.

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 the 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 Veterans’ Administration are based on the number of hours of work for which the student is registered. A minimum of 14 credit hours is required for full payment under the Korean G. I. Bill.

UNIVERSITY EMPLOYEES’ REGISTRATION. With approval of the school dean or departmental chairman and the Academic Vice-President, regular full-time employees of the University may register for programs of not more than 6 credits in a quarter.

DEGREES AND MAJORS

Bachelor’s, Master’s, Doctor of Philosophy, and Doctor of Education 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.

COLLEGE OF ARTS AND SCIENCES

Bachelor of Arts, with majors in:
- Anthropology
- Biology
- Botany
- Chemistry
- Economics
- Economics-Political Science
- Economics-Sociology
- English

Bachelor of Science, with majors in:
- Applied Science
- Library Science
- Mathematics
- Microbiology
- Philosophy
- Physical Sciences
- Political Science
- Political Science-Economics

Bachelor of Science in Pharmacy

Bachelor of Science in Medical Technology

Bachelor of Science in Secretarial-Home Arts

Bachelor of Science in Wildlife Technology

SCHOOL OF FINE ARTS

Bachelor of Arts, with majors in:
- Art
- Drama
- Music

Bachelor of Music, with majors in:
- Applied Music
- Music Education
- Theory or Composition

PROFESSIONAL SCHOOLS

Bachelor of Arts in Business Administration

Bachelor of Science in Business Administration

Bachelor of Arts in Education

Bachelor of Science in Forestry

Bachelor of Science in Forest Conservation

Bachelor of Arts in Journalism

Bachelor of Science in Pharmacy

Bachelor of Arts in Radio-Television

Bachelor of Laws

REQUIREMENTS FOR GRADUATION

CATALOG GOVERNING GRADUATION. Students must meet requirements of the catalog in effect when they entered the University, or they may arrange with their department chairmen to graduate under a later catalog. Students changing majors are governed by the catalog in effect at the time of such change.

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 in 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 192 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 90 semester hours in addition to the entrance requirements of the School of Law. Candidates for the degree of Bachelor of Science in Pharmacy must

French
Geography
Geology
German
Health and Physical Education
History
History-Political Science
Home Economics
Latin
Law
Political Science-History
Pre-Medical Sciences
Psychology
Secretarial-Home Arts
Social Welfare
Sociology
Sociology-Economics
Spanish
Speech
Speech Pathology and Audiology
Zoology

Bachelor of Science, with majors in:
- Chemistry
- Health and Physical Education
- Home Economics
- Military Science

Bachelor of Science in Medical Technology

Bachelor of Science in Secretarial-Home Arts

Bachelor of Science in Wildlife Technology

Bachelor of Science in Pharmacy

Bachelor of Arts in Radio-Television

Bachelor of Laws
complete a five year course. Candidates for the Bachelor of Arts degree in the College of Arts and Sciences must complete all credits in that college, except that credits in Art and Drama may be included.

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—average work; D—work below average, but barely passing; F—failure; P—pass without defining the grade, applies only to (1) non-credit courses, and (2) certain seminars and other courses in the 500–600 series stressing independent work, which are designated by the department or school and announced in advance. The P grade must apply to all registrants in the course in the quarter concerned. The grade I—Incomplete is given if all the work in a course has not been completed and there is sufficient reason for this. An I will be changed to an F if the work is not completed during the student's next quarter of residence.

In research, thesis, and law courses 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 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 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.

The cumulative grade-point average is computed by dividing total grade points earned by the total number of hours undertaken, excluding courses in which grades of W, P, I, or N (unfinished continuous course) are received.

QUALITY OF WORK. A minimum grade point average of “C” or 2.0 is required in (1) all college work attempted, (2) all college work undertaken at Montana State University, and (3) all work attempted in the major field.

To continue in third year major courses, at least a 2.0 (C) average is required on all credits previously registered for and for which final grades have been received in major courses. This also applies to teaching majors.

CREDITS REQUIRED FOR A MAJOR. Students may be required to complete from 45 to 60 credits in the chosen field. Students who complete a four-year degree in English, Spanish, or French must complete 40 to 60. In curricula allowing 5 credits of a survey course to count as part of major requirements, the total maximum of 60 credits allowed in the major includes these 5 credits. 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.

CREDIT LIMITATIONS. 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 28 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 (Music 100, 101 thru 403, 151 thru 433, 114 thru 119; 125, 126, 127, 129) nor 6 credits in ensemble music (Music 105 thru 110, and 140) 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 180-181-182, 183, 184-185-186, 187-188-189 and 190-191.

CORRESPONDENCE STUDY. Up to 30 credits earned by correspondence study may be counted towards graduation.

CREDIT BY EXAMINATION. Under certain circumstances, a student may challenge and receive credit for a course in which he has not been regularly registered. The challenge system does not apply to law or pre-law courses.

Each school or department determines which, if any, courses within the department may be challenged. The dean of the school or head of the department must approve any arrangements prior to testing for challenge credit.

A student must have a 3-point grade average in all courses in which he has registered and an entering freshman must have a 3-point grade average in order to challenge a course.

A student who has credit for equivalent material in high school cannot receive University challenge credit for it.

Challenge credit will be granted on a grade of B or better earned in an examination which must be at least in part written.

Maximum challenge credit allowed is 30 credit hours with no more than 20 credit hours in any one department.

A fee of $3.00 per credit hour is charged. Such examinations are available only to regularly enrolled students.

SPECIALIZATION. A student must select a major field of study before entering the junior year at the University.

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

1. Physical Education, 6 consecutive 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.

2. All students except those excused for cause are required to pass the University swimming test. Customarily students will pass this test during the 6 quarters of Physical Education. It is recommended that the test be completed by all other students by the end of the sophomore year. Arrangements for making up the test must be made with the Department of Health and Physical Education.

3. ROTC, a total of 6 quarters required of all freshmen and sophomore men citizens of the United States. It is mandatory that this work be accomplished during the first six quarters and cannot be deferred except by petition of the student. For cause this requirement may be waived, entirely or in part, upon approval by the Professor of Military Science and Tactics or Professor of Air Science.

Students who complete the six weeks summer training at the end of their freshman year with the Marine Corps Platoon Leaders Class or with the Aviation Platoon Leaders Class may be exempt from the second year of basic ROTC. Students who are enrolled in one of these programs will take the required ROTC.

Recognized causes and their effects are as follows:

Physical disability as certified by the Health Director—Full Waiver

Equivalent training at another institution—On equivalent basis

Prior federal active military service on full-time basis—For credit required in form of a discharge or its equivalent.

Less than six months—None

Six months but less than 12 months—3 quarters

12 months or more—Full waiver

Two quarters of Air Science 110, Air Force Band, may be substituted for the drill of Air Science or Military Science 103 and 203.
16—ORGANIZATION

(4) Freshman Composition, English 101-102-103, 3 quarters (9 credits). All freshmen students must register for this course unless exempted by the department. Any student who has not completed the requirement in Freshman Composition must remain registered in this course until the requirement is completed. Students registering for the first time take a placement examination; those who fail to demonstrate an acceptable college standard must take English 001 without credit before enrolling in English 101. Students who receive "A" in English 102 may substitute English 201 for 103.

Candidates for the advanced professional degree, Bachelor of Laws, who are graduates of an accredited college or university may be excused upon application, of not to exceed 3 quarter credits of English composition.

GROUP REQUIREMENTS. All candidates for the bachelor's degree 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 sub-groups listed for groups I, II and III.

Group I. Astronomy (Gen. 100), Biological Science (Gen. 131, 132); Botany, Chemistry, Geology, Mathematics, Microbiology, Physics, Zoology.

Group II. Anthropology, Economics, Geography, History, Political Science, Sociology.

Group III. Art (231-232-233 only), English (literature courses only), Foreign Languages (211, 212, and other literature courses only), part or all of general 151-152-153, Music (134 only), Philosophy, Psychology, Religion.

In the School of Forestry, Group II requirements may be partially satisfied by 5 credits in Forestry 421, and Group III is partially satisfied by 5 credits in Speech.

In the School of Law, students admitted as transfers from other schools with three or more years of pre-legal work from such schools shall be exempted from the group requirements.

Elementary teachers may fulfill Group I requirements with 12 credits from General 125-126-127 SCIENCE FOR ELEMENTARY TEACHERS and Mathematics 130 and 220, THEORY OF ARITHMETIC and INTUITIVE GEOMETRY.

FOREIGN LANGUAGE REQUIREMENT. For the degree of Bachelor of Arts in the College of Arts and Sciences, Bachelor of Arts in the School of Fine Arts, Bachelor of Arts in Business Administration and Bachelor of Arts in Journalism, a knowledge of either a modern or classical foreign language is required. This requirement may be satisfied by demonstrating a reading knowledge at the level least five quarters in a language, by five quarters (23 to 25 of attainment expected of a student who has passed at credits) in one language at the University, or by three quarters or equivalent in each of two foreign languages. A student is allowed credit toward the fulfillment of the language requirement for high school languages according to the level of attainment on a required placement examination which also indicates the level of the course in which he may continue in the University. Foreign Language placement and reading examinations are given and certified by the Department of Foreign Languages.

Arrangements for reading examinations must be made by the end of the fourth week of any quarter. Such examinations must be taken at least two weeks before final grades for the quarter are due.

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. Extension credits earned on campus count towards residence requirements, but correspondence credits do not.

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 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. 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 3.5 for all credits registered for in his entire record as well as in his 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 his major field. A student who transfers credits earned elsewhere to the 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.

In the School of Law, the index requirements in (1) and (2) are computed on Law credits only, and do not include the undergraduate record.

SUMMER SESSION. The Summer Session consists of two five-week terms and a concurrent ten-week term. Students may attend either five-week term or the full ten-week session. The 1965 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 through August 20.

Regular University students may accelerate their programs by taking Summer classes. A full quarter of regular classes is available in most departments and schools.

Thirty weeks, including one full 10-week quarter, will satisfy the residence requirements for the Master's degree.

Courses will be offered in all of the basic Arts and Sciences, as well as in the professional areas of Business Administration, Education, and Fine Arts. Both graduate and undergraduate work is offered in most of these areas.

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

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.

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 completed.

Full information regarding the Summer Session may be obtained from the Summer Session office, Liberal Arts 101, or from the individual department or school of instruction.

THE GRADUATE SCHOOL

The following advanced degrees are conferred by the University:

Master of Arts—Major in Anthropology, Botany, Chemistry, Economics, English, French, Geography, Geology, German, Health & Physical Education, History, Latin, Mathematics, Microbiology, Philosophy, Physics, Political Science, Psychology, Sociology, Spanish, Speech and Zoology.

Master of Science—Major in Botany, Chemistry, Geology, Health & Physical Education, Mathematics, Microbiology, Physics and Zoology.

Master of Arts in: Art, Education, Drama, Guidance and Counseling, Journalism, Teaching (Majors in Biological Sciences and Mathematics).

Master of Science in: Business Administration, Forest Conservation, Forestry, Pharmacy, Teaching (Majors in Biological Sciences and Mathematics), Wildlife Management, Wildlife Technology.

Master of Education

Master of Forestry

Master of Music—Major in Applied Music, Composition, Music Education

Doctor of Philosophy—Chemistry, Forestry and Plant Science, Geology, History, Microbiology, Psychology, Zoology.

Doctor of Education

GENERAL REGULATIONS

Requirements relating to graduate work and the award of graduate degrees are administered in the Graduate School. Actions pertaining to admission to graduate standing and to candidacy for graduate degrees are subject to review and approval of the Dean of the Graduate School. Special requirements for particular programs are listed in the curriculum statements of the schools and departments.

ADMISSION TO THE GRADUATE SCHOOL. A student who is a graduate of an accredited college or university may apply for admission to the Graduate School. The undergraduate preparation must be equivalent to the general requirements for the Bachelor’s degree at Montana State University.

To apply for admission, a student must submit a properly completed and official transcript of all previous college work. Three letters of recommendation from persons qualified to judge the applicant’s professional potentials must be submitted in support of applications for admission and for graduate assistantships or fellowships. Application forms may be secured from the Dean of the Graduate School.

The applicant should have completed an undergraduate major in the field selected for graduate study or in a field acceptable to the staff of the major department. For special requirements consult curricula of the departments or schools. Students who hold a Bachelor's degree and who have completed 24 credit hours in Education may be admitted to graduate study in the School of Education.

Full graduate standing will be granted to students working toward an advanced degree whose applications present clear promise of satisfactory graduate work, with particular reference to the amount and level of performance in prior academic preparation, possession of a Bachelor's degree from an accredited institution, and satisfactory recommendations.

Provisional graduate standing may be granted to a student whose application shows reasonable prospect for effective graduate work, but whose record reveals substantial deficiencies in the amount or quality of performance in prior academic work, doubtful command of language, negative recommendations, or other uncertain factors. After one quarter or more of satisfactory graduate work a student with provisional graduate status may be advanced to full graduate standing upon recommendation of the major department or school and approval by the Dean of the Graduate School.

Students admitted to the University on probation are not admitted to the Graduate School. With special permission, they may, without receiving graduate credit, take courses to demonstrate capacity for work in a graduate program, or to rectify deficiencies in prior preparation.

An undergraduate of senior standing in Montana State University who needs no more than nine quarter credits to complete requirements for the Bachelor’s degree may be admitted to the Graduate School.

Members of the faculty of Montana State University above the rank of instructor may not become candidates for degrees from this University. This stipulation does not apply to staff of the Reserve Officers Training Corps who are on courtesy appointment to the faculty; nor does it prevent members of the faculty from taking advanced courses for credit to be transferred to another institution.

GRADUATE ASSISTANTSHIPS AND FELLOWSHIPS are available in most schools and departments and carry stipends currently ranging from $1,600 to $2,000. They require up to fifteen hours per week of laboratory or teaching assistance, and allow the holder to carry up to twelve credits per quarter. Most fees, including the non-resident fees are remitted. In addition, other fellowships, scholarships, assistantships, and other employment opportunities are available in many departments and schools of the University.

GRADUATE RECORD EXAMINATION. The following schools and departments may require entering graduate students to take the Graduate Record Examination not later than the first quarter of graduate residence: Botany & Microbiology, Business Administration, Chemistry, Economics, Education, English, Foreign Languages, Geography, Geology, Health & Physical Education, History, Journalism, Mathematics, Music, Philosophy, Physics, Political Science, Psychology, Speech, Wildlife Technology, and Zoology.

Registration for the Graduate Record Examination is accomplished by payment of the examination fee at the Business Office on or before the second Friday of the quarter in which the examination will be taken. The fee receipt card retained by the Business Office must show the major field or advanced test in which the registrant is to be examined. The registrant’s copy of the examination will be ordered from this Business Office record. The registrant must present his receipt stub for admission to the examination, which will be administered at an announced time and place. The examination may be expected at the end of the fifth or sixth week of the autumn quarter and at the end of the fourth week of the summer session.

GRADES. An average of “B” must be maintained in all courses taken for graduate credit. Courses in which grades below “C” have been received are not accepted for degree requirements but grades in all courses taken for graduate credit will be included in grade-point computations. A maximum of eight credits of work with grades less than “B” may be repeated with approval by the Graduate Council.

COURSE LOAD. Fifteen credits of graduate work in a quarter constitutes the usual graduate registration. The maximum credit load applied toward any degree in a five-week summer term is nine credits and in the full summer session the maximum is 16 credits. Graduate assistants carry a reduced credit load of not more than 12 hours in a quarter.

REGISTRATION. At the time of registration for each quarter the student's program must be submitted to the
office of Graduate Dean for review as to courses to be taken for graduate credit.

EXTENSION AND CORRESPONDENCE COURSES. A maximum of 15 credits earned in extension courses taught by members of the faculty of Montana State University may be accepted toward a graduate degree. Such courses must have been approved for graduate credit by the Graduate Council. One-third of the residence requirements for the Master's degree may be met by satisfactory completion of fifteen credits in approved extension courses.

Correspondence courses will not be accepted for graduate credit.

THE MASTER'S DEGREES

The following requirements pertain to all Master's degrees unless specific exceptions or additional requirements are indicated in the curriculum statements of particular schools or departments.

The candidate for a Master's degree must present evidence of intensive study and investigation in his field of specialization. At least 45 credits of graduate work must be presented, and at least 30 of these credits, including credit for the thesis or professional paper, must be in the student's major department or school. With consent of the graduate adviser and of the Dean of the Graduate School, as much as 15 credits of graduate work may be offered in studies outside the major department or school. Proficient use of the English language is required of all candidates for Master's degrees.

 Residence. The minimum residence requirement for the Master's degree is enrollment for 30 weeks, including at least one full 10-week quarter.

To earn a full quarter of residence for the Master's degree the student must complete not less than five graduate credits of work in any given quarter. Students transferring from Montana State College who have completed at least one quarter of graduate study in residence at that institution will be required to fulfill only two-thirds of the minimum residence requirement, including one full 10-week quarter.

Time Limit. All requirements for the Master's degree must be completed within a period of eight years, except that a maximum of 10 quarter-credits of graduate work in not more than three courses taken prior to the eight-year period may be validated by departmental examination. These credits must have been earned at Montana State University or at another institution of accepted standing. All such validations must be reported to the Dean of the Graduate School before the student is admitted to candidacy.

Transfer of Credit. A student may transfer up to 12 graduate course credits toward fulfillment of requirements for the Master's degree if such transfer is recommended by the school dean or department chairman. Residence requirements for the Master's degree may not be met by transfer except by students from Montana State College, who may transfer a maximum of 15 credits and 10 weeks of residence, on recommendation of the graduate adviser.

Admission to Candidacy. A student whose record during the first two quarters of graduate residence is satisfactory, including a B average in courses taken for graduate credit at Montana State University in the major field as well as in all courses attempted, will be admitted to candidacy for the Master's degree. Not later than the second week of the quarter in which the student expects to complete work for the Master's degree, the student must file with the Dean of the Graduate School three copies of an application for admission to candidacy.

Examinations. Each candidate for a Master's degree must pass examinations, which may be oral or written or both, covering his field of graduate study. In addition he will be examined on his thesis by a committee designated in the manner noted below. Examinations must be completed at least one week before the Master's degree is to be granted.

Thesis or Professional Paper. The subject of the thesis or professional paper must be approved by the thesis director. No more than fifteen credits of thesis (course No. 699) may be included in the Master's degree; lesser limits may be specified by individual departments or schools.

By the end of the fifth week of the quarter in which the Master's degree may be conferred the candidate must submit to the Dean of the Graduate School an unbound committee draft of the thesis or professional paper as approved by the thesis director. If approved by the Dean, this committee draft will then be submitted by the candidate to the examining committee for revision prior to final submission and acceptance.

Final acceptance of the thesis or professional paper is subject to approval by an examining committee. This committee will include the thesis director and at least one other member of the faculty of the major department or school nominated by the head of the department or school and appointed by the Dean of the Graduate School. The Dean of the Graduate School will designate at least one faculty member from another department or school to serve as a member of the examining committee, except for students in music with major in applied music or composition, and for the Master of Education degree.

Three unbound copies of the approved thesis or professional paper must be submitted to the Office of the Librarian for technical editing and approval at least ten days before the commencement at which the degree is to be conferred. The candidate will pay the costs of binding, and the thesis or professional paper will be bound by the University Library.

Abstract. The candidate will submit two copies of an abstract of the thesis, approved by the thesis director, to the Dean of the Graduate School. The abstract is limited to 300 words. No abstract is required for professional papers.

Foreign Language Requirement. A reading knowledge of a language other than the student's native language is required of all candidates for the Master of Arts degree in the College of Arts and Sciences and for the Master of Education degree. Candidates for the Master of Science degree in those departments of the College of Arts and Sciences which require a foreign language for the Bachelor's degree must meet this requirement for the Master's degree. The language requirement may be met in any one of the ways outlined in the undergraduate Requirements for Graduation.

SPECIAL PROGRAMS

In addition to the graduate programs offered by individual departments and schools, the following interdisciplinary degree programs are available:

THE MASTER OF ARTS OR MASTER OF SCIENCE IN TEACHING. The degree is designated as a Master of Arts in Teaching, or a Master of Science in Teaching, accord-
ing the teaching major. Majors are presently available in the Biological Sciences and in Mathematics.

In addition to the general requirements for admission to the Graduate School the candidate must have a teaching certificate with an undergraduate major or teaching major in the field in which the graduate degree is sought, and approval by a committee composed of two staff members from the major field and one staff member from the School of Education. This committee, appointed by the Dean of the Graduate School, will advise the student in the program of study. For the major in Biological Sciences it will comprise one member from Botany and Microbiology, one from Zoology and one from Education; for the major in Mathematics it will comprise two members from Mathematics and one from Education.

Specific requirements for the degree include three options:

A. Forty-five graduate credits with a maximum of 17 outside the major field, and with a recommendation that 10 of these 17 credits be in allied fields, 6-9 credits in research and thesis, and final oral examination (written examination may be required).

B. Fifty-four graduate credits including a minimum of 35 in the major field, with a recommendation of 10 in allied fields, 9 credits electives, and final oral and written comprehensive examinations.

C. Sixty credits including a minimum of 35 graduate credits in the major field, with a recommendation of 10 in allied fields, and final oral and written comprehensive examinations. Candidates teaching a science in a secondary school, who lack required work in the sciences, may take 15 credits in lower division science courses to be included in the 60 credits for this option.

THE DOCTOR OF PHILOSOPHY DEGREE

RESIDENCE. At least three full academic years of acceptable graduate study are normally necessary to complete requirements for the degree of Doctor of Philosophy.

A minimum of five quarters, three of which must be consecutive and prior to admission to candidacy, must be spent in graduate residence at Montana State University. To earn a full quarter of residence, the student must complete not less than 10 approved credits in any given quarter.

With prior approval of the department and the Dean of the Graduate School, a student admitted to candidacy may register for and receive residence credit for research done in absentia for the dissertation.

TRANSFER OF CREDIT. Credit for satisfactory graduate study may be transferred from an accepted graduate institution and applied toward the fulfillment of requirements for the Doctor's degree, but only after one quarter in residence at Montana State University and after the demonstration of satisfactory performance in graduate courses taken at Montana State University.

MAJOR AND MINOR AREAS. A student normally will spend two-thirds of his time in a major area of study. Work on the dissertation will be considered part of the work in the student's major area. The other third may be devoted to work in one or more minor fields, if such work is approved by the major department.

FOREIGN LANGUAGES. A reading knowledge of at least two languages other than the student's native language is required to be established by examinations. The major department, with approval of the Dean of the Graduate School, will determine the languages that are acceptable. The Foreign Language Department will administer the examinations on materials approved by the major department. Proficient use of the English language is required of all candidates for doctoral degrees.

COMPREHENSIVE EXAMINATIONS. Prior to admission to candidacy the student must pass examinations covering the major field of study. These examinations may be oral or written, or both, at the discretion of the department. Major area requirements, if any, and foreign language requirements must have been completed before the comprehensive examinations may be taken.

ADMISSION TO CANDIDACY. At least two weeks before the comprehensive examinations, the student must file a formal application for candidacy for the Doctor's degree. Upon successful completion of the comprehensive examinations and, on recommendation of the department and approval of the Dean of the Graduate School, the student will be advanced to candidacy.

TIME LIMIT. All requirements for the degree must be completed within five years from the date of admission to candidacy.

DISSERTATION. The candidate must submit a dissertation which demonstrates competency in independent research. The dissertation must be an original contribution to knowledge; it must be presented in acceptable literary form and be of a quality to warrant eventual publication. Individual departments may, at their discretion, require publication.

The candidate will submit three copies of a committee draft of the dissertation and of a dissertation abstract to the Dean of the Graduate School at least three weeks before the date of the final oral examination. The abstract is limited to 600 words.

If the candidate wishes, he may apply for a copyright. Publication on microfilm does not preclude other forms of publication.

Two copies of the approved dissertation and abstract will be submitted unbound to the Office of the Librarian for technical editing and approval, not later than ten days before the commencement at which the degree is to be conferred. The candidate will sign the necessary publication agreement; this agreement may contain stipulations regarding time and circumstances for release of the dissertation. The candidate will pay the cost of binding and of microfilm publication.

Upon the award of the doctorate the University will microfilm the dissertation and bind one copy for deposit in the University Library. A positive print of each microfilmed dissertation will be sent to the Library of Congress to be entered in its catalog, and the abstract will be published in Dissertation Abstracts.

FINAL EXAMINATION. A final oral examination dealing primarily with the dissertation and its relationship to the candidate's fields of study will be conducted by an examining committee. This committee will include the dissertation director, at least one other member of the faculty of the major department or school and one faculty member from another department or school recommended by the head of the major department and appointed by the Dean of the Graduate School. The Dean of the Graduate School will designate at least one other faculty member from another department or school to serve as a member of the examining committee. The examination will be given not later than three weeks before the commencement at which the degree is to be conferred. The examination will be announced by the Dean of the Graduate School one week ahead of its scheduled time and will be open to all members of the faculty.

THE DEGREE OF DOCTOR OF EDUCATION

ADMISSION. The student must receive full admission to the Graduate School. In addition, he must have a Master's degree from an accredited institution and must present evidence of successful teaching or administrative experience.

RESIDENCE. A minimum of nine quarters of resident graduate work beyond the Bachelor's degree is required. Forty-five credits beyond the Master's level, exclusive of the doctoral dissertation, must be taken at Montana State Uni-
university. Thirty of the last forty-five credits must be taken in continuous residence at Montana State University during the three consecutive quarters of the regular academic year.

To earn a full quarter of residence, the student must complete not less than ten graduate credits in any given quarter.

With prior approval of the School of Education and the Dean of the Graduate School, a student admitted to candidacy may register for and receive up to one quarter of residence credit for research done in absentia for the dissertation.

COURSE REQUIREMENTS, DISTRIBUTION, AND QUALITY OF WORK. The candidate will submit a minimum of 135 quarter credits of graduate work including 120 credits of approved course work, such work to be exclusive of the doctoral dissertation. For the Ed.D. degree a minimum of 60 credits of graduate work in Education is required. These sixty credits must include the following courses: Methods of Educational Research, Educational Statistics, Philosophy of Education and, if not taken previously, at least one course in each of the following areas: Guidance, History of Education and Educational Measurement. In addition, the student must offer 15 credits in one field and 9 in each of two other fields selected from the following: Administration and Supervision, Classroom Methods, Curriculum, Educational Psychology, Elementary Education, Guidance, Higher Education, History and Philosophy of Education and Educational Psychology, Sociology, Music, and Secondary Education.

A minimum of 40 credits of graduate work in cognate areas is required. The distribution of this work will be determined by advisement. A grade average of "B" will be required for resident work at Montana State University.

No work of "C" grade will be accepted in transfer from other institutions and no extension credit above the Master's level will be accepted.

COMPREHENSIVE EXAMINATIONS. After 100 credits of approved graduate course work (including work on the Master's degree) have been completed, the student must pass examinations on his selected fields in Education. These examinations may be oral or written or both.

ADMISSION TO CANDIDACY. At least two weeks before the comprehensive examinations, the student must file formal application for candidacy for the Doctor's degree. Upon successful completion of the comprehensive examinations, and on recommendation of the School of Education and approval of the Dean of the Graduate School, the student will be advanced to candidacy.

TIME LIMIT. Sixty of the total graduate credits of course work (exclusive of the Doctoral dissertation) offered for the Doctorate must have been completed within eight years preceding the granting of the degree.

DISSERTATION. The candidate must submit a dissertation which shows evidence of competence in independent investigation. The dissertation may be a mature evaluation of existing knowledge or a contribution to knowledge. In either case it must show mastery of related literature and be written in creditable literary form. Fifteen to thirty credits may be allowed for the dissertation.

The candidate will submit three copies of a committee draft of the dissertation and of a dissertation abstract to the Dean of the Graduate School at least three weeks before the date of the final oral examination. The dissertation abstract is limited to 600 words. Other dissertation provisions under the Doctor of Philosophy degree above, apply.

FINAL EXAMINATION. A final oral examination dealing primarily with the dissertation and its relationship to the candidate's fields of study, will be conducted by a committee recommended by the School of Education and designated by the Dean of the Graduate School. This examination will be announced by the Dean of the Graduate School one week ahead of its scheduled time and will be open to all members of the faculty.

FINANCIAL OBLIGATIONS

SUMMARY OF EXPENSES. This does not include fees for special purposes such as Applied Music and Forestry. Autumn quarter fees include a $10.00 deposit which is refundable, less charges.

Married students living in college-operated family housing pay rental rates varying from $32.00 to $95.00 a month depending on the size and type of apartment.

Board and room rates will probably hold for the year. However, in the event of material increases in costs, rates may be increased accordingly.

STUDENT FEES. The following is a detailed schedule of quarterly fees authorized for the college year 1963-64 in all schools and departments except where otherwise specified. For the Law School, which is on a semester plan, the semester fees will be 50% above the quarterly fees. Fees are subject to modification by action of the State Board of Education.

Registration is not complete until all fee charges are paid, or arrangements made, in the Office of the Controller, for extension of the date when due.

ALL STUDENTS REGISTERED FOR SEVEN OR MORE CREDITS:

<table>
<thead>
<tr>
<th>Fees</th>
<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
<th>Total For Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montana Residents</td>
<td>$100.00</td>
<td>$99.00</td>
<td>$99.00</td>
<td>$307.00</td>
</tr>
<tr>
<td>Res. Halls Board</td>
<td>176.00</td>
<td>154.00</td>
<td>154.00</td>
<td>484.00</td>
</tr>
<tr>
<td>Room (Double)</td>
<td>68.00</td>
<td>68.00</td>
<td>68.00</td>
<td>204.00</td>
</tr>
<tr>
<td>Res. Halls Club Fee</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Bks., Supplies (Est.)</td>
<td>40.00</td>
<td>20.00</td>
<td>20.00</td>
<td>80.00</td>
</tr>
<tr>
<td>Total for Mont. Res.</td>
<td>$350.00</td>
<td>$343.00</td>
<td>$343.00</td>
<td>$1,036.00</td>
</tr>
<tr>
<td>Students not residents of Mont., Add:</td>
<td>112.50</td>
<td>112.50</td>
<td>112.50</td>
<td>337.50</td>
</tr>
<tr>
<td>Total for Non-res.</td>
<td>$507.50</td>
<td>$455.50</td>
<td>$455.50</td>
<td>$1,418.50</td>
</tr>
</tbody>
</table>

NON-RESIDENT STUDENTS are those who have not resided in Montana for at least 12 months immediately prior to entering Montana State University and whose parents are not residents of the state. Non-residents may not gain residence while in attendance at any institution of learning. For more information, write to the Registrar.

Registration is not complete until all fee charges are paid, or arrangements made, in the Office of the Controller, for extension of the date when due.

ALL STUDENTS REGISTERED FOR SEVEN OR MORE CREDITS:

<table>
<thead>
<tr>
<th>Fees</th>
<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
<th>Total For Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>$10.00</td>
<td>(Many Honor Scholarships entitle the holder to a waiver of the Registration and Incidental fees)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incidental</td>
<td>40.00</td>
<td>(for laboratory supplies in all courses, locker fees, gymnasium towel service, diploma, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building</td>
<td>5.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student M.S.U. Building</td>
<td>15.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Union Building</td>
<td>4.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Service</td>
<td>10.00</td>
<td>(Required of all students enrolled for class work.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$99.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General deposit (charges for loss, breakage, and fines deducted) | 10.00 |

This deposit, less charges, is refundable after graduation or when schooling is discontinued. Additional amounts will be billed if the balance becomes low.

Total, first quarter in attendance | $109.00 |

Non-residents (out-of-state) pay, in addition to the fees listed above, per quarter ($90.00 plus $22.50 student M.S.U. Building fee) | $112.50 |

If registered for less than 7 credits, the Non-resident fee is based on a charge of $13.00 per credit, plus an $11.25 student M.S.U. Building fee.

Refer to the Forestry and Music sections for information on additional forestry and music fees.
WAR SERVICE FEE EXEMPTIONS. The registration and incidental fees are waived for honorably discharged persons who served with 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. Students must apply for these war service exemptions, at which time the original or certified copy of discharge must be submitted for identification purpose.

LIMITED REGISTRANTS (students registered for less than seven credits): Registration Fee $10.00; Incidental Fee $20.00; Student Activity $15.00; Student Union Building $2.00; Health Service $10.00; Student Activity $15.00 (optional). Non-residents pay (in addition to other fees stated here) $15.00 per credit, plus $11.25 additional M.S.U. Student Building fee. Students who are enrolled as regular students, who wish to drop to limited registrants, see statement under regular refund schedule.

LISTENERS (students who enroll for courses without credit) pay the same fees as students enrolled for credit. This applies to regularly registered students only.

GRADUATE STUDENTS pay the same fees as undergraduate students except that graduate students whose programs require expensive equipment, laboratory supplies and additional books may be required to pay a graduate laboratory-incidental fee not to exceed $50.00 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 by students who did not register during the period designated for registration, unless their late registration was due to the fault of the University. The fee is also payable by students who register during the prescribed registration period except for payment of fees on securing a deferment. If a bank declines payment of a personal student check and returns it to the University, and such action is due to fault of the student, the fee shall be charged from the date of the check tendered by the student to the University. ($5.00 for the first day, plus $2.00 per day thereafter to a maximum of $15.00).

DEFERMENT. In case of an emergency, the Controller is authorized to grant a limited extension of time on payment of fees. If approved, there will be a charge of $1.00 for processing the deferment. Failure to meet payments as agreed, without an authorized extension of the deferment, will result in a penalty of $1.00 per day to a maximum of $5.00.

CHANGE OF ENROLLMENT. First week no charge; thereafter $2.00.

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

REMOVAL OF INCOMPLETE. $2.00 per course.

TRANSCRIPT OF RECORD. $1.00 each after the first which is free of charge.

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

CORRESPONDENCE AND SUMMER STUDY. Fees are listed in the Correspondence Study Catalog, the Summer Session Bulletin and the Biological Station Bulletin, respectively.

REFUNDS. All fees, except the $10.00 Registration fee, are refunded to students who withdraw before the beginning of classes. No fee refunds are made after the fourth week of instruction (except Music). Students who withdraw after the beginning of classes but before the end of the fourth week will be refunded according to the refund schedule published below.

Applied Music refund is based on a charge of $1.75 per ½ hour lesson for the number of weeks elapsed since the beginning of the quarter.

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.

Each quarter of enrollment is divided into three periods or weeks. The regular refund schedule is as follows:

<table>
<thead>
<tr>
<th>WEEK OF INSTRUCTION</th>
<th>REGULAR STUDENTS</th>
<th>NON-RESIDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Second</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Third</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

After the third week of instruction there shall be no refunds of fees except that in the fourth week of classes, 20% of the non-resident fee will be refunded.

REGULAR STUDENTS WHO DROP TO LIMITED REGISTRANTS

<table>
<thead>
<tr>
<th>REGISTRATION</th>
<th>NONE</th>
<th>NONE</th>
<th>NONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>INCIDENTAL</td>
<td>40%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>BUILDING</td>
<td>50%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>STUDENT M.S.U. BUILDING</td>
<td>50%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>STUDENT UNION BUILDING</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>STUDENT ACTIVITY</td>
<td>100%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>HEALTH SERVICE</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>NON-RESIDENT TUITION</td>
<td>Varies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After the third week of instruction there shall be no refunds of fees except that in the fourth week of classes, 20% of the non-resident fee will be refunded.

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.

STUDENT SERVICES

At Montana State University student services are coordinated through the offices of the Dean and Associate Dean of Students. Satisfactory student growth, socially, emotionally, and educationally, is the purpose of the program. Stu-
dent services concerned with the welfare of students include the counseling center, health service, placement service, student housing, student union, student loans, and undergraduate scholarships.

THE OFFICE OF THE DEAN OF STUDENTS has general supervision over all student welfare. Through personal counseling and group activities, the Deans assist in making opportunities available to students for personal-social success and 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.

THE COUNSELING CENTER has a general function of giving guidance and assistance to students in the following areas: selection of appropriate courses and programs; assessment of abilities and the most efficient, effective application of those abilities to allow for maximum learning in college; diagnoses of difficulties leading to less than maximum performance academically, and the use of remedial procedure where indicated; adjustment through self understanding to the student's friends, home, school, and the community as a whole; selection of appropriate vocational area.

The Counseling Service has a further responsibility to: 1) administer, report, and aid in the interpretation of freshman placement tests and other standardized tests; 2) act as a consultant to University departments and high schools in the establishment of effective testing programs; 3) assist University personnel and welfare groups in their guidance function; 4) assist advisers, upon request, in working with students.

Services of the Counseling Center are available without charge to regularly enrolled students. Charges are made for services to non-students.

THE STUDENT HEALTH SERVICE, financed by a health service fee paid by students each quarter, provides medical care for students during the autumn, winter and spring quarters. The plan was developed through a contractual arrangement between the University and the Western Montana Medical Society. A supplemental, but optional, health care program under Montana Blue Cross is available (see below) to students who wish to extend their protection to periods between quarters and through the summer months.

The services under the Student Health Service Plan are comprehensive and are available at a low cost made possible by group participation and infirmary type facilities. They are available, however, only while the student is enrolled for the autumn, winter, and spring quarters. Preventive care and early treatment of illness are stressed. The cost of an illness that might deprive a student of his education is minimized.

All new students, before enrollment, must have submitted a completed University Health Form signed by a qualified physician. During Orientation Week, patch tests will be given new students at the University Health Center.

The Health Center is open 24 hours a day and is staffed by a director and several registered nurses. They are assisted by local physicians. Laboratory service, x-ray, and limited physical therapy are provided. Polio and other preventive inoculations are provided at cost.

Infirmary beds are used for minor illness at no added charge. Hospitalization in Missoula hospitals is provided under the plan for major medical illness, surgical emergencies, and major trauma. The plan may pay for 15-day hospitalization at $15 per day, and $10 additional cost. Extended hospitalization is provided for under the supplementary Blue Cross plan.

Obstetrical care and non-emergency surgery are not covered. Accidents and illnesses arising from activities contrary to University regulations or due to use of alcohol are not covered. Dependents' care is not provided, nor are medical services for illnesses arising between the autumn, winter and spring quarters. A less extensive plan is in effect during the summer quarter.

Hospitization but not medical services as above authorized is covered outside Missoula, in connection with University activities at any place during the school session.

A student is given free choice of local physicians participating in the plan by requesting authorization. Minor illness should be treated at the dispensary.

Particular services provided by the Health Service, and exclusions, are as specifically mentioned in the agreement between the University and the Western Montana Medical Society, copies of which are available at the Dean of Students office and the Health Center.

The Health Service building also houses the Mental Hygiene Clinic and the Speech Pathology and Audiology Clinic which are operated separately.

THE OPTIONAL BLUE CROSS SUPPLEMENTAL HEALTH PLAN has been worked out through the Faculty-Student Health Committee to make it possible for students to obtain low-cost year-around health care protection during the four or more years they are undergraduates at Montana State University, and to allow married students health care protection for their dependents. Under this plan which costs the single student $8.00 per quarter for the autumn, winter and spring quarters and $4.50 for the summer, the student may protect himself against the costs of illnesses that exceed 15 days per quarter of hospitalization (the limit under the Student Health Service Plan) and illness and accidents occurring between quarters and during the summer months. The married student, under this optional plan, has a further responsibility to: 1) assume the cost of an illness that might deprive his dependents of health care protection for his dependents, who cannot be covered under the University plan, at a cost of $16.95 per quarter for the autumn, winter and spring quarters and $4.50 for the summer; 2) assist University personnel and welfare groups in their guidance function; 4) assist advisers, upon request, in working with students.

Services of the Counseling Center are available without charge to regularly enrolled students. Charges are made for services to non-students.

THE SPEECH AND HEARING CLINIC provides needed services to any student desiring it without charge. These services include detailed diagnostic evaluations, consultation and therapy, and referral to other clinics as individual needs are indicated.

THE PLACEMENT CENTER endeavors to assist university graduates in finding positions suitable to their interests and professional training. These services are available to the graduates of any college, school, or department of the University.

Interview schedulings, employer information, and vacancy listings are available for positions in schools, colleges, business, industry, and government service. The Placement Center also aids the University graduates in later years in finding new positions for which both a degree and experience are required.

University Placement services are provided free of charge to graduates except for a $5.00 fee for compiling credentials. No additional charge is made in subsequent years. All University students are invited to make use of these services. The Placement Center is located in the Liberal Arts building.

STUDENT HOUSING includes seven residence halls, three housing areas for married students, a women's cooperative house, nine fraternity and six sorority houses. Rooms are available also in private homes of Missoula.

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 Dean or Associate Dean of Students. Upperclass women are required to live in women's residence halls or with approved student living groups unless excused as special cases by the Associate Dean of Students. Women students over 25 years of age and married women must have the approval of the Associate Dean of Students to live in the residence halls.

All students who contract to live in the residence halls, do so for the entire academic year, or that portion of it for which they are enrolled.
RESIDENCE HALLS. Application forms and detailed information may be obtained by writing the Admissions Office, Montana State University. An $80 prepayment on board and room must accompany 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 1 for fall quarter, January 4 for winter quarter, and March 28 for spring quarter. Students who live in the residence halls are required to board in the Lodge. See Residence Halls Bulletin for board and room rates.

Social life in the halls is encouraged through resident hall clubs and numerous activities. Adult counselors cooperate with the students in making living in the halls enjoyable and beneficial. A fee of $2 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 in the Lodge for the residents of all halls. Experienced dietitians provide appetizing and nutritionally adequate meals.

All University food and housing operations are conducted on a self-sustaining basis. Land is acquired, buildings are built, and maintenance and operation are financed out of payments for such housing or meals. When costs go up, charges for these services must go up unless the services themselves are to be suffered unduly in quality or quantity. New or additional services which demand additional charges also require additional charges. Such charges are fixed from time to time, effective upon the dates similarly specified.

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

The Women's Cooperative House provides an opportunity for women to gain experience in group living while reducing living expenses by sharing the work of the house. The Cooperative House is under the direction of the student residents. Information may be obtained by writing to the President, Synadelphic House, 601 Daly Avenue, Missoula, Montana.

FRATERNITY AND SORORITY HOUSES. Nine national fraternities and six national sororities maintain their own residences under University supervision. Membership in fraternities and sororities is by invitation, but eligibility for pledging is based on satisfactory scholarship accomplished in high school or the college previously attended; and eligibility for initiation is based on satisfactory academic performance in the University. Sorority houses are under the immediate supervision of resident housemothers, who are appointed with the approval of the Associate Dean of Students.

STUDENT ACTIVITIES CENTERS. The Lodge is the extra-curricular center of student life. It is the home of student social and governmental activities. Every student registered at Montana State University is a member of this program and entitled to use the building. Here students may have meetings, have parties, meet friends, and participate in activities. Facilities in the Lodge include a student organizations center, conference rooms, social center, reading room, coffee shop, lounge, recreation room, and food service. Bowling alleys and a swimming pool are also maintained by the Lodge management.

FINANCIAL AIDS. National Defense, United Student Aid, and Henry Strong loans, as well as loans from University sources are available to qualified students in need of financial aid to complete their college work. Information about these may be obtained from the Office of the Dean of Students.

Many students meet costs of attending the University by part-time work and scholarships. For freemen 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. Students seeking part-time work should register with the Student Placement Bureau. For unusually well qualified freshman students, a Work Scholarship program is maintained. Students applying for Work Scholarships should have a high B or A average in high school. Applications should be addressed to the office of the Dean of Students.

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 by the Dean of Students. Prize awards related to specific departments are awarded by the department concerned.

STANDARDS OF STUDENT CONDUCT

Personal honor and self-discipline play a large part in one's success in the University. A record, built during undergraduate years, for moral integrity and personal honor is as important for future success as academic accomplishment. The policy of the University, therefore, is pointed toward student development along both lines.

This policy begins with the assumption that all students coming to the University have common sense and normal conceptions of honor, morality, integrity and respect for order and the rights of others. It also assumes that all students have a respect for the University and regard their attendance here as a privilege and not a right; that, in a sense, each generation of students feels it has a responsible stewardship and desires to leave for future generations of students a University even better in fame and reputation than the one they have known.

Because of these assumptions it is unnecessary to spell out a long list of restrictions and laws that are essential in a less selective community to protect the rights of the responsible from those who are not.

Every student knows that to be personally honorable he cannot lie, cheat, steal, be destructive of public or private property, participate in fraudulent activity, be guilty of immoral acts or indecency, be inconsiderate of the rights and lives of others or be oblivious to the laws of city, state or nation. Guilt in any of these areas, he knows, is not good citizenship and can result in the withdrawal of his privilege of attending the University.

Consistent with the above, therefore, the University expects all of its students to conform to the usual standards of society and law-abiding citizenship wherever they may be. Every organization affiliated with the University or using its name is expected to conduct all its affairs in a manner creditable to the University. Organizations and individuals will be held to this principle.

In some areas, specific rules have been adopted as guides to student conduct, violations of which are cause for disciplinary action against individuals or groups:

I. USE OF MOTOR VEHICLES of any form on the campus or in the city or county of Missoula for the academic year is denied to the following classifications of undergraduates:

A. Those who have fewer than 40 quarter credits of University work or its equivalent.
B. All other undergraduate students who cannot show an index of 2.0 (C average) on all credits attempted.
C. Minors, who are otherwise qualified, who do not present written permission of their parents for the use of a motor vehicle.

Students living with their parents and commuting to the campus, handicapped students, and those who can qualify as exceptional cases, may petition the Dean of Students for a waiver of A and B above. All students are required to familiarize themselves with the University's published Motor Vehicle Regulations, violations of many of which call for cancellation of the offender's enrollment.
II. GAMBLING. Gambling is not permitted in University buildings or in University approved housing.

III. LIQUOR. The possession or consumption of intoxicating liquor in the following circumstances or places is contrary to University standards:

A. By University students, visitors, or guests (1) when they are under 21 years of age, or (2) with or in the company of such persons under age, or (3) in a drunken or disorderly manner, or with the appearance thereof; and

B. By anyone (1) on the campus, University property, or at University-approved quarters of students, except that University family dwellings and off-campus quarters of students over 21 years of age are governed by separate rules, or (2) at University affairs, including athletic events, or (3) at organized gatherings of students.

IV. ENTERTAINMENT OF GUESTS. Entertainment of guests of the opposite sex in student living quarters is permitted only under circumstances approved by the Dean of Students office.

V. OFF-CAMPUS LIVING. Students living off-campus are expected to abide by the same standards as those living on campus or in University-supervised housing. University approval may be withheld from students for off-campus living if violations occur, or from living quarters where landlords permit conduct contrary to those standards.

VI. STUDENT MARRIAGES. The Montana Statutes on marriage require (a) parents' (or guardian's) consent for men under 21 and women under 18 years of age; (b) a five-day waiting period between the times of application and issuance of the marriage license; (c) a blood test for both parties. Persons residing in the State of Montana who attempt to evade any of these requirements by excursions into neighboring states, run the risk of having the validity of their marriages questioned, conceivably at a later date.

University students are expected to abide by the spirit and intent of the Montana law and, furthermore, must report their marriages to the Dean of Students' Office immediately.

VII. FALSIFICATION OR WILLFUL SUPPRESSION of any information called for on any university form will be grounds for cancellation of registration.

VIII. 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 midnight. 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.

DISCIPLINARY ACTION. When disciplinary action against a student or a student group becomes necessary, it is the responsibility of the Dean and Associate Dean of Students. Such action can be recommended by student councils, committees or boards to which such powers of recommendation have been delegated. However, these actions cannot become final without the approval of the above mentioned Deans. Among those often so recognized are the Executive Board of the Associated Women Students and the various living group councils.

ABSENCES FROM CLASS

DUE TO ILLNESS. Students who are confined to the Infirmary or who report to doctors at the Infirmary may receive excuses directly from the Health Service for the time they have been so confined or detained by the doctors. The Health Service is not authorized to give excuses except in instances where the student has actually used its services. All other excuses must come from the Dean of Students office.

DUE TO EXTRA-CURRICULAR ACTIVITIES. When a student's absence from classes is due to his participation in extra-curricular activities, i.e. athletics, debate, drama, etc., the time of his absence must be reported in advance to the Dean of Students by those in charge of the activity. In all cases students must fill out a leave of absence card obtained from either the Dean of Students office or the person in charge of the activity. This card must be presented to the student's instructors for their signatures before being returned to the Dean of Students office.

DUE TO FIELD TRIPS. At least two weeks in advance of a proposed field trip the instructor in charge should send a memorandum to the Dean of his School or College. The proposed arrangements for and date of the trip as well as the list of the students who will be participating. If the Dean of the school or college approves the trip he will submit the memorandum to the Dean of Students office for final approval. When this is given the staff member in charge will receive the Dean of Students office leave of absence cards which will be distributed to the affected students. Each student is responsible for having his cards signed by his various instructors and returned to the Dean of Students office for filing.

LEAVES OF ABSENCE. A student who is 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 cases of 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 CONTRACTS AND OBLIGATIONS

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."

INDIVIDUAL 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 office of Montana State University, including charges for board and room in fraternity and sorority houses.

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 Auditorium-Field House occupies a ground area approximately the size of a standard city block. Moveable seats, stages, floors, and other equipment make it usable as an auditorium, arena, practice field, etc. There is seat-
ing for over 6,000 for basketball, 4,000 for shows or concerts. Two large lobbies serve for displays and smaller exhibitions. It is used for convocations, commencement exercises, and formal and informal gatherings.

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. Aid to students participating in athletics may be given only in conformity with the regulations of the National Collegiate Athletic Association.

ANNUAL INTERSCHOLASTIC. For more than fifty years Montana State University has held an annual high school track and field meet, 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 and foreign 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, four days a week. 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.

Venture, a literary publication, is also sponsored by the Associated Students.

ORGANIZATIONS

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 entertainment.

The Associated Women Students is an organization made up of all women students in the University. It has responsibilities pertaining to the student life of its members.

Various church groups have active organizations on the University campus and work closely with local church parishes. Three of the groups maintain houses close to the campus for the use of their members.

In addition to several small musical ensembles, there are the following large organizations: The University Choir, Choral Union, Choral Ensembles, Jubil-eers, University Symphony Orchestra, University Symphonette, the University Symphony Band and the Marching Band. 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, costume designing, etc. A series of plays is given throughout the year in Missoula, and occasionally a tour is made of the state.
ORGANIZATION OF INSTRUCTION

For administrative purposes, various courses and curricula are organized within Departments, Schools, or Colleges as shown immediately following. The detailed listing of curricula and courses later in the catalog is alphabetical, and includes combined curricula.

COLLEGE OF ARTS AND SCIENCES
- Biological Sciences
- Botany
- Chemistry
- Economics
- English
- Foreign Languages
- French
- German
- Greek (no major)
- Italian (no major)
- Latin
- Russian (no major)
- Spanish
- Geography
- Geology
- Health and Physical Education
- History
- Home Economics
- Liberal Arts
- Library Service
- Mathematics
- Medical Technology
- Microbiology
- Philosophy
- Physical Sciences
- Physics
- Political Science
- Pre-Medical Sciences
- Psychology
- Reserve Officers Training Corps
- Air Science (no major)
- Military Science
- Secretarial-Home Arts
- Sociology, Anthropology, Social Welfare
- Speech, Speech Pathology and Audiology
- Wildlife Technology
- Zoology

GRADUATE SCHOOL

SCHOOL OF BUSINESS ADMINISTRATION
- Accounting
- Banking and Finance
- Business Teaching
- General Business
- Industrial Organization and Management
- Law-Business
- Marketing
- Secretarial Science

SCHOOL OF EDUCATION
- Administration and Supervision
- Elementary Education
- Guidance and Counseling
- Library Service
- Secondary Education

THE SCHOOL OF FINE ARTS
- Art
- Drama
- Music
- Music Education
- Elementary Teacher Training
- Secondary Teacher Training
- Applied Music
- Organ
- Piano
- String Instruments
- Voice
- Wind Instruments
- Theory or Composition

SCHOOL OF FORESTRY
- Forestry
- Forest Management
- Forest Engineering
- Wood Utilization
- Range Management
- Wildlife Management
- Conservation
- Watershed Management
- Soil and Water Conservation
- Wildlife Conservation
- Range Conservation
- Forest Recreation

SCHOOL OF JOURNALISM
- Advertising
- Community Journalism
- Magazines
- News-Editorial
- Radio-Television

SCHOOL OF LAW

SCHOOL OF PHARMACY

AFFILIATED SCHOOL OF RELIGION (no major)

COURSE NUMBERING SYSTEM

Effective starting with the summer of 1957, all courses are numbered as follows:

- 001-099 Courses below college level. No college credit given.
- 100-199 Freshman courses
- 200-299 Sophomore courses
- 300-399 Junior courses
- 400-499 Senior courses
- 500-699 Graduate courses

In the School of Pharmacy, senior courses (5th year) are numbered 500 to 599.

Courses are listed under headings, FOR UNDERGRADUATES, FOR UNDERGRADUATES AND GRADUATES, or FOR GRADUATES. Courses listed under the first heading may not be taken for graduate credit even if the numbers are in the 300 or 400 series. Courses under the second heading may be taken for graduate credit if the student secures proper authorization from the Graduate School. Courses under the last heading may be taken by graduate students only.

Thesis and independent studies courses may be so listed as to provide for indication of the subject matter on the permanent record, provided the topic is printed in the schedule of classes.

The University reserves the right to withdraw any course for which fewer than five students are enrolled before the opening of the course.

EXPLANATION OF SYMBOLS

In describing courses, symbols and abbreviations are used as follows:

- 106, 104-105, 101-102-103—Course numbers of one, two, and three quarter courses. Unless otherwise stated, 104 is required before 105; 101 before 102, and 102 before 103.
- 511 (431)—Course number changed from 431 to 511. Old numbers shown in parenthesis.
- 1Q, 2Q, or 3Q—Follow course title, indicate length of the course in quarters.

A, W, S, Su—Quarters in which course given: Autumn, Winter, Spring, Summer, respectively.

5—Number following quarters in which course given is the number of credits per quarter.

V or V 1-3—Variable credit course. Variation may be shown by numbers following V.

R or R-8—Course may be taken more than once for credit; total credit allowed shown by number following the R.

(3-4)—Hours of lecture and laboratory each week of the quarter; lecture is first figure, laboratory the second.

(0-3/hr.)—Laboratory course in which the student does 3 hours of laboratory per week for each credit.

a/q—Course may be offered any quarter.

e/y—Course offered even numbered years only.

o/y—Course offered odd numbered years only.

=—Equal, or equivalent course.

c/i—Consent of instructor required.

Prereq—Prerequisite, or what must be taken before taking this course. Unless otherwise stated, numbers appearing after “Prereq” are courses within the particular school or department.

Coreq—Corequisite (taken concurrently)
ANTHROPOLOGY

is a field in social science concerned with the behavior of people in groups, particularly societies and cultures, and the institutional arrangements under which people live. It deals with the pre-literate or primitive backgrounds.

Students may major in Anthropology or a combination of Sociology and Anthropology. The Master of Arts degree is also offered. (See Graduate School.) Anthropology courses stress both archaeology and ethnology and several involve laboratory and field work.

Graduates may engage in teaching, research, or government service. There are many opportunities for scholarships or fellowships in graduate work.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE

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 Anthropology. A foreign language is required. (See foreign language requirement in the general section of the catalog.)

At least 30 of the 50 major credits must be in anthropology courses: Sociology 101, 205, and 303 and Social Welfare 181 must be completed. Remaining courses for the major may be taken in any courses in the department. Religion 304, Geography 355 and Speech 318 may be counted toward a major in Anthropology.

Combined Major: See statement under Sociology.

FOR UNDERGRADUATES

For explanation see Index under “Symbols”

- 152 ELEMENTARY ANTHROPOLOGY 1Q A W S Su 5. Man and his cultures. Culture growth and change.
- 153 SOCIAL ANTHROPOLOGY 1Q A W S Su 3. Institutions as exemplified in primitive religion, economics, political structures, art and music.
- 154 RACE AND MINORITIES 1Q W 3. Problems of assimilation of racial and cultural minorities.
- 252 SOCIAL ORGANIZATION OF PRIMITIVE PEOPLES 1Q S 3. Prereq 152 or 153. The social structure of non-literate peoples: family, kinship structures, kin and local groups and associations, social classes, and political aggregates.

FOR UNDERGRADUATES AND GRADUATES

- 351 PREHISTORIC CULTURES 1Q W 3 o/y Prereq 152 or 153 or =. Prehistoric man and his cultures, up to the Neolithic, in Europe and the Near East.
- 353 ARCHAEOLOGY OF MONTANA 1Q S 3 e/y Prereq 152 or 153 or =. A field course in archaeological sites in Montana and surrounding regions. Students are required to attend a minimum of three field trips in which actual archaeological sites will be excavated, and technical requirements of the excavation will be demonstrated.
- 354 OLD WORLD ARCHAEOLOGY 1Q S 3 o/y Prereq 152 or 153 or =. The origins, development of civilization in the Neolithic Age to the dawn of written history.
- 355 ARCHAEOLOGY OF NORTH AMERICA 1Q W 4 o/y Prereq 152 or 153 or =. The origins, backgrounds and development of pre-Columbian North American peoples and cultures.
- 358 PHYSICAL ANTHROPOLOGY 1Q W 4 e/y Prereq 152 or =. The history, evolution, and present nature of man’s bodily structure. Identification and determination of age and sex, of human osteological materials.
- 360 INDIANS OF THE SOUTHWESTERN UNITED STATES 1Q S 3 o/y Prereq 152 or =. The development of Indian cultures in southwestern United States from the most ancient evidences of man to the present.
- 361 INDIANS OF NORTH AMERICA 1Q A 4 S 3 Su Prereq 152 or 153 or =. The native cultures of North America, north of the Rio Grande.
- 362 INDIANS OF SOUTH AMERICA 1Q W 4 e/y Prereq 152 or 153 or =. The cultures of the Indians of South America.
- 363 PEOPLES OF AFRICA 1Q S 4 o/y, Su 3 Prereq 152 or 153 or =. The aboriginal cultures of Africa.
- 364 PEOPLES OF ASIA 1Q S 4 o/y, Prereq 152 or 153 or =. The peoples and cultures of India, China, Japan, Siberia, and the Near East.
- 365 INDIANS OF MONTANA 1Q W S 3 Prereq 152 or 153 or 10 credits in Social Sciences, and c/l. The history and culture of the Indian tribes of Montana.

366 NORTHWEST ETHNOLOGY Any quarter in which field prerequisites are organized: 1-3 R-15 Prereq 152 or 153 or =. A field course. Indian tribes of Montana and related areas.

371 CULTURE AND PERSONALITY 1Q A 3 e/y Prereq 152 or 153 or =. The role of culture in the formation of personality.

372 CULTURE AND THEORY 1Q A 3 o/y Prereq 152 or 153 or =, and Soc 310. The development of theory and method in cultural anthropology, to the regional and comparative level. Emphasis on sociological, anthropological, and socio-psychological theories in the light of historical anthropology.

380 HISTORICAL LINGUISTICS 1Q S 4 e/y Prereq 152 or 153 or =, and Gen. 360. Some significant theories and the methodological assumptions of selected schools of linguistic theory.

451 ADVANCED PROBLEMS a/q V 1-2 R-6 Prereq 152 or 153 or =, and c/l.

452 MODERN INDIAN PROBLEMS 1Q A 3 Prereq 152 or 153 or =. Social and health problems, legislation, education, and economic conditions of Indians of the United States.

470-471-472 SELECTED TOPICS 3Q A W S V R-6 Prereq 19 credits in Anthropology. Enter any quarter. Selected problems in Anthropology.

480 LINGUISTIC METHODS 1Q S 3 o/y Prereq 152 or 153 or =, and Gen 360 or Spch 119. Phonemic, morphological and semantic analysis of an unwritten language, using a native informant.

FOR GRADUATES

551 RESEARCH a/q V.

599 THESIS a/q V R-10.

ART

is man’s visual means of expression in two and three dimensional form. Creative visual expression has existed since the beginning of man. An art student is concerned with the study of art history, the acquisition of skills to suit his personal needs for expression, and the development of judgment and taste.

A student generally places major emphasis in painting, design, ceramics, or sculpture, although he is expected to work in all areas of art. Personal experience is the basis and point of departure for effective, significant expression. A broad general educational background outside of the art field enlarges the scope of personal experience and awareness of one’s environment, making possible a greater variety of art productivity.

Those interested in study and development beyond the Bachelor of Arts degree may continue in graduate work leading to a Master of Arts degree. Graduate study requires evidence of a high level of proficiency in both studio and academic work prior to acceptance. Specific requirements may be obtained from the Art Department.

Graduates teach in public schools, supervise art programs, teach in colleges, engage in commercial art work or simply work as free lance artists.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN ART

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 Art: 35 or more credits in an electives outside major area. Five credits may be taken in non-art electives. Each candidate must present a one-man exhibition. A foreign language is required.

SPECIAL REQUIREMENTS FOR THE MASTER OF ARTS IN ART

In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Graduate School, candidates must complete 45 credits of graduate work distributed as follows: A minimum of 10 credits in art history and theory (Art 471, 472, 373, 556); a minimum of 15 credits in the area of concentration (Art 440, 440 for painting majors, 530 and 535 for ceramics majors: 320 and 325 for sculpture majors: 323 and 323 for design majors); five to 10 credits on a terminal project and/or thesis (Art 691); a minimum of 10 credits in art electives outside major area. Five credits may be taken in non-art electives. Each candidate must present a one-man exhibition. A foreign language is required.

FOR UNDERGRADUATES

For explanation see Index under “Symbols”

123 DRAWING 3Q A W S 4, Su 2, R-12. V when taught by extension. Objective and expressive drawing, using varied methods and subject matter.

ANTHROPOLOGY, ART—27
125-126 COLOR AND DESIGN 2Q A W S 3, Su 2. Creative design and use of color, theories, methods and problems.

127-128 CRAFTS 2Q Su 2. Enter either 127 or 128. Projects using various materials: (127) wood, mosaic, metal, textile; (128) jewelry, enameling, plastics. Offered for one credit by extension.

129 CERAMICS 2Q A W S Su 2 R-4. Clay projects, building, throwing, firing, and glazing. Offered for one credit by extension.

133-134 PRINTING ARTS 2Q A W S 2. Prereq 8 credits of 123. Enter either quarter. Techniques of various graphic media: (133) etching, woodcut; (134) lithography, silk screen.

135 SCULPTURE 2Q A W S 3 R-6. Prereq 8 credits of 123. Methods and techniques.

139 WATERCOLOR 1Q S 3. Prereq 6 credits of 123, Su 2 Prereq c/l. Offered by extension for 1 credit. Watercolor techniques and expressive use of subject matter.


151 LIFE DRAWING 1Q S 3 R-9 Prereq 8 credits of 123. Expressive drawing from models. Anatomical construction.

160 LETTERING 1Q W 2. Pen and brush lettering and layout.

231-232-233 HISTORY OF ART 3Q A W S 3. Enter any quarter. (231) Ancient. (232) Medieval and Renaissance. (233) 1900 to present. (The 3 quarters offered summer in rotation.)

FOR UNDERGRADUATES AND GRADUATES


307 METHODS OF TEACHING SECONDARY ART 1 Q S 3. Objective methods and techniques.

325 ADVANCED DESIGN 3Q A W V 1-6 R-12 Prereq 125-126. Advanced problems of a specialized nature.

330 ADVANCED CERAMICS 3Q A W S Su V 1-6 R-12 Prereq 4 cr of 129. Advanced problems in ceramic techniques.

334 ADVANCED PRINTING ARTS 3Q A W S Su V 1-6 R-12 Prereq 133-134. Advanced work in printing media.

335 ADVANCED SCULPTURE 3Q A W S Su V 1-6 R-12 Prereq 6 cr of 135. Advanced problems in sculpture media.

340 ADVANCED PAINTING 3Q A W S Su V 1-6 R-12 Prereq 9 cr of 140. Advanced work in painting media.

371 HISTORY OF RENAISSANCE PAINTING 1Q A 3 Prereq c/l. History, theory, aesthetics of Western European painting during the Renaissance.

372 MODERN ART 1Q W 3 Prereq c/l. History of Modern Art from Van Gogh to present day. Includes painting, sculpture, architecture and the minor arts.

373 HISTORY OF AMERICAN PAINTING 1Q S 3 Prereq c/l. American painting and aesthetic theories from the American Age to the present day.

450 SEMINAR 1Q a/q V 1-3 R-6 Prereq c/l. Theories and practices applicable to art as a profession or to the teaching of art.

FOR GRADUATES

533 SPECIAL PROBLEMS 3Q A W S Su V R-18 Prereq c/l. Specialized advanced work in three dimensional media.

540 SPECIAL PROBLEMS 3Q A W S Su V R-18 Prereq c/l. Specialized advanced work in two dimensional media.

550 SPECIAL PROBLEMS 3Q A W S Su V R-18 Prereq c/l. Individual research in art history or art theories.

699 THESIS AND TERMINAL PROJECT a/q V R-15.

BIOLOGICAL SCIENCES

deal with living things. The specific sciences are Bacteriology, Botany and Zoology. Students take courses in each field.

This program provides a basic training in the Biological Sciences. It is designed for those graduates who might wish to teach science and biology in high school. Other than teaching, there are very few opportunities for graduates of this program. It is recommended that those students who might do graduate work other than in education, elect the curriculum in either Bacteriology, Botany, or Zoology.

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: 15 credits in Botany, including Botany 111, 121, 123, 225, 335, 385, 386 and 3 credits from 491, and the remaining credits from two of the three following groups: (1) 331, 332, 333, 334, 335, 337, 339, 421; (2) 341, 343, 345, 349, 376, 377, 379; (3) 350, 361, 362, 365, 386, 386, 389, 464, 465.

BOTANY

is the study of various aspects of plant life, such as form, structure, physiology, reproduction, classification, evolution and distribution. The study of plants provides any educated person with a better understanding of his environment and a greater comprehension of general biological principles. It is a basic science for many professional fields such as forestry, pharmacy, agriculture, horticulture, plant pathology and plant breeding. A degree in botany will also prepare the student to make satisfying use of such leisure time activities as gardening, landscaping and other forms of outdoor recreation.

Employment opportunities for both men and women trained in botany are available in numerous fields. Graduates in botany may find employment as biology teachers in high schools, or in research institutes and government agencies such as the Forest Service, experimental stations, Park Service and plant quarantine, or in industrial establishments such as pharmaceutical, food, drug, paint, seed and oil companies, florists and nurseries. Good students are encouraged to go into graduate work. The better positions in the field require a master's or doctor's degree. For most teaching positions in colleges and universities the doctorate is essential.

Besides offering a Bachelor of Arts degree, the department also offers opportunities for graduate work leading to the Master of Arts and Master of Science degrees in the major areas of botany: Anatomy, Cytology, Ecology, Morphology, Mycology, Physiology, Forest Pathology and Taxonomy. More detailed information can be obtained from the chairman of the department of Botany.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra and chemistry. It is also recommended that the high school preparation include geometry and a modern 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: 15 credits in Botany, including Botany 111, 121, 123, 225, 335, 385, 386 and 3 credits from 491, and the remaining credits from two of the three following groups: (1) 331, 332, 333, 334, 335, 337, 339, 421; (2) 341, 343, 345, 349, 376, 377, 379; (3) 350, 361, 362, 365, 386, 386, 389, 464, 465.
Also required are Zoology 112, 113; Microbiology 200 and Chemistry 101-102, 122 or 121-122-125. Recommended electives: Geography 300, 320, 365; Geology 101-102; Physics 211-212-213 or 221-222-223; Zoology 101-102; Math 101-102. The foreign language requirement listed earlier in the catalog must be satisfied; French or German preferred.

122 GENERAL BOTANY 1 Q W Su 5 (3-4). Prereq 111 or Zoology 111. An introduction to the morphology, reproduction and anatomy of the various plant groups.

123 LOCAL FLORA 1 Q Su 3 (0-6). Prereq 122. The use of a manual for the identification of the flowering plants. Collective study, and group work.

225 PLANT PHYSIOLOGY 1 Q A W 5 (3-4) Prereq 122 and Chemistry 101-102, 160 or 122. The various processes of plants under control conditions in the greenhouse.

329 PROBLEMS IN PLANT PHYSIOLOGY 1 Q a/q V 1-6 (0-3/cr) R-6 Prereq 225 and c/i. Individual or group work consisting of research problems, special readings, discussions, dealing with aspects of plant physiology not taken up in regular courses.

330 PROBLEMS IN PLANT ANATOMY AND CYTOLOGY 1 Q a/q V 1-6 (3-3) Prereq 225 or 222 and c/i. Individual or group work consisting of research problems, special readings, discussions, dealing with aspects of plant anatomy and cytology not taken up in regular courses.

332 PHENOMENOSIS 1 Q W 5 (4) o/y Prereq 225 or 222. The effect of internal and external factors on the growth and forms of organisms.

333 MICROTECHNIQUE 1 Q S V 2-3 (0-3/cr) R-5 Prereq 15 credits in Botany. Methods of preparing microscopic slides, with emphasis on the paraffin method.

337 CYTOLOGY 1 Q W 5 (2-4) o/y Prereq 222, and Chem 101-102, 122, or =. The finer structures of the plant cell in relation to its functions.

341 MORPHOLOGY OF THE THALLOPHYTES 1 Q A e/y 5 (0-10) Prereq 122, 121, 122, or =. The morphology and life histories of the algae and fungi.

342 MORPHOLOGY OF THE BRYOPHYTES AND PTERIDOPHYTES 1 Q c/o 4 (0-4) Prereq 122, 121, 122, or =. The morphology and life histories of the Bryophytes and Pteridophytes.

343 MORPHOLOGY OF THE SPERMATOPHYTES 1 Q S a/y 4 (0-6) Prereq 121-122-125, or =. The morphology and life histories of the Spermophytes.

355 PRINCIPLES OF PLANT ECOLOGY 1 Q S 5 (3-4) Prereq 123-122-225, or =. Plants and plant communities in relation to their physical and biotic environment.

FOR UNDERGRADUATES

FOR GRADUATES

502 HISTORY AND DEVELOPMENT OF BIOLOGICAL CONCEPTS 1 Q 3 (3-0) Prereq 121, 122, 123, or =. The development of biological thinking.
BUSINESS ADMINISTRATION

The School of Business Administration of Montana State University is fully accredited by the American Association of Collegiate Schools of Business and the program of studies is based on two primary divisions: (1) The pre-business administration, and (2) The School of Business Administration. At the undergraduate level the aim of the School of Business Administration is to provide a broad foundation in fundamentals so that the graduate may achieve a place of responsibility in the world of business as well as being a responsible citizen of his community. Since the individual in business is faced with the difficult intellectual task of problem solving, the student is encouraged through course work and the teaching methods employed to evaluate information and points of view, to reason logically, and to reach sound conclusions. In the business courses there is a common emphasis on the over-all management point of view so that the student may achieve an awareness of the many factors that enter into the administration of business affairs and the decision-making processes.

The student may prepare for a variety of jobs by taking a general program of courses or by specializing in such areas as: accounting, finance, marketing, production and personnel management, secretarial work and business administration. Alumni of the School of Business Administration are to be found in professional, executive or managerial positions in many types of business activity. The fields of specialization indicate the many types of jobs which graduates may secure which are involved in the production and distribution of goods, the administration of the financial affairs of business activity, and the rendering of business services. For example, graduates secure positions in banks, investment houses, finance companies, insurance and credit agencies, certified public accounting firms, government, and industrial, wholesaling or retailing establishments. Training is available for those who desire to teach business subjects in secondary schools.

Successful completion of the four-year course in Business Administration leads to the degree of Bachelor of Science in Business Administration as described below. A combined program is offered in Law and Business Administration wherein a student combines his fourth year in business administration with first year law thus acquiring a Bachelor of Science in Business Administration at the end of the four-year period and the Bachelor of Laws at the end of the six-year period. Some students may obtain the degree of Bachelor of Science in Business Administration by following the program listed below.

At the graduate level further opportunity is offered: to broaden the knowledge of the business environment, to do further specialization in a chosen area of concentration, to develop research techniques by carrying on a research project and in obtaining additional education in subject fields outside of business.

PRE-BUSINESS PROGRAM

A student, upon entering the University as a freshman, who desires to be a major in Business Administration registers as a pre-business administration major. In the first two years of study the student completes courses toward meeting 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: Health and Physical Education 101-102-103, 201-202-203; B1OTC (men), English 101-102-103; requirements from Group I including Mathematics 112; requirements from Group II including Economics 201-202-203; requirements from Group III; Speech 111; Business Administration 100 or have a typing proficiency of 25 words per minute as determined by a test administered by the School of Business Administration; Business Administration 201-202, and 250.

ADMISSION AND GRADE POINT REQUIREMENTS. Admission to the School of Business Administration requires junior standing, completion of pre-business requirements, and a minimum of a "C" average on all credits attempted. To continue work in the School of Business Administration, the student must maintain at least a "C" average in all course work in Business Administration and for course work in the area of concentration selected.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION. To achieve the degree of Bachelor of Science in Business Administration, the student must:

a. Complete the general university and pre-business administration requirements.


c. Select before the beginning of the third quarter of the junior year an area of concentration from the following: Accounting, Business Education, Finance, General Business, Management—Option A or Option B, Marketing, Secretarial Science. This selection of an area of concentration is to be indicated by completing the specified form available in the office of the Dean of the School of Business Administration and by filing the completed form in that office.

d. Complete the course work required in the selected area of concentration as indicated by the appropriate curriculum of the area of concentration below.

e. Offer not less than a total of 75 credits in courses in the School of Business Administration. Courses outside the School of Business Administration which may count toward the 75 credit requirement are: all courses offered by the Department of Economics; English 304, History 332, 347; courses listed in the curricula of the areas of concentration.

f. Present not less than 90 credits (including Health and Physical Education) of work taken in departments and schools other than the School of Business Administration.

g. Offer 180 credits plus 6 credits in Health and Physical Education.

h. Attain an average grade of "C" on all credits in business administration courses for which a grade is received and on all credits in the area of concentration selected for which a grade is received.

CURRICULA OF THE AREAS OF CONCENTRATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

ACCOUNTING

Students majoring in accounting must complete the following requirements in addition to the basic requirements of the School of Business Administration:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus. Ad. 303-304—Cost Accounting</td>
<td>6</td>
</tr>
<tr>
<td>Bus. Ad. 401-402—Income Tax</td>
<td>6</td>
</tr>
<tr>
<td>Bus. Ad. 405—Advanced Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Bus. Ad. 412—Accounting Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

It is recommended that students preparing for the public accounting take the following additional courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus. Ad. 305—Governmental Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Bus. Ad. 403—404—Auditing</td>
<td>6</td>
</tr>
<tr>
<td>Bus. Ad. 410—Advanced Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Bus. Ad. 412—Advanced Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Bus. Ad. 413—C.P.A. Review</td>
<td>2</td>
</tr>
</tbody>
</table>

BUSINESS EDUCATION

In addition to the basic requirements of the School of Business Administration on a student concentrating in Business Education must include the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus. Ad. 183—Advanced Typewriting</td>
<td>2</td>
</tr>
<tr>
<td>Bus. Ad. 194—195—196—Stenography</td>
<td>15</td>
</tr>
<tr>
<td>Bus. Ad. 192—Office Machines Practice</td>
<td>3</td>
</tr>
<tr>
<td>Bus. Ad. 195—Beginning Secretarial Practice</td>
<td>3</td>
</tr>
<tr>
<td>Bus. Ad. 198—Beginning Secretarial Practice</td>
<td>2</td>
</tr>
<tr>
<td>Bus. Ad. 196—Records Management</td>
<td>2</td>
</tr>
<tr>
<td>Bus. Ad. 384—Gregg Shorthand Theory for Teachers</td>
<td>3</td>
</tr>
<tr>
<td>Bus. Ad. 380—Methods of Teaching Shorthand, Typewriting and Transcription</td>
<td>2</td>
</tr>
<tr>
<td>Bus. Ad. 381—Methods of Teaching Bookkeeping and Basic Business</td>
<td>2</td>
</tr>
</tbody>
</table>

*Business Education students are not required to take Speech 111, Bus. Ad. 322, or 446, and may substitute 353 for 340.

FINANCE

This program is designed to give a broad understanding of the role of finance in modern industry including private, and public financial institutions, money, credit, and security markets and the technical training necessary in preparation for managerial positions in financial work in large and small scale businesses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus. Ad. 320—Principles of Insurance</td>
<td>cr</td>
</tr>
<tr>
<td>Bus. Ad. 408—Administrative Accounting</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 420—Investments</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 421—Business Cycles</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 429—Banking and Finance Analysis</td>
<td>2</td>
</tr>
<tr>
<td>Econ. 304—Public Finance</td>
<td>2</td>
</tr>
<tr>
<td>Econ. 311—Intermediate Economic Analysis</td>
<td>4</td>
</tr>
</tbody>
</table>

30—BUSINESS ADMINISTRATION
GENERAL BUSINESS

This curriculum is designed to give broad training in the field of business. Requirements for a concentration in General Business are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus. Ad. 408—Administrative Accounting</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 347—Managerial Economics</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 393—Advertising</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 364—Sales Management</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 401—Business Cycles and Business Forecasting</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 441—Personnel Management</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 444—Regulation of Industry</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

MANAGEMENT

Two optional areas of concentration are offered in the field of Management.

Option A. Industrial Organization and Management

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus. Ad. 303-304—Cost Accounting</td>
<td>6</td>
</tr>
<tr>
<td>Bus. Ad. 442—Personnel Management</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 341—Industrial Purchasing and Traffic Management</td>
<td>4</td>
</tr>
<tr>
<td>Econ. 321-322—Labor Economics</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

Option B. Personnel Management and Human Relations

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus. Ad. 408—Administrative Accounting</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 441-442—Personnel Management</td>
<td>8</td>
</tr>
<tr>
<td>Bus. Ad. 444—Regulation of Industry</td>
<td>4</td>
</tr>
<tr>
<td>Psych. 345—Industrial Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Econ. 321-322—Labor Economics</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

MARKETING

The curriculum in Marketing is designed to prepare students in retailing, wholesaling, advertising, sales and sales administration, and market research.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus. Ad. 361—Industrial Marketing</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 302—Retailing</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 363—Advertising</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 406—Administrative Accounting</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 461—Marketing Management</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 462—Pricing Policies and Practices</td>
<td>4</td>
</tr>
<tr>
<td>Bus. Ad. 466—Market Research</td>
<td>4</td>
</tr>
<tr>
<td>Engl. 304—Problems in Composition</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26</strong></td>
</tr>
</tbody>
</table>

SECRETARIAL SCIENCE

In addition to the basic requirements of the School of Business Administration, students concentrating in Secretarial Science must include the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus. Ad. 183—Advanced Typewriting</td>
<td>3</td>
</tr>
<tr>
<td>Bus. Ad. 184-185—Stenography</td>
<td>15</td>
</tr>
<tr>
<td>Bus. Ad. 186—Advanced Stenography</td>
<td>10</td>
</tr>
<tr>
<td>Bus. Ad. 180-181—Advanced Shorthand Transcription</td>
<td>2</td>
</tr>
<tr>
<td>Bus. Ad. 182—Office Machines Practice</td>
<td>2</td>
</tr>
<tr>
<td>Bus. Ad. 193—Beginning Secretarial Practice</td>
<td>2</td>
</tr>
<tr>
<td>Bus. Ad. 194—Records Management</td>
<td>2</td>
</tr>
<tr>
<td>Bus. Ad. 382—Advanced Secretarial Practice</td>
<td>5</td>
</tr>
<tr>
<td>English 304—Problems in Composition</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43</strong></td>
</tr>
</tbody>
</table>

*Secretarial Science students are not required to take Speech 111, Bus. Ad. 322, or 448, and may substitute 383 for 340.

REQUIREMENTS OF THE COMBINED PROGRAMS LEADING TO THE DEGREES OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION AND BACHELOR OF LAWS

A combined curriculum is offered 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. The student must satisfy fully the general university and pre-business administration requirements and during his junior year in the School of Business Administration, must complete Business Administration 300, 322, 340, 360, plus 23 additional credits as electives within the School of Business Administration (287-389-389). The student must earn at least 141 credits outside the School of Law.

Upon completion of the foregoing program with at least a 2.0 index of grade points earned in 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.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS IN BUSINESS ADMINISTRATION

To achieve the degree of Bachelor of Arts in Business Administration, the student must complete the general university and pre-business administration requirements listed above; the business administration core courses listed above; the foreign language requirement; and sufficient electives in Bus. Ad. courses to offer a minimum of 75 credit hours; the university requirements for graduation; and the Law, provided the student is certified as having completed the Bachelor of work of the first year of law to the satisfaction of the will receive the degree of Bachelor of Science in Business Administration, other than Business Administration 357-358-359. The stu­

SPECIAL REQUIREMENTS FOR THE MASTER OF SCIENCE IN BUSINESS ADMINISTRATION

In addition to the general requirements of the Graduate School, the candidate's preparatory work must include introduction to major field of study, problem-solving, independent study, and dissertation. The above courses, but they must be offered in addition to the required forty-five credits.

A maximum of nine credits may be allowed for the required theses, internship credits, and credits for courses in sciences including credits for thesis, are to be completed in one of the following areas: finance, management, and market research.

ACCOUNTING

FOR UNDERGRADUATES

For explanation see Index under "Symbols"

201-202 ELEMENTARY ACCOUNTING 2Q A W S Su 4. The basic principles of accounting and elementary bookkeeping techniques of recording simple business transactions, closing the books, and preparing financial statements. A study of the above courses practices are developed as they apply to individual proprietorships, partnerships, and corporations.

203-204 COST ACCOUNTING 2Q 303 A W 3, 304 S 3 Prereq 202. The basic principles of cost accounting, including the techniques of recording simple business transactions, closing the books, and preparing financial statements. A study of the above courses applications of cost-volume-profit relationship.

305 GOVERNMENTAL ACCOUNTING 1Q A 3 Prereq 262. Accounting principles and problems as applied to state and local governments, and other public institutions.

306-307 INTERMEDIATE ACCOUNTING 2 Q 306 A S 4, 307 A W 4 Prereq 202. The fundamental accounting principles of valuation as applied to the balance sheet, and income determination as related to the operating statement. Problems involving the application of the above theories.

401-402 INCOME TAX 2 Q 401 A W 3, 402 S 3 Prereq 202. The principles, methods, and legal aspects of federal income tax law. (401) The tax statutes as applied to individuals with problems that emphasize personal, business, and estate tax returns, and the special problems of federal estate and gift taxes. Federal and state tax research.

403-404 AUDITING 2Q A W 4 Prereq 307. The general and specialized purpose of auditing; emphasis on generally accepted auditing standards and procedures, the audit program, and analysis of tests of controls. Interpretation of financial statements, internal control and its significance, budgeting, costing of products manufactured and sold, and accounting reports to administrative control. Credit not allowed for this course and 306-307.

408 ADMINISTRATIVE ACCOUNTING 1Q A W 4, 409 S 3 Prereq 308. Open only to non-accounting majors. To give students majoring in finance, marketing, management, or general business an understanding of the significance of accounting data without involvement in the technical techniques. Interpretation of financial statements, internal control and its significance, budgeting, costing of products manufactured and sold, and accounting reports to administrative control. Credit not allowed for this course and 306-307.

409-410 ADVANCED ACCOUNTING 2Q 409 W S 3, 410 S 3 Prereq 306. Enter either quarter. Problems of partnerships, installment sales, consumer credit, receivings, receivings accounting, accounting for estates and trusts. The theory and preparation of consolidated statements in the second quarter.

412 ACCOUNTING THEORY 1Q W S 3 Prereq 307. A critical examination of the assumptions underlying current accounting procedures, with emphasis on the problem of value and its relation to the measurement of periodic income. Readings in current accounting literature.

414 DATA PROCESSING 1Q S 4 Prereq 202. Programming and use of data processing equipment. The use of basic analytical tools, including programming machines and designing systems and procedures. Use of data processing equipment in business decision making.

417 ACCOUNTING INTERNSHIP 1Q W S 3 Prereq C/L. Students are placed with public accounting firms to receive training during the winter quarter. Written reports are required.

C.P.A. REVIEW 1Q S 5 Prereq 304, 404, 410. Primarily for students preparing to take the examinations for the certificate
of Certified Public Accountant. Comprehensive review of questions and problems in practice, theory, and auditing given by the American Institute of Certified Public Accountants.

419 ACCOUNTING SEMINAR 1Q a/q 2.

FOR GRADUATES

502 CONTROLLERSHIP PRINCIPLES AND PRACTICE 1Q A 3 Prereq 410 and approval of the graduate committee. Analysis of the controller's function and the organization of the controller's department. The controller's place in management team and the role he plays in the solution of management problems.

503 CONTEMPORARY ACCOUNTING THOUGHT AND PRACTICE 1Q W 3 Prereq 410 and approval of the graduate committee. Modern accounting theories and practice. The development of accounting thought since 1900 and the social significance.

504 THEORY OF INCOME DETERMINATION 1Q S 3 Prereq 410 and approval of the graduate committee. The theories underlying the determination of the level of business income, the factors influencing net income; the components and their application in formulating investment policies for individuals and institutions. Current analytical techniques used in determining the value of securities.

505 CURRENT PROBLEMS IN INTERPRETATION AND FORECASTING; CONSIDERATION OF POLICIES FOR BUSINESS AND INDIVIDUAL RETIREMENT PROGRAMS. 1Q W. Prereq 410. Analysis of the influence of the money supply, bank reserves, institutional portfolio policies, treasury cash balances and refunding operations, and the changing needs and instruments of corporate and personal finance. Designed to develop in the student an ability to analyze and appraise current money market developments.

420 BUSINESS CYCLES AND BUSINESS FORECASTING 1Q W 4 Prereq Econ 203. History, measurement, and analysis of fluctuations in business activity; factors influencing employment, production, prices and national income; problems in interpretation and forecasting; consideration of policies intended to stabilize business conditions.

421 MORTGAGE BANKING 1Q W 2 Prereq 324. The organization and operation of mortgage lenders; emphasis on mortgage insurance and related governmental, in the urban and rural mortgage banking fields.

424 MONEY MARKETS AND FISCAL POLICY 1Q S 4 Prereq 423. The supply and demand for funds in the short-term and long-term money markets; Analysis of the influence of the money supply, bank reserves, institutional portfolio policies, treasury cash balances and refunding operations, and the changing needs and instruments of corporate and personal finance. Designed to develop in the student an ability to analyze and appraise current money market developments.

429 BANKING AND FINANCE SEMINAR 1Q a/q 2.

FOR GRADUATES

500 THEORY AND MANAGEMENT OF CENTRAL BANKING 1Q A 3. The functions and operation of central banking in the commercial banking system. The influence of central banking operations on conditions in the money market and on the general level of business activity.

501 PROBLEMS OF CORPORATE FINANCIAL MANAGEMENT 1Q S 3 Prereq 422. Problems associated with corporate financing of current and long-term operations. The nature of securities and money markets and their relationship to corporate financing. Federal legislation affecting the flow of funds to business enterprises. Case problems and readings in current literature will be used extensively.

502 SECURITY ANALYSIS 1Q S 3 Prereq 501. Principles and techniques. Technical preparation for security analysis work with financial organizations (banks, insurance companies, trust institutions, investment companies, investment banking firms, security dealers and brokers, and others).

503 RESEARCH 1 Q a/q V R-6. Special research problems.

698 THESIS 1 Q a/q V R-9.

699 THESIS 1 Q a/q V R-9.

BUSINESS LAW

FOR UNDERGRADUATES

357-358 BUSINESS LAW 2Q 3 357 A W, 358 W S (357) Introduction to law, contracts, agency, trusts of personal property, bailment, (358) Sales, partnerships, corporations, other business forms, escheat, the nature of negotiable instruments, and types of negotiable instruments. Students taking the combined 6-year curriculum in Business Administration and Law are not eligible to take these courses.

359 C.P.A. LAW REVIEW 1Q S 3 Prereq 357-358. Primarily for accountants intending to take the CPA examinations, but open to other students examining business content. Notes for the first-year business administration curriculum. Course examinations will be used extensively.

360 BUSINESS CYCLES 1Q W 3 Prereq 359. The basic facts with which a layman should be acquainted. The nature of securities and money markets and their relationship to corporate financing. Federal legislation affecting the flow of funds to business enterprises. Case problems and readings in current literature will be used extensively.

361 THEORIES OF FAMILY LAW 1Q W 3 Prereq 359. Principles and techniques. Technical preparation for legal analysis and research. Designed to develop in the student an ability to analyze and appraise current money market developments.

362 PERSONAL INVESTMENTS 1Q 2 Su. Savings accounts, purchasing a home, purchasing insurance, securities, investment trusts. The basic facts with which a layman should be acquainted. Not open to Business Administration majors. Available as cognate graduate credit for Education degrees.

FOR UNDERGRADUATES AND GRADUATES

322 BUSINESS FINANCE 1Q A W S 4, 3 Prereq Econ 301. Formulation of business and personal investment policies for the individual, organization; sources of financing and the administration of income; failure and reorganization.

323 COMMERCIAL BANKING 1Q W 4 Prereq Econ 301. Liquidity, loan and investment policy, loan administration, interbank borrowing, bank operating costs, bank earnings, and relations with customers, government, and the public.

324 REAL ESTATE 1Q A 4, 3 Prereq Econ 301. Understanding real estate value; the market; real estate law and the mechanics of buying and selling; property management and landlord-tenant relations; mortgage financing and zoning for city growth; taxation; the role of government in financing.

330 PRINCIPLES OF INSURANCE 1Q A W S Su 3 Prereq Econ 203. Basic risk analysis; introduction to fire, casualty, life and health coverages; business and personal insurance needs; company organizations and industry practices; the liability peril; automobile insurance laws; claims procedure; government regulation.

331 LIFE AND HEALTH INSURANCE 1Q A W S 3 Prereq 330. Analysis of individual and group contracts; human life values and insurance needs; estate planning and the impact of taxation; business organizations; mortgage agreements and insurance; pensions and annuities for business and individual retirement programs.

332 PROPERTY AND CASUALTY INSURANCE 1Q S 3 Prereq 330. Concentrated analysis of coverages; insurance management problems facing specific types of business and personal risks; multiple-line policies; legal interpretation and analysis; practical case problems in liability and direct loss situations.

333 INVESTMENTS 1Q S 4 Prereq Econ 301. Investment principles and their application in formulating investment policies for individuals and institutions. Current analytical techniques used in determining the value of securities.

334 BUSINESS CYCLES AND BUSINESS FORECASTING 1Q W 4 Prereq Econ 301. Basic principles of business cycles and business forecasting; factors influencing business cycles and business forecasting; factors influencing employment, production, prices and national income; problems in interpretation and forecasting; consideration of policies intended to stabilize business conditions.

335 PROPERTY AND CASUALTY INSURANCE 1Q S 3 Prereq 330. Concentrated analysis of coverages; insurance management problems facing specific types of business and personal risks; multiple-line policies; legal interpretation and analysis; practical case problems in liability and direct loss situations.

336 INVESTMENTS 1Q S 4 Prereq Econ 301. Investment principles and their application in formulating investment policies for individuals and institutions. Current analytical techniques used in determining the value of securities.

337 MANAGEMENT ECONOMICS 1Q A 4 Prereq 340. The application of economic analysis to the operation of a business. Demand and costs analysis, competitive and non-competitive pricing, and multi-line production and marketing problems.

338 PERSONNEL MANAGEMENT 2Q 441 A W 4, 3 Prereq 340, 341. Personnel function in the personnel management function in the industrial organization; selection, employee and executive development, job evaluation, and employee motivation. (442) Analyzing selected problems such as: job evaluation, executive and supervisory appraisals and development, work simplification and labor management relations.

339 REGULATION OF INDUSTRY 1Q A W 4, 3 Prereq 340, 341. Economic concentration and maintaining competition. Changing relationships between government and industry emphasizing regulatory legislation, administrative agencies, national policies and social control.


341 REGULATION OF INDUSTRY 1Q A W 4, 3 Prereq 340, 341. Economic concentration and maintaining competition. Changing relationships between government and industry emphasizing regulatory legislation, administrative agencies, national policies and social control.

342 PERSONNEL MANAGEMENT 2Q 441 A W 4, 3 Prereq 340, 341. Personnel function in the personnel management function in the industrial organization; selection, employee and executive development, job evaluation, and employee motivation. (442) Analyzing selected problems such as: job evaluation, executive and supervisory appraisals and development, work simplification and labor management relations.

343 ADMINISTRATION AND BUSINESS POLICIES 1Q A W 4, 3 Prereq 340, 341. Principles and techniques. Technical preparation for legal analysis and research. Designed to develop in the student an ability to analyze and appraise current money market developments.

344 PERSONNEL MANAGEMENT 2Q 441 A W 4, 3 Prereq 340, 341. Personnel function in the personnel management function in the industrial organization; selection, employee and executive development, job evaluation, and employee motivation. (442) Analyzing selected problems such as: job evaluation, executive and supervisory appraisals and development, work simplification and labor management relations.

345 ADMINISTRATION AND BUSINESS POLICIES 1Q A W 4, 3 Prereq 340, 341. Principles and techniques. Technical preparation for legal analysis and research. Designed to develop in the student an ability to analyze and appraise current money market developments.
MARKETING
FOR UNDERGRADUATES

365 SALESMANSHIP 1 Q A W S Su 2. The fundamentals and techniques of the selling process, including the pre-approach, approach, demonstration, handling of objections and the close.

FOR UNDERGRADUATES AND GRADUATES

360 MARKETING 1 Q A W S Su 4 Prereq Econ 203. Product policy, channels of distribution, merchandising, marketing institutions, marketing functions, pricing, government regulation.

361 INDUSTRIAL MARKETING 1 Q W 4 Prereq 360. Economic factors affecting marketing policy are analyzed. Deals with buying practices, channels, sales organization, industrial distributors, price, markets, and research policies.

362 RETAILING 1 Q A W 4 Prereq 360. Types of retail stores, location, buying, pricing, display, store selling, advertising and cost control.

363 ADVERTISING 1 Q A S 4, Su 3 Prereq 360. The principles and techniques of advertising examined from the viewpoint of the businessman.

364 SALES MANAGEMENT 1 Q W 4 Prereq 360. Management of the sales force; planning, coordination, and control of the marketing program.

460 FOREIGN TRADE 1 Q S 4 Prereq 360 (Prereq waived for seniors majoring in Political Science). Theories, principles and methods of international trade.

461 MARKETING MANAGEMENT 1 Q A 4 Prereq 360 and 361 or 362. Case studies of problems facing the marketing executive.

462 PRICING POLICIES AND PRACTICES 1 Q S 4 Prereq 461. The roles of pricing strategy and pricing function in marketing decision-making. Administrative marketing problems related to elasticity of demand, cost curves, marginal analysis and competition and price behavior. Marketing policies and strategies as they relate to competition.

464 ADVANCED RETAILING 1 Q S 4 Prereq 362. Management problems of large and small retailers. Emphasis on individual student projects and research.

466 MARKET RESEARCH 1 Q A S 3 Prereq 250, 360. Research techniques and methods including statistical analysis, quantitative measurement, sampling and tabulation of opinion research practices in marketing and participation in class field project.

468 MARKET ANALYSIS AND PLANNING 1 Q W 3 Prereq 250, 360. Utilization of statistical and accounting techniques in analyzing past and planning future marketing performance.

479 MARKETING SEMINAR 1 Q a/q 2 R-6 Prereq 15 credits in marketing and c/i.

FOR GRADUATES

560 MARKETING THEORY 1 Q A 3. A critical analysis and synthesis of marketing literature and marketing from the viewpoint of other disciplines.

561 CURRENT MARKETING PROBLEMS 1 Q a/q 2 R-6. Investigation of areas of current interest in marketing. Reports and discussions conducted to develop an analytical attitude toward market problems.

599 RESEARCH 1 Q a/q V R-6. Special research problems.

699 THESIS a/q V R-9.

SECRETARIAL AND BUSINESS EDUCATION

Not more than 19 credits earned in Business Administration 180-181-182, 183, 184-185-186, 187-188-189, and 190-191 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. Register for any course in shorthand or stenography a student must be concurrently registered in English 101, or have completed 101 or its equivalent.

FOR UNDERGRADUATES

180-181-182 ELEMENTARY TYPEWRITING 3 Q A W S 2 Prereq 250. Development of basic skills. With 1 H.S. entrance unit, no credit in 180; 2 units, no credit 180, 181.

183 ADVANCED TYPEWRITING 1 Q A W S 2 Prereq 182 or placement. Application of basic skills to production jobs.

184-185-186 STENOGRAPHY 3 Q A W S 5. Theory, dictation, transcription. With 1 H.S. entrance unit, no credit in 184; 2 units, no credit 184, 185.


190-191 ADVANCED SHORTHAND TRANSCRIPTION 2 Q W S 1 Prereq 186 or placement. Concurrent enrollment in 187-188 required.

192 OFFICE MACHINES PRACTICE 1 Q A W S 2. Calculators and adding.
CHEMISTRY

is the science which seeks to determine the composition of substances, how their properties are related to their composition and when and how one substance reacts with another. A study of chemistry also includes the energy changes accompanying chemical reactions. The chemist is concerned with transforming raw materials and waste products into useful products; in making new products with new uses, such as plastics, alloys, medicinals, etc. A knowledge of chemistry is essential in many other professions. Biologists and physicians, for example, must understand the chemical nature of the materials of which living things are composed, the numerous chemical processes necessary to life, as well as ways of altering these materials or processes.

Opportunities for employment for graduates with a Bachelor's degree in chemistry are many and varied. In addition to positions in laboratories connected directly with chemical industries, with petroleum companies, etc., there are many jobs for chemists in laboratories connected with state and national governmental agencies, with hospitals, and with testing agencies. Good students are encouraged to continue their studies toward the M.S. or Ph.D. degrees in chemistry and are aided in obtaining graduate teaching assistantships or fellowships to help them finance these goals.

Both a Bachelor of Science Degree and a Bachelor of Arts Degree are offered. The requirements for the B.S. Degree meet the latest Standards of the American Chemical Society for professional education in chemistry and these graduates are certified by the American Chemical Society as meeting these standards. The M.S. and Ph.D. degrees are also offered. (See Graduate School.)

A departmental honors program has been established for chemistry majors who have attained a high scholastic record through their first two years. This program is based on independent study and research under the direction of individual faculty members. In many cases financial support is available on a part-time research assistantship basis from research grants obtained by the individual faculty members.

Prospective students desiring further information should write the Chairman, Chemistry Department.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs algebra, geometry, and trigonometry. It is desirable that the student complete four years of algebra. (If one course in Chemistry, German or French.

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 Science degree with a major in Chemistry: a total of 191 credits, 65 Chemistry credits including Chemistry 121-122-123, 245, 261-262-263, 346, 352, 366 (3 cr.), 371-372-373, 375-376-377, 431-432-433 and 15.5 credits selected from Chemistry 353, 355, 465, 466, 468, 474, 475, 476, 481, 482, 489 (or advanced graduate coursework with the consent of the department). Courses 353, 366, and 490 may not be used to satisfy all of the 5 credits of advanced Chemistry elective. At the time of graduation a major in Chemistry must have acquired a reading knowledge of German or five quarters of German. College Physics and Mathematics through 262, and Mathematics 253 or 313, are required. Every student is required to pass a senior comprehensive examination in Chemistry. The requirements for the Bachelor of Arts degree with a major in Chemistry are the same as for the Bachelor of Science degree except for the inclusion of Chemistry 366, 5 credits of advanced Chemistry, and Mathematics 253 or 213.

CHEMISTRY CURRICULUM FOR THE B.S. DEGREE

Freshman Year

Chem. 121-122-123 Math. 116-118-251 English 101-102 Group II or III electives

Phys. Ed. 100 R.O.T.C. 101-2-3

S S S S S

Senior Year


Chem 245 Group II or III elective Phys. Ed. 100 R.O.T.C. 201-202-203

14-17 14-17 14-17 14-17 15-17 15-17 16-18 15-17 16-18

Jr. Year

Chem. 374-2-3 Math. 378-2-3 German 101-2-3 Electives (to include Math 231 or 253)

S S S 5-8 5-8 5-8

Senior Year

Chem. 431-2-3 German 211, 212 Chem. 246 Chem. 366

Electives (must include 5 cr. of advanced Chem) 6-8 7-9 12-14

Recommended electives other than Group II and III requirements and other Chemistry include further Mathematics, Physics, and French or Russian.

FOR UNDERGRADUATES

For explanation see Index under "Symbols"

101-102 GENERAL CHEMISTRY 2Q A W 4 (5-2). The basic laws, properties and reactions of elements and compounds. For students desiring a one year general course only.

121-122-123 COLLEGE CHEMISTRY 3Q A W S 5 (5-4). For science majors and those students wishing more than one year of chemistry. The principles and theories of chemistry, properties and relations of elements and inorganic compounds, including qualitative analysis. Students who have completed Chem 101-102 may not register for 121-122.

160 SURVEY OF ORGANIC CHEMISTRY 1Q A W S 5 (5-4). Normally to follow Chemistry 101-102 as the 3rd quarter of chemistry for students in non-science majors desiring a one year general course only. Chemistry 160 is also open for credit to students who have completed Chemistry 122 or 123 or an equivalent two quarters of a full one year course in general or college chemistry.

245 QUANTITATIVE ANALYSIS 1Q W S 5 (3-6) Prereq. 123. Gravimetric, volumetric and colorimetric methods of analysis; theory of error as applied to chemical analysis; introduction to analytical separations.

261-262-263 ORGANIC CHEMISTRY 3Q A W S 5 (4-4). Prereq. 102 or 122. Credit not allowed for both Chem 160 and 261.

FOR UNDERGRADUATES AND GRADUATES

298 CHEMICAL PRINCIPLES 1Q W S 5 (5-4). Prereq a previous course in general chemistry or high school teaching experience in chemistry and c/l. This course is the initial course in a sequence designed to lead to the master of science in teaching.

368 INSTRUMENTAL ANALYSIS a/q 4 (2-6) Prereq 245, 371 and 375. Theory and practice of chemical instrumetnation and instrumental analysis.

374 MICROCHEMICAL ANALYSIS 1Q S 2 (1-4) Prereq 245.

384 ADVANCED QUALITATIVE ANALYSIS 1Q A 3 (2-4) Prereq 123. The use of modern techniques and methods of qualitative analysis.

385 INORGANIC CHEMISTRY 1Q W S 3 (3-0) Prereq 123, 263 and 371. The principles of systematic inorganic chemistry.

386 INORGANIC CHEMISTRY 1Q S 3 (3-0) Prereq 352. Chemistry of the representative elements.

388 INORGANIC CHEMISTRY LABORATORY 1Q W S 2 (0-6) Prereq 123, 263, and c/l. The techniques in preparation of inorganic compounds.

389 ORGANIC QUALITATIVE ANALYSIS 1Q S W V 3-5 (2-4 to 6) Prereq 265. Systematic methods of identification of pure organic compounds and mixtures; general class reactions of organic chemistry.

379 SURVEY OF PHYSICAL CHEMISTRY 1Q S 5 (5-4) Prereq 106, 122, 180 or 261, and 15 credits of college physics. Those portions of physical chemistry which are of special interest to prospective students of graduate study.

379-379 PHYSICAL CHEMISTRY 3Q A W S 3 (3-6) Prereq. 106, 262 and Physics 225. The more important methods, results and problems of theoretical chemistry.

379-379 PHYSICAL CHEMISTRY LABORATORY 3Q A W S 1 (0-4) Prereq 265, and 371-372 or 371-372 or concurrent enrollment.

384 PHYSIOLOGICAL CHEMISTRY 1Q S 3 (6-5) or 5 (5-4) Prereq 160 or 262. Chemistry and metabolism of proteins, lipids and carbohydrates; respiration; collodis.

431-432 THEORETICAL ORGANIC CHEMISTRY 3Q A W S 1 (0-2) R-s since Chem 343 R-2 Prereq 263 and a reading knowledge of German. Presentation and discussion of current literature of chemistry. Use of the library.

496-496 THEORETICAL ORGANIC CHEMISTRY 2Q a/q 3 (4-0) Prereq 263.

499 ADVANCED ORGANIC LABORATORY TECHNIQUES 1Q a/q 2 (0-5) Prereq 263 and c/l.

474 CHEMICAL THERMODYNAMICS 1Q S 3 (3-0) Prereq 373. The principles of thermodynamics and their application to chemical systems.
476 RADIOCHEMISTRY 1Q W 3 (2-4) Prereq 102 or 122. The principles of nuclear reactions, interactions of high energy protons and particles with matter and the instruments used in observing them: the chemical effects of radiation and the application of nuclear reactions to chemical problems.

481-482 ELEMENTARY BIOCHEMISTRY 2Q A W 4 (3-4) Prereq 262. Primarily for science majors.

490-491-492 ADVANCED ORGANIC CHEMISTRY 3Q A W S 3 (3-0) Prereq 352 and 373. Special topics in advanced inorganic chemistry.

504 CHEMISTRY OF THE TRANSITION ELEMENTS 1Q a/q 3 (3-0) Prereq 362.

505 PHYSICAL ORGANIC CHEMISTRY 1Q a/q 3 (4-0) Prereq 372 and 464. Kinetics of organic reactions.

506-507-508 ADVANCED PHYSICAL CHEMISTRY 3 Q A W S 3 (3-0) Prereq 373.

509 ELEMENTARY STAGECRAFT 1Q A W 2 (2-2). Prereq 131. Principles and techniques of stagecraft, including the design and handling of stage scenery. Students will work on lighting for major productions.

510 THEATER IN THE COMMUNITY 1Q A W 2 (2-2). Prereq c/i. Children's literature suitable for adaptation to dramatic form; improvisational and other playmaking techniques; the dramatic language, and a final oral comprehensive examination.

511 ELEMENTARY ACTING 1Q A W 2 (2-2). Principles of and techniques of stage direction and rehearsal. The production of the one-act play form will be considered and used in this course.

512-513-514 ADVANCED STAGECRAFT 1Q A W S 3 (2-4) Prereq 121. Principles and techniques of stage direction and rehearsal. The production of the one-act play form will be considered and used in this course.

515-516-517 THE WRITING OF DRAMA 1Q A W S 2 (3-4) Prereq 121. Principles and practice in scene painting, properties, sound and music and elements of lighting and costume. Students will work on lighting for major productions.

518 STAGE COSTUMING 1Q S Su 3 Prereq 112. History of costumes of various periods. Principles of adapting the period style to the period play. Students will work on costumes for major productions.

519 TEACHER PRODUCTION IN THE HIGH SCHOOL 1Q S Su 3. Problems of high school theater including play selection, staging, acting, promotion, organization.

520-521-522 DRAMATIC INTERPRETATION 1Q S 3 Prereq Speech 261. Theory and practice of play-reading using a wide variety of dramatic materials and forms.

523 THEATRE PRODUCTION IN THE COMMUNITY 1Q A W 2 (2-2) Prereq c/i. The place in society of the children's theater, and the community and little theater.

524 ACTING FOR TELEVISION 1Q W 3 Prereq 121. Theory and the practice of acting before the television camera.

525 STAGE LIGHTING 1Q A 3 Prereq 131. Principles and practice in stage lighting, the design and handling of stage lighting equipment and instruments and their use. Students will work on lighting for major productions.

526 CREATIVE DRAMATICS FOR CHILDREN 1Q W Su V 2-4 Prereq c/i. Children's literature suitable for adaptation to dramatic form; improvisational and other playmaking techniques; the dramatic art of body action, pantomime, characterization.

527 THEATRE PRODUCTION IN THE COMMUNITY 1Q A W 2 (2-2) Prereq c/i. The place in society of the children's theater, and the community and little theater.

528 THEATRE PRODUCTION IN THE COMMUNITY 1Q A W 2 (2-2) Prereq c/i. The place in society of the children's theater, and the community and little theater.
matic method in teaching non-theater subjects, demonstrations and exercise with laboratory groups of children from the community.

374 THEATER FOR CHILDREN 1Q Su only 2 or 4. Prereq teaching experience and c/i. History and objectives of theater for the child audience; survey of existing professional and community children's theater programs; techniques of acting, directing, and producing plays for children to be shown before child audiences in the community.

381 ART HISTORY OF THE THEATER 1Q A 2. Visual arts of the theater as an important aspect of the aesthetic theories developed in several periods of history.

394 WORKSHOP IN THEATER 1Q Su V 2-10 Prereq previous work in theater or drama courses and consent of chairman. Study and experience in the arts of the theater according to the needs, preparation, and desires of the students: costume, make-up, lighting, stagecraft, backstage organization, stage design, acting, directing, rehearsal and performance, business, and house organization and management.

401-402-403 THEATER PROJECTS 3Q a/q V 2-4 Prereq 10 credits in drama courses or in English 307-308-309, 341-342-343, and demonstration ability in basis of much work in drama and the theater. Independent work in design, lighting, costume design, direction, playwriting, study of drama.

422 ADVANCED DIRECTION 1Q S 3 Prereq 121, 131 and 223. Technique of rehearsing and directing long plays. Principles of producing farce, fantasy, comedy, melodrama, tragedy.

431 STAGE DESIGN 1Q W 3 Prereq 112, 131. The principles of stage design and the relation of the scene to the play. Practice in designing stage settings.

441 ADVANCED MAKEUP 1Q S 2 Prereq 261 and experience and/or course work on principles of techniques of creating make-ups for characters from dramatic literature. Students will work on makeup for major productions.

443 ADVANCED STAGE LIGHTING 1Q W 3 Prereq 343. Lighting for the theater and related forms, with special attention to modern lighting control and equipment, scenery projection, various forms of staging, and lighting design. Students will light productions.

491 SEMINAR A W 2 R-4 Prereq 10 credits in drama courses or in English 307-308-309, 341-342-343, and c/i. Intensive study of dramatic theory relating to acting, directing, design, and drama-turgy.

FOR GRADUATES

511 TECHNICAL DIRECTION 1Q a/q 2-4 R-8 Prereq strong technical background. Technical training in scheduling, budget, staff, construction, rehearsals, and performances. Student may serve as technical director for a production.

521 THEATER ADMINISTRATION 1Q A 3 Prereq c/i. Administrative and organizational techniques in the operation of theater producing organizations.

522 SPECIAL PROBLEMS IN DIRECTION 1Q A 2-4 Prereq 422. Special directing problems involved in areas such as musical and opera productions, pre-modern drama, etc. Individual directing projects.

531 SEMINAR IN HIGH SCHOOL THEATER PRODUCTION. 1Q W Su 2 Prereq 321. Intensive study of play production in the secondary schools with particular emphasis upon direction and training of high school students.

541 ADVANCED PLAYWRITING 1Q A W 2-4 Prereq 4-8 Prereq 306. Creative work of the student's choice. Structure, characterization, and dialogue as used in the play form.

699 THESIS 4-8 Prereq 4-8 Prereq 4-8. Research project in area of the student's choice.

ECONOMICS

is that branch of the social sciences which deals with man's efforts to satisfy his wants by utilizing the scarce means provided by nature. The department considers its teaching goals to be three fold: (1) To present to students the basic theoretical tools of economic analysis, relevant facts and institutional material, which will assist them in their future work. (2) To introduce students majoring in economics to the various special fields of study within economics. This training allows them extensive work in the other liberal arts and sciences. It is intended to instill breadth of intellectual interest, critical habits of thought, a problem-solving attitude, and facility of expression. (3) To help meet, through graduate work, the increasing demands for competent professional economists in industry, commerce, government and education.

Courses cover general economic theory, public finance and taxation, labor economics, monetary theory and prices, international economics, public utilities, comparative economic systems, and the economics of Montana.

Students may choose economics or a combination of economics and political science, sociology, or law. Graduation work leading to a Master of Arts degree with a major in economics is given.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE. In addition to the general requirements for graduation listed earlier in the catalog, a minimum of 50 credits must be completed for the Bachelor of Arts degree with a major in economics.

Unless circumstances peculiar to the student's best interest indicate otherwise, the student may choose a minor in sophomore or junior year, Economics 201-202-203; Mathematics 125; Political Science 202-203; and two quarters of History 251-252-253; Anthropology 152 or Sociology 101, in the senior year. Economics 306 and 311.

The following may be counted as part of the 50 credits required for a major in Economics: History 335 and 374, Political Science 365, Mathematics 302-303, Business Administration 260, 421. It is recommended that the student take Business Administration 201-202. A foreign language is required.

COMBINED MAJORS. Minimum of 60 credits. Combined majors in economics and political science or sociology may be earned by meeting the following requirements with the remainder of credits selected according to the student's interests. Economics 201-202-203; Mathematics 125, 306, 311 and 12 or 15 additional credits in economics, with at least one 401, 402, 403, 304, 305 and at least 12 additional credits in upper division courses. A comprehensive examination is required of seniors with a major in the Economics-Political Science or Economics-Sociology combination.

ECONOMICS-LAW COMBINATION. In addition to the general requirements for graduation listed earlier in the catalog, a minimum of 50 credits in economics must be earned in three years. First year of law will complete requirements for the Bachelor of Arts degree with a major in economics. Students should take as many as possible of the following courses: History 345, 346, 376; Political Science 375; Business Administration 201-202; Speech 112. Latin is recommended for meeting the foreign language requirement.

FOR UNDERGRADUATES

For explanation see Index under "Symbols"

101 CULTURAL ECONOMICS 1Q W 5. Institutional development of the economic society; nature, origins and problems of modern capitalism.


111-112 ECONOMIC GEOGRAPHY (See Geography).

FOR UNDERGRADUATES AND GRADUATES

301 MONEY AND BANKING 1Q A S Su 4 Prereq 203. Role of money; banks as suppliers of money; Federal Reserve System as regulator of money; monetary theories, history and policy.

303 SOCIAL SCIENCE METHODS (See Sociology).

331 PUBLIC FINANCE 1Q W 4, Su 3, Prereq 203. Principles and problems of Federal financing.

361-362 INTERMEDIATE ECONOMIC ANALYSIS 2Q A W 3, Su 4, Prereq 203. (311) Theory of the firm. (312) Input analysis and cost economics.

315-316 DEVELOPMENT OF ECONOMIC THEORY 2Q W 4, S 2, Su 3 Prereq 203. (315) Economic ideas from early times to 1890. (316) Economic theories from 1890 to the present.

321-322 LABOR ECONOMICS 2Q A W 3 Su 3 Prereq 203. (321) Institutional and industrial background of labor problems. (322) Economic and labor markets.

324 INDUSTRIAL RELATIONS 1Q S 3 Prereq 203. Problems and public policy in labor-management relations.

325 SOCIAL SECURITY 1Q S 3 Prereq 203. Theoretical analysis and problems of public policy.

331-332 INTRODUCTION TO INTERNATIONAL ECONOMICS 2Q A W 3 Su 2. Prereq 203. (331) Theoretical analysis; (332) Problems of policy-making.


345 ECONOMIC DEVELOPMENT 1Q S 4 Prereq 203. Theoretical analysis and problems of economic development.

365 PUBLIC UTILITY ECONOMICS 1Q A 3 Prereq 203. Analysis of costs and pricing policies; economic aspects of regulation.

369-370 ECONOMICS OF TRANSPORTATION 2Q A W 3 Prereq 203. (369) Economic significance, systems, freight rates and their
relations to location of industries and market centers, regulation. (370) Waterways, highways, pipelines, and airways.

374 COMPARATIVE ECONOMIC SYSTEMS 1 Q S alternate year—Fall 2 Prereq 203. Capitalism, fascism, socialism, communism; evaluation.

375 THE RUSSIAN ECONOMY 1Q S 4, Su 3 Prereq 203.

376 MONOPOLY AND COMPETITION 1Q W 3 Prereq 311. Theories of imperfect markets and workable competition as applied to public policy.

378 ECONOMICS OF MONTANA 1Q W Su 3 Prereq 203. Factors and forces determining the economic well-being of the people of Montana.

380 AGRICULTURE ECONOMICS 1Q A 4 Prereq 203. Agriculture, industry, supply of and demand for farm products, farm finance, taxation, agricultural policies.

392 CONTEMPORARY ECONOMIC PROBLEMS 1Q Su 3 Prereq 203.

406 MONETARY THEORY 1Q W 4 Prereq 301.

410 ADVANCED ECONOMIC ANALYSIS 1Q S 4 Prereq 25 credits in economics including 311.

411 MATHEMATICAL ECONOMICS 1Q S 4 Prereq 312 and Math 128.

490 MATHEMATICAL ECONOMICS 1Q S 4 Prereq 312 and Math 128.

495 SEMINAR IN ECONOMICS a/q V 1-2 R-4 Prereq 16 credits in economics and c/l.

FOR GRADUATES

Students desiring to take graduate work in economics must be admitted to the Graduate School, have the equivalent of undergraduate work in economics required of majors, and show capacity to carry graduate level courses. To obtain a Master's degree the student must earn credits in each of the following courses: Economics 460, 410, 455, and 689.

501 GRADUATE RESEARCH a/q V R-6.

699 THESIS a/q V R-15.

EDUCATION

The introduction of youth into America's complex culture has become a major task of the schools and a challenge to all teachers. The problem is intensified by the steadily increasing numbers of children who must be educated. This creates a growing need for teachers at all levels—elementary, secondary, and college—and requires that over half of the college graduates each year train for the profession of teaching.

Developing teaching competence involves securing a liberal education with special study in the fields in which the student is to teach, and study and practice in the area of teaching. In addition, the teacher must develop appreciation of people as individuals and as members of society because systematic application of teaching knowledge involves human relations in their most varied and vital aspects.

Education at Montana State University prepares for teaching in any of the twelve grades. Prospective elementary and secondary teachers must have earned a bachelor's degree, have satisfactorily completed certain specified courses, and have demonstrated competence in student teaching before they become eligible for recommendation by Montana State University for state certification to teach. Patterns of courses to be completed are planned in terms of the particular fields in which the student expects to teach.

Many University graduates will wish to remain in Montana but teaching is a stimulating career which knows no geographical boundaries and Montanas State University graduates are prepared to teach throughout the United States and its possessions. In increasing numbers, American teachers find teaching assignments available to them in foreign lands.

After they have been granted a bachelor's degree and have been certified to teach, persons in Education may take advanced work at the graduate level which will prepare them for specialized positions such as school administrator, supervisor, counselor, curriculum coordinator, reading specialist, and research director; or build up their backgrounds in the field or fields which they teach. Montana State University prepares candidates for graduate work leading to the master's and doctor's degrees.

A six-year program in school administration (two years of graduate work beyond the bachelor's degree) is also offered. The program is designed for practicing and prospective school administrators to demonstrate competence and ability and promise. Admission to the Graduate School is a prerequisite for admission to graduate programs.

General certification requirements for Montana's elementary and secondary levels are set forth below.

In addition to satisfying course, credit, and degree requirements, an applicant for certification in Montana must be (1) a citizen of the United States, (2) at least 18 years of age, and (3) able to present a satisfactory health certificate signed by a physician. Additional information may be secured from the Dean of the School of Education.

- GENERAL INFORMATION. The School of Education at Montana State University is fully accredited by the National Council for the Accreditation of Teacher Education and by the Northwest Association of Secondary and Higher Schools.

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

Students preparing to teach in the elementary grades should major in Education; those preparing to teach particular subjects, either for junior or senior high school, are expected to be competent in the subject to be taught or in Education; those preparing for library work major in Education. In addition to Education courses, the student must have satisfactorily completed 20 credits in psychology courses which are basic to advanced counseling programs. At least 30 credits of additional coursework are strongly recommended, including Psychology 310-311-312 and 220.

Students taking Education courses for purposes of meeting certification requirements will be given a series of tests for the purpose of obtaining additional information as to the student's individual aptitudes for teaching.

Other departments and schools which offer courses acceptable for Education credit include Art, Business Administration, English, Foreign Languages, Health and Physical Education, Home Economics, Journalism, Mathematics, Music, and Religion.

ADMISSION TO TEACHER EDUCATION. All students preparing to teach must apply for admission to teacher education at the time they enroll for Education courses. In addition to the requirements for a teaching certificate, plan to take psychology courses which are basic to advanced counseling. At least 30 credits of such courses are strongly recommended, including Psychology 310-311-312 and 220.

Admission to the Graduate School is a prerequisite for admission to graduate programs.

ADMISSION TO PROFESSIONAL QUARTER AND STUDENT TEACHING. During the spring quarter of the student's junior year, formal application for student teaching and assignment to a full quarter's work in professional education must be made on forms obtained from the Director of Elementary Student Teaching. Normally, the professional quarter occurs during the student's senior year.

Elementary: To qualify for this assignment, the student must (1) be eligible to continue in teacher education, (2) have a minimum of 2.0 grade point average on all courses attempted for the major in Education, and (3) have the consent of the Director of Elementary Student Teaching. The professional quarter for the student preparing for elementary certification includes 15 credits in Education, 4 credits in Teacher Education, 3 credits in Elementary Education, and 3 credits in the student's major (15 credits) and enrollment in Education 497, Problems in Teaching (3 credits).

Secondary: To qualify for this assignment, the student must (1) be eligible to continue in teacher education, (2) have completed 2 credits of the work in the teaching major (and minor, if any), with a minimum grade point average of 2.0 in all courses attempted for the teaching major (and minor, if any) and a minimum overall grade point average of 2.0, and (3) have the consent of the Director of Secondary Student Teaching.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN EDUCATION. In addition to the general requirements for graduation, students who plan to graduate in the Bachelor of Arts in Education will meet the following requirements:

PREPARATION FOR TEACHING IN THE SECONDARY GRADES. Candidates must earn a minimum of 40 credits in Education, including the following required courses totaling 35 credits: Education 200, 205, 305, 342, 405 (10 credits), 407, 450 and 452.
or their equivalents, and elective courses totaling 5 credits selected from other courses in Education. Students wishing to qualify for standard secondary certification are required to earn 45 or more credits in a teaching major and 30 or more credits in a teaching minor. Requirements for teaching majors and minors in various areas will be found in the last few pages of the Education section of the catalog.

Suggested Curriculum in secondary education:

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<th>Freshman Year</th>
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<td>Engl. 101-102-103—Freshman Composition</td>
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<td>Genl. 122-123-124—Intro to the Humanities</td>
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<td>Electives</td>
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<td>&amp;Ed 100—Physical Education</td>
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<td>ROTC 101-102-103—Military or Air Science</td>
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Sophomore Year

| History, Political Science, Sociology or Economics (to fulfill Group I requirements) | 4 | 4 | 4 |
| Psych. 110—Introduction to Psychology | 5 | | |
| Teaching Major Sequence (listed later) | 4-5 | 4-5 | 4-5 |
| Teaching Minor Sequence (listed later) | 4-5 | 4-5 | 4-5 |
| Electives | 2 | 4 | 4 |
| &Ed 100—Physical Education | 1 | 1 | 1 |
| ROTC 201-202-203—Military or Air Science | 2 | 2 | 0 |
| or | 2 | 0 | 0 |
| 16-19 | 15-19 | 15-18 |

Junior Year

| Educ 205—Educational Psychology | 3 | | |
| Educ 345—The School Library in Teaching | 3 | | |
| Educ Methods Course (in one or both teaching areas) | | | |
| Teaching Major Sequence (listed later) | 4-5 | 4-5 | 4-5 |
| Teaching Minor Sequence (listed later) | 4-5 | 4-5 | 4-5 |
| Electives | 4 | 4 | 4 |
| 15-17 | 17-15 | 15-17 |

Senior Year

| Educ 305—Sec. Sch. Tchg. Procedures | | 5 |
| Educ 405—Student Teaching: Secondary | | 10 |
| Educ 407—Problems in Teaching | | 4 |
| Educ 450—Secondary School Guidance | | 4 |
| Educ 452—Educational Measurement | | 4 |
| Elective Courses in Education | | 2 |
| Teaching Major or Minor Sequence, or Electives | | 10-12 | 9-10 |
| 18 | 16-18 | 15-17 |

PREPARATION FOR TEACHING IN THE ELEMENTARY GRADES. Candidates must earn a minimum of 40 credits in Education, including the following required courses totaling 40 credits: Education 200, 202, 301, 302, 303, 340, 404, 407.

In addition, the student will complete work in the following areas: English, 23 credits; History and Political Science, 23 credits; Geography, 3 credits; Science, 16 credits; Mathematics, 9 credits; Health and Physical Education, 9 credits; Psychology, 10 credits; Art, 6 credits; and Music, 6 credits.

For elementary teachers, Group I requirements may be satisfied by 12 credits of the following: General 125, 126, 127, and Mathematics 130, 220.

It is recommended that elementary teachers take the following Health and Physical Education courses as part of their required work in Physical Education during the freshman and sophomore years: men, 115, 116, 118; women, 116, 117, 118, 120.

Elementary Education majors may use their electives to strengthen any of the required academic fields, or to complete a minor in any of the following areas: Art, Music (vocal only), Foreign Language, Library Service, Health and Physical Education, Special Education. Specific minor patterns are available at the School of Education Office.

Any student who plans to do student teaching in the kindergarten must have completed Educ 331, Early Childhood Education, before registering for student teaching.

Suggested curriculum in elementary education:

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<th>Freshman Year</th>
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<td>Engl. 101-102-103—Freshman Composition</td>
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<tr>
<td>Genl. 125-126-127—Science for Elementary Teachers</td>
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<td>Speech 111—Principles of Speech</td>
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<td>Educ 300—Problems in Teaching</td>
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<tr>
<td>Gen. 151-152-153—Introduction to Humanities</td>
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<td>Educ 340—Children’s Literature</td>
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<td>H&amp;PE 100—Physical Education</td>
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Sophomore Year

| Educ 200—Orientation to Education | | 2 |
| Educ 202—The Elementary School Child | | 5 |
| Music 125-126—Music Educ in Elem Schools | | 3 |
| Math 130—Theory of Arithmetic | | 5 |
| Psych 230—Child and Adolescent Psych | | 5 |
| H&PE 199—First Aid | | 3 |
| Hist 201-202-203—United States History | | 3 |
| Pol Sci 101—Intro. to Am. Govt. | | 4 |
| Math 320—Intuitive Geometry | | 1 |
| H&PE 199—Physical Education | | 1 |
| ROTC 201-202-203—Military or Air Science | | 2 |
| or | 2 | 2 | 0 |
| 16-17 | 14-16 | 16-18 |

Sophomore Year

| Junior Year | Art 303-304—Elementary School Art | 3 |
| Educ 301-302-303—The Child and the Curriculum | 5 |
| Gen. 300—Conservation | 3 |
| Educ 340—Children’s Literature | 3 |
| H&PE 339—Teaching PE in the Elem School | 3 |
| Soc. Science Electives | 5 |
| Electives | 4 |
| 16 | 17 | 15 |

Senior Year

| Educ 404—Student Teaching: Elementary | 15 |
| Educ 405—Problems in Teaching | 3 |
| Electives | 16 |
| 18 | 16 | 16 |

RECOMMENDATIONS FOR MONTANA TEACHING CERTIFICATES. Montana State University recommends its graduates who meet state certification requirements to the State Department of Public Instruction. All such recommendations must be approved by the Dean of the School of Education. 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 University recommendation for certification 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 Preparation for Secondary Teaching below).
3. A teaching major (45 or more credits) and a teaching minor (30 or more credits) in fields commonly taught in high schools (see Course Requirements in Teaching Major and Minor Fields below).

Academic and professional requirements for University recommendation for certification to teach in the elementary schools of Montana are as follows:

1. Bachelor’s degree from Montana State University or other approved institution of higher education showing that the holder has completed a four-year course of elementary school education.
2. Specific requirements in general education that have particular reference to teaching areas in the elementary grades.

Students who expect to be certified to teach in the secondary grades are required to file with the School of Education at least two quarters preceding the quarter of practice teaching a statement of their teaching experience. Students who expect to be certified to teach in the elementary schools will similarly submit a statement setting forth their proposed programs. Each candidate for a certificate who has not already received credit in Student Teaching (Educ 404 or 405) will be assigned definite quarters in which he must register for that course.

SEQUENCE OF CERTIFICATION COURSES IN SECONDARY EDUCATION TO BE TAKEN BY STUDENTS NOT MAJORING IN EDUCATION.

Freshman year: Psych 110 (not counted among the 24 credits required for secondary certification).

Sophomore year: Educ 200, 2 credits.

Junior year: Educ 206, 4 credits.

Senior year: Educ 305, 5 credits; 405, 10 credits; 407, 3 credits.

SEQUENCE OF CERTIFICATION COURSES IN ELEMENTARY EDUCATION. Since certification for teaching at the elementary level is based solely upon the Bachelor’s Degree in Elementary Education, see the preceding section on preparation for teaching in the elementary grades for requirements.

Montana State University does not offer a two-year diploma program leading to provisional elementary certification.

Variations from these patterns of required courses for elementary and secondary standard teaching certification is permissible only with the approval of the Dean of the School of Education.

PREPARATION FOR PROFESSIONAL CERTIFICATION. The Montana professional certificate is issued to applicants having 3 or more years successful teaching experience who have completed a minimum of 45 quarter credits in approved courses beyond the bachelor’s degree. Students intending to qualify for this certificate

| 38—EDUCATION |
are required at the beginning of the program to outline such programs and receive approval from the Dean of the School of Education.

PREPARATION FOR SCHOOL LIBRARIANS. The library service is designed to train school and teacher-librarians to meet the requirements of the Northwest Association of Secondary School Principals and High Schools and of the State of Montana. The minimum requirement for schools of under 100 enrollment includes Education 343, 365, and consent of Director of Student Teaching. Classroom teaching is a full two years of work for a complete quarter, and although some observation and participation is made upon recognizable student teaching. It includes as many of the regular duties and responsibilities of a teacher as can be included.

405 STUDENT TEACHING: SECONDARY a/q V R-10 Prereq Education 365, and consent of Director of Student Teaching. Classroom teaching at the secondary level. Student teaching is a full two years of work for a complete quarter, and although some observation and participation is made upon recognizable student teaching. It includes as many of the regular duties and responsibilities of a teacher as can be included.

407 PROBLEMS IN TEACHING 1 Q A W S Su 3 Prereq 404 and 406 concurrent registration. Current problems and issues in teaching.

445 LIBRARY PRACTICE 1 Q A W S Su 5 Prereq 20 or more hours in Library Service and consent of Director of Library Service. The student performs school and/or college library under the supervision of a trained professional librarian. Weekly meeting with Director of Library Service.

FOR UNDERGRADUATES AND GRADUATES

311 SUPERVISION AND TEACHING OF THE LANGUAGE ARTS 1 Q W Su 3 Prereq teaching experience and c/l. Analysis of current methods in the teaching of language arts in the elementary school. Not a course in the teaching of reading.

312 SUPERVISION AND TEACHING OF READING 1 Q W Su 3 Prereq teaching experience and c/l. Characteristics of good reading programs and their development in accordance with present understandings of children and youth.

314 SUPERVISION AND TEACHING OF SOCIAL STUDIES IN THE ELEMENTARY SCHOOL 1 Q Su 3 Prereq teaching experience and c/l. Group supervision of curriculum, instructional practices, teacher-pupil relationship, planning and evaluation, unit organization, integration with other materials, and use of community resources.

315 SUPERVISION AND TEACHING OF ARITHMETIC 1 Q Su 3 Prereq teaching experience and c/l. Characteristics of good teaching programs in modern elementary school arithmetic program.


317 TEACHING OF CONSERVATION 1 Q Su 3 Prereq Gen 300 and 12 credits in Educ and c/l. Current conservation programs and materials. Integral part of summer Conservation Education Workshop.

318 PROBLEMS IN CONSERVATION EDUCATION 1 Q Su 3 Prereq 12 credits in Elementary Education or teaching experience, and c/l. Trends and techniques in teaching in the kindergarten and primary grades as a unified program.

319 REMEDIAL READING 1 Q Su 3 Prereq a basic course in teaching of reading or teaching experience, and c/l. Diagnosis and correction of reading difficulties in elementary and college levels. Methods and materials for specialists, classroom teachers, and administrators who wish to initiate remedial programs.

320 SURVEY OF CHILDREN'S LITERATURE 1 Q W Su 3.

321 THE SCHOOL LIBRARY IN TEACHING 1 Q A W S Su 3. The use of books and libraries. The use of library materials in subject enrichment and unit planning. Not to be counted in Library Service major or minor.

322 ORGANIZATION AND ADMINISTRATION OF THE SCHOOL LIBRARY. 1 Q A 4. Su 3. Objectives of school library service, library routine procedures, and budgets, and costs. For part-time teacher-librarians without library training.

323 CATALOGING AND CLASSIFICATION 1 Q W 4. Su 3 Prereq 341 or 343. Principles of classification and cataloging for small libraries.

324 MATERIALS SELECTION AND BIBLIOGRAPHY 1 Q W 4. Su 3 Prereq 341 or 343. Basic reference books and bibliographies commonly found in small libraries; reference methods, citation, and bibliographic form.

325 AUDIOVISUAL COMMUNICATION 1 Q W Su 3. Classroom utilization of sight and sound teaching materials; interactive laboratory work including 16mm., filmstrip, slide, overhead, opaque, record player, tape recorder and related instructional materials.

326 EDUCATIONAL SOCIOLGY 1 Q A Su 3. 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.
40—EDUCATION

450 METHODS OF TEACHING SECONDARY SCIENCE 1Q S Su 3 Prereq 12 credits in Secondary Education, a science minor and c/i. Problems involved in development of an adequate high school science program. Curricular methods, instructional materials.

452 SAFETY EDUCATION AND DRIVER TRAINING 1Q S Su 3 Prereq c/i. Supervised experience in teaching driving and theoretical aspects of driver education. General safety education. To prepare teachers for Safety Education and Driver Training courses in high schools. Offered in cooperation with the American Automobile Association and the Montana Highway Patrol.

458 METHODS OF TEACHING SOCIAL STUDIES IN SECONDARY SCHOOLS 1Q W Su 3 Prereq 12 credits in Secondary Education. Problems involved in the teaching of social studies in junior and senior high schools; curriculum planning, development and presentation of units of instruction, selection and use of materials.

431 THE SLOW AND RETARDED LEARNERS 1Q W Su 3 Prereq 12 credits in Education. Needs, aims, traits, identification, curriculum, teaching methods, and research.

445 REMEDIAL READING LABORATORY 1Q W Su 5 or 10 weeks Prereq 5 credits in taken course and c/i. Supervised diagnosis and remedial instruction, 1 hour per day work with selected elementary, secondary, or college students. Seminar meetings.

448 THE JUNIOR HIGH SCHOOL 1Q S Su 4, Su 3 Prereq 12 credits in Education. Objectives, organization, class scheduling, curriculum, and extra-curricular activities.

441 EVALUATION OF SCHOOL LIBRARY SERVICES AND MATERIALS 1Q S Su 3 Prereq 12 credits in Library Service. Methods of evaluating and improving school library services to teachers, students and parents.

442 LIBRARY WORK WITH CHILDREN 1Q S Su 4, Su 3 Prereq 341 or 343 and a course in children's literature. Work with children in school and public libraries, including story telling and organization of children's services in the public library.

443 LIBRARY WORKSHOP 1Q Su 3 R-9 Prereq 9 credits in Library Service. Problems of library service. General sessions and committee work; individual work on problems of special interest within the workshop topic.

444 LIBRARY SEMINAR 1Q a/q V I-5 R-10 Prereq 20 or more hours in Library Service and consent of the Director of Library Service. Independent study and research. Group analysis and discussion of individual problems.

450 SECONDARY SCHOOL GUIDANCE 1Q A W S Su 4 Prereq 305 or teaching experience. Orientation to the need, organization, and methodology of guidance services in the secondary schools.

451 GUIDANCE IN THE ELEMENTARY SCHOOL 1Q A W S Su 4 Prereq 301-302-303 or teaching experience. Orientation to the need, organization, and methodology of guidance services in the elementary schools.

452 EDUCATIONAL MEASUREMENT 1Q A W S Su 4 Prereq 12 credits in Education. Basic principles of measurement of educational outcomes in elementary and secondary teaching; application of statistical techniques to educational data; analysis of standardized tests; construction and use of teacher-made tests.

453 HISTORICAL FOUNDATIONS OF AMERICAN EDUCATION 1Q W S Su 4 Historical background of present day trends and issues in Education. Enter either quarter. (481) or (482) 1500; (483) 1600; (484) 1700; (485) 1800.

460 INDEPENDENT STUDY a/q V R-10 Prereq c/i. Selected topics under the guidance of a staff member. Term papers may be required.

464 SEMINAR a/q V R-10 Prereq 12 credits in Education and c/i. Critical analysis of individual projects. Application to specific teaching situations where possible.

FOR GRADUATES

505 INTERNSHIP 2Q V I-6 R-6. Supervised field experiences in administration, guidance, special education, curriculum. (Admission by application only)

501 ELEMENTARY CURRICULUM 1Q S 4, S 3. Major trends in course content, grade placement, organization of materials, and evaluation of outcomes.


555 CURRICULUM WORKSHOP 1Q Su V R-10 Prereq teaching experience and c/i.

559 ADVANCED EDUCATIONAL PSYCHOLOGY 1Q W Su 3. General behavior and learning; motivation, interference reduction, reinforcement, teaching for permanence and transfer. Current research in the field.

552 INDIVIDUAL APPRAISAL IN COUNSELING AND GUIDANCE 1Q A Su 3 Prereq 450 (or 451) and 452. Collecting and interpreting data concerning the individual and use of such data in counseling.

553 GROUP COUNSELING AND GUIDANCE PROCEDURES 1Q A Su 3 Prereq 450 or 451, and 452. Procedures used by counselors who work with students in groups. Emphasis upon group processes, interaction and experience.

554 (454) OCCUPATIONAL INFORMATION 1Q W Su 5 Prereq 450 or c/i. Sources, including job analysis and surveys; occupational trends; classification of systems; evaluation, selection, and use of occupational information.

555 THEORIES OF COUNSELING 1Q W Su 5 Prereq 450 or 451, and 553. Current theories of counseling as applied by the school counselor in individual counseling.

556 SUPERVISED COUNSELING PRACTICE 1Q Su 4 Prereq 553. Supervised practice in counseling students on an individual basis.

557 ORGANIZATION AND ADMINISTRATION OF PERSONNEL SERVICES 1Q S Su 5. The development and organization of guidance services in the school with emphasis on philosophy, organization procedures and faculty involvement.

558 SEMINAR IN COUNSELING AND GUIDANCE 1Q S Su 2 Prereq 452 and 556. Current literature and research in the counseling and guidance field.

559 COMPARATIVE EDUCATION 1Q S Su 3. A comparison of the education systems of United Kingdom, France, Germany, Italy, the Soviet Union, Japan, the United States; emphasis on philosophy, organization procedures and faculty involvement.

560 PHILOSOPHY OF EDUCATION 1Q A Su 3 Leading philosophical points of view in Education; concepts of the individual, society, the educative process, and the role of education.

565 SOCIOLOGICAL FOUNDATIONS OF AMERICAN EDUCATION 1Q W Su 3 Prereq 300 or 589 or c/i. The background and development of education in its broadest sense as found in the religion, the economic system, the family, the estate, and other social institutions.

566 EDUCATIONAL ADMINISTRATION 1Q A Su 4 Prereq teaching experience. Administrative relationships at federal, state, and local levels; responsibilities of county and district school superintendents.

567 SECONDARY SCHOOL ADMINISTRATION 1Q W Su 3 Prereq teaching experience. Problems in administering the elementary school. Role and competencies of the elementary principal.

568 SECONDARY SCHOOL ADMINISTRATION 1Q W Su 3 Prereq teaching experience. Role of the principal and areas of competency.

569 SCHOOL SUPERVISION 1Q S Su 4, Su 3 Prereq teaching experience. Roles and responsibilities of assigned leaders for improving instruction and promoting in-service growth of personnel.

570 SCHOOL FINANCE 1Q S Su 3 Prereq teaching experience. Sources of school revenues; revenue sharing, state, federal, and local levels; responsibilities of county and district school superintendents.

571 PLANNING THE SCHOOL BUILDING PROGRAM 1Q Su V 2-4 Prereq 570 or c/i. Procedures in determining building needs, site selection, planning the building, financing, and supervision of individual counseling.

572 LEGAL BASIS OF PUBLIC EDUCATION 1Q Su 3 Prereq 570 or c/i. Legal concepts of education in the United States; legal implications of the concept of education as a state function. Legal problems affecting pupils, parents, teachers, administrators, and school board members in relation to the school.

573 PERSONNEL ADMINISTRATION 1Q Su 3 Prereq 570 and c/i. Problems of certified and non-certified personnel (not including selection, in-service training, assignment, supervision, and welfare.

574 COLLEGE TEACHING 1 Q Su 3 Prereq 30 credits of graduate work. The type of teaching applicable to the college level.

575 INDEPENDENT STUDY a/q V R-10 Prereq consent of advisor and instructor. Selected topics under the guidance of a staff member.

576 SEMINAR a/q V R-10 Prereq c/i. Group analysis of problems in specific areas of education.

577 METHODS OF EDUCATIONAL RESEARCH 1Q A Su 4. Research problems; their statement, organization, techniques, tabulation of materials, statistical concepts necessary for interpretation of research data.

578 EDUCATIONAL STATISTICS 1Q W Su 4 Prereq Math 125, Educ 452 and 556 or concurrent registration therein and c/i.

579 RESEARCH a/q V R-15 Prereq c/i.

580 THESIS OR PROFESSIONAL WRITING a/q V R-30.
EDUCATION—41

EDUCATION COURSES TAUGHT BY OTHER SCHOOLS AND DEPARTMENTS

The following courses offered in other Schools and Departments of Montana State University may be presented for credit in the School of Education. Descriptions of these courses may be found under the Department or School which teaches the course. No change in School or Departmental designation subsequent to completion of a dual listed course may be made to remove a grade point deficiency.

Art 307 Methods of Teaching Secondary Art
B Ad 380 Methods of Teaching Shorthand, Typewriting, and Transcription.
B Ad 381 Methods of Teaching Bookkeeping and Basic Business
B Ad 384 Gregg Shorthand Theory for Teachers.
B Ad 582 Problems in Teaching Bookkeeping.
B Ad 583 Problems in Teaching Gregg Shorthand.
B Ad 584 Problems in Teaching Typewriting.
B Ad 585 Unit Courses in Business Education.
Engl 481 Methods of Teaching English.
For L 391 Methods of Teaching Foreign Languages.
For L 401 Foreign Language Workshop.
H&P 335 Methods of Teaching Physical Education.
H&P 373 School Health Problems.
H Ec 321 Methods of Teaching Home Economics.
H Ec 421 Advanced Problems in Teaching Home Economics.
Jour 518 School Publications.
Math 300 Algebra for Teachers.
Math 304 Geometry for Teachers.
Mus 323-324-325 School Music.
Rel 330 Principles of Religious Education (for Education majors only).

COURSE REQUIREMENTS

IN TEACHING MAJOR AND MINOR FIELDS

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 fifty 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 subsequent to the issuance of this catalog, the University reserves the right to modify accordingly the requirements listed below.

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 the University department. 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. Students should keep in mind that a course may not be counted in more than one teaching major or minor.

ART

Required Courses:
Art 125—Drawing 8
Art 125-126—Color and Design 8
Art 135—Sculpture 3
Art 139—Watercolor 3
Art 140—Painting 6
Art 181—Life Drawing 3
Art 251—252—253—History of Art 6
Art 307—Methods of Teaching Secondary Art 3

Electives:
Art 132—Descriptive Ceramics 2
Art 133—134—Printing Arts 2
Art 160—Lettering 2
Art 325—Advanced Design 2

BUSINESS ADMINISTRATION

Required Courses:
B Ad 183—Advanced Typewriting 2
B Ad 184-185-186—Stenography 15
B Ad 192—Office Machines Practice 2
B Ad 193—Beg. Secretarial Pract. 2
B Ad 194—Records Management 2
B Ad 201-202—Elementary Accounting 8
B Ad 380—Methods of Teaching Shorthand, Typewriting and Transcription 2
B Ad 381—Methods of Teaching Bookkeeping and Basic Business 2
B Ad 384—Gregg Shorthand Theory for Teachers 3

Required Courses:
B Ad 330—Principles of Insurance 3
B Ad 337-338—Business Law 6
B Ad 339—Marketing Principles 3
B Ad 332—Office Management 3
Econ 201-202-203—Principles of Econ. 9
Econ 501—Money and Banking 4

DRAMA (Minor Only)

Drama 112—Introduction to the Theater 2
Drama 121—Elementary Acting 2
Drama 311—Elementary Stagecraft 2
Drama 223—Elementary Direction 2
Drama 281—Stage Make-up 2
Drama 283—285—Dramatic Literature (any 2) 4
Drama 335—Advanced Stagecraft 3
Speech 118—Voice and Diction 3
Speech 261—Oral Interpretation 3
Drama Electives (may not include 101) 6

ECONOMICS AND SOCIOLOGY (Minor Only)

Electives: (From Dept. of Economics) 6
Econ 322—Economics of the Family 3
Econ 333—Intermediate Econ Analysis 3
Econ 425—Money and Banking 3
Econ 501—Money and Banking 3

ENGLISH

Teaching Major (60 credits) Teaching Minor (30 credits)

Required Courses:
Engl 201—Advanced Composition 3
Engl 311-213—Intro to Major British Writers 6
Engl 322—323—Intro to Major American Writers 6
Sph 111 or 261—Principles of Oral Interpretation 3
Sph 242—243—Shakespeare and Contemporary 5
Engl 371—The English Language 3
Engl 382—Methods of Teaching English 4
Engl 388—Seminar 3
Engl 482—Literature for the High School Teacher 3
Engl 499—Seminar 23-25

Other electives may be chosen from courses in the Department of English. Students should elect at least 10 credits in the related fields below. Other electives may be chosen from courses in the Department of English. Students should elect 10 credits in the related fields below.

FOREIGN LANGUAGES

Language taken in high school will be recognized by the University in fulfilling the equivalent for a teaching major or minor in a language. High school work will be evaluated on the basis of a placement examination certified by the Department of Foreign Languages. All students preparing to do practice teaching in a modern foreign language must take a proficiency examination administered by the Department of Foreign Languages. Students failing to pass this examination will not be recommended to the School of Education as qualified to do practice teaching.
EDUCATION

Modern Languages (French, German or Spanish)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Teaching Major</th>
<th>Teaching Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>H&amp;PE 101-102-103—Elementary</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>H&amp;PE 201-202-203—Intermediate</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>H&amp;PE 300—Conversation</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>F. L. 301—302-303—Survey of Literature</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>F. L. 210—Methods Tchg. For. Lang. (may be taken for Educ. credit)</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives:
- Courses numbered above 300

Required Courses:
- H&PE 101-102-103—Elementary
- F. L. 211—Intermediate
- F. L. 212—Advanced
- F. L. 217—Review Grammar and Composition
- F. L. 301-302-303—Survey of Literature
- F. L. 486—Methods Tch. Phys. Lang. (may be taken for Educ. credit)

Classical Languages (Latin)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Teaching Major</th>
<th>Teaching Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. 491—Seminar</td>
<td>19</td>
<td></td>
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</tbody>
</table>

GEOGRAPHY (Minor Only)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Teaching Major</th>
<th>Teaching Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geog 101—Elements of Geography</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Geog 211—Economic Geography</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Geog 331—2—Political Geography</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Geog 335—Human Geography</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Geog 360—Climatology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Geog 370—Land forms</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

HEALTH AND PHYSICAL EDUCATION FOR MEN

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Teaching Major</th>
<th>Teaching Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>H&amp;PE 109—First Aid</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 211-212, 311-312—Officiating—Football, Basketball, Track</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 240—Care and Prev. of Athletic Industry</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 305—Dance Methods &amp; Materials</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 325—Methods of Tch. Phys. Ed.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 336—Organization and Administration</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 373—School Health Problems</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 396—Applied Anatomy</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 465—Testing in Phys. Ed.</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 490—Teaching of College Phys. Ed.</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Electives: Other courses in the department

HEALTH AND PHYSICAL EDUCATION FOR WOMEN

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Teaching Major</th>
<th>Teaching Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>H&amp;PE 109—First Aid</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 211—322—Officiating—Volleyball, Basketball</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 301-302—Teaching of Team Sports for Women: Teaching of Individual Sports for Women</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 324-325-326—Dance Methods and Materials</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 335—Methods of Tch. Phys. Ed.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 336—Organization and Administration</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 373—School Health Problems</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 376—Personal Health Problems (Men)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 380—Applied Anatomy</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 450—Seminar</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 465—Testing in Phys. Ed.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>H&amp;PE 490—Teaching of College Physical Education Activities</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Electives: Other courses in the department

Notes: 1. Majors and Minors substitute courses 115-116-117, 118-119-120 for course 100 (6 quarters, 6 credits) required of other lower division students.
2. Students planning to major or minor in this field must report to the Chairman of the Department by the first quarter of the junior year.

HISTORY AND POLITICAL SCIENCE

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Teaching Major</th>
<th>Teaching Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hist 101-102-103—Dev. of West. Civ.</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Hist 251-252—U. S. History</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Pol. S. 201—American Government</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Pol. S. 231—International Relations</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Electives in History

Electives in History and Political Science

Electives: Must include 9 credits of upper division courses.

HOME ECONOMICS

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Teaching Major</th>
<th>Teaching Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journ 100—Introduction to Journalism</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Journ 146—Introduction to Radio and Television</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Journ 196—Current Affairs</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Journ 277—Elementary Photography</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Journ 279—Reporting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Journ 290—History and Principles of Journalism</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Journ 316—School Publications</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Journ 390—Principles of Advertising</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Journ 371—Advanced Reporting</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Journ 380—News Editing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Journ 490—Editorial Writing</td>
<td>3</td>
<td></td>
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</tbody>
</table>

LIBRARY SERVICE (Minor Only)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Teaching Major</th>
<th>Teaching Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edu 342—Org. &amp; Adm. of the School Library</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Edu 344—Cataloging and Administration</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Edu 354—Materials Selection and Bibliography</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Edu 364—Library Reference Materials</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Electives: 14-18 credits from the following:
- Edu 146—Audiovisual Communication
- Edu 344—Survey of Children’s Literature
- Edu 345—Evaluation of School Library Service & Materials
- Edu 442—Library Work with Children
- Edu 444—Library Seminar
- Edu 445—Library Practice
- Engi 381—Literature for the High School Teacher

MATHMATICS

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Teaching Major</th>
<th>Teaching Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 10—College Algebra</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Math 118—Introduction to Analytic Geometry and Calculus</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Math 231—Calculus I</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Math 232—Calculus II</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Math 350—Algebra for Teachers</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Math 351—Algebra for Teachers</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Electives: Additional courses in mathematics may be selected to complete the 45 credits for the teaching major and the 30 credits for the teaching minor.

MUSIC

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Teaching Major</th>
<th>Teaching Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 111-112-113—Theory I</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Music 125—Intro. to Music Literature</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Music 215—Eurhythmic Rhythm</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Music 211-212-213—Theory II</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Music 257—258—259—Audial Perception</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Music 323-324-325—Grade and Jr. High School Methods</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Music 331—Conducting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Music 332-333—Choral Cond. and Instrumentation Methods</td>
<td>8</td>
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</tr>
<tr>
<td>Music 101-401—Secondary Major</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Music 102—Secondary Minor</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>
**SCIENCE**

A student planning to qualify for a secondary certificate based on either a teaching major or minor in science must, before the completion of his sophomore year, secure approval of his course offerings in science by the science-education adviser in the School of Education. Education 420, Methods of Teaching Secondary Science, is required for all students completing a teaching major or minor in science.

Science minors may be taken only by students with a teaching major in another science.

**BIOLOGICAL SCIENCE**

<table>
<thead>
<tr>
<th>Teaching Major</th>
<th>Teaching Minor</th>
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<tbody>
<tr>
<td>(49 credits)</td>
<td>(31 credits)</td>
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</table>

**CHEMISTRY**

<table>
<thead>
<tr>
<th>Teaching Major</th>
<th>Teaching Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>(45 credits)</td>
<td>(33 credits)</td>
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<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 121-2-3-College Chemistry</td>
<td>15</td>
</tr>
<tr>
<td>Chem 245-Quantitative Analysis</td>
<td>5</td>
</tr>
<tr>
<td>Chem 261-2-Organic Chemistry</td>
<td>10</td>
</tr>
<tr>
<td>Chem 352-Inorganic Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>Chem 370-Survey of Physical Chem</td>
<td>5</td>
</tr>
<tr>
<td>Chem 451-Elementary Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>Elective Chemistry courses numbered over 300</td>
<td>3-6</td>
</tr>
</tbody>
</table>

In the minor the following substitutions will be allowed: Chem 169 for Chem 261 and Chem 262 for Chem 382 or Chem 370.

**GENERAL SCIENCE**

* (Broad Fields Major Only)

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>Micro 100—Elementary Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>Bot 111 or Zool 111—Introduction to Biology</td>
<td>5</td>
</tr>
<tr>
<td>Bot 122—General Botany</td>
<td>5</td>
</tr>
<tr>
<td>Bot 123—Local Flora</td>
<td>3</td>
</tr>
<tr>
<td>Chem 101—General Chemistry</td>
<td>6</td>
</tr>
<tr>
<td>Chem 200—Survey of Organic Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>Gen 300—Conservation of Nat. and Human Resources</td>
<td>3</td>
</tr>
<tr>
<td>Geol 101—Introduction to Geology</td>
<td>5</td>
</tr>
<tr>
<td>Phys 111-2-3—General Physics</td>
<td>15</td>
</tr>
<tr>
<td>Zool 112-2—General Zoology</td>
<td>10</td>
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<tr>
<td>Zool 200—Field Zoology</td>
<td>3</td>
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<tr>
<td>Geol 100—Descriptive Astronomy</td>
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<tr>
<td>Electives</td>
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</table>

**GEOLOGY**

* (Minor Only)

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Geol 101—Introduction to Geology</td>
<td>15</td>
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<tr>
<td>Geol 120—Aerial Photos and Geol. Maps</td>
<td>4</td>
</tr>
<tr>
<td>Geol 120—Field Methods</td>
<td>3</td>
</tr>
<tr>
<td>Geol 200—General Paleontology</td>
<td>4</td>
</tr>
<tr>
<td>Geol 311-3—Mineralogy and Petrology</td>
<td>12</td>
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</tbody>
</table>

**PHYSICAL SCIENCE**

(Broad Fields Major Only)

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Phys 221—2-3—General Physics</td>
<td>15</td>
</tr>
<tr>
<td>Phys 223—Light</td>
<td>4</td>
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<tr>
<td>Phys 322—3—Atomic Physics</td>
<td>6</td>
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<tr>
<td>Chem 121-2-3—College Chemistry</td>
<td>15</td>
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<tr>
<td>Chem 180—Survey of Organic Chemistry</td>
<td>5</td>
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<tr>
<td>Chem 261—Organic Chemistry</td>
<td>5</td>
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<tr>
<td>Chem 245—Quantitative Analysis</td>
<td>5</td>
</tr>
<tr>
<td>Chem 352—Inorganic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>Chem 370—Survey of Physical Chemistry</td>
<td>5</td>
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<tr>
<td>Math 116—College Algebra</td>
<td>5</td>
</tr>
<tr>
<td>Math 118—Intro. to Anal. Geom. and Calc.</td>
<td>5</td>
</tr>
<tr>
<td>Math 251—2—Calculus I-II</td>
<td>10</td>
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<tr>
<td>Math 115—Trigonometry (if not taken in high school)</td>
<td>3</td>
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</table>

**EDUCATION—43**

**PHYSICS**

<table>
<thead>
<tr>
<th>Courses</th>
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<tbody>
<tr>
<td>Phys 221—2-3—General Physics</td>
<td>15</td>
</tr>
<tr>
<td>Phys 314—Electricity</td>
<td>3</td>
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<tr>
<td>Phys 315—Electricity</td>
<td>7</td>
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<tr>
<td>Phys 271—Vector Analysis</td>
<td>3</td>
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<tr>
<td>Phys 322—2—Light</td>
<td>4</td>
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<tr>
<td>Phys 352—3—Atomic Physics</td>
<td>6</td>
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<tr>
<td>Phys 354—Nuclear Physics</td>
<td>3</td>
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<tr>
<td>Phys 471—Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>Phys 480—Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

(Math 113, 116, 118, 251-252-253 are prerequisites to Physics courses.)

**SOCIAL SCIENCES**

(Broad Fields Major Only)

<table>
<thead>
<tr>
<th>Courses</th>
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</tr>
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<tbody>
<tr>
<td>Soc 101—Introductory Sociology</td>
<td>5</td>
</tr>
<tr>
<td>Hist 121-2—Development of Western Civilization</td>
<td>9</td>
</tr>
<tr>
<td>Econ 201—2-3—Principles of Economics</td>
<td>9</td>
</tr>
<tr>
<td>U. S. History Courses</td>
<td>12</td>
</tr>
<tr>
<td>Pol Sci 292—American Government</td>
<td>6</td>
</tr>
<tr>
<td>Geog 331—2—Political Geography (Any two courses.)</td>
<td>6</td>
</tr>
<tr>
<td>Electives: Limited to upper division courses in social sciences including one upper division course in Sociology and 6 credits in History</td>
<td>26</td>
</tr>
</tbody>
</table>

**SPEECH**

* (Teaching Minor)

<table>
<thead>
<tr>
<th>Courses</th>
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<tbody>
<tr>
<td>Spch 111—Principles of Speech</td>
<td>5</td>
</tr>
<tr>
<td>Spch 112—Argumentation</td>
<td>5</td>
</tr>
<tr>
<td>Spch 115—Voice and Diction</td>
<td>3</td>
</tr>
<tr>
<td>Spch 114—Discussion Techniques</td>
<td>3</td>
</tr>
<tr>
<td>Spch 241—Radio-Television Speech</td>
<td>3</td>
</tr>
<tr>
<td>Spch 281—Intro to Oral Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>Spch 285—Debate</td>
<td>2</td>
</tr>
<tr>
<td>Spch 302—Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Spch 303—General Semantics</td>
<td>3</td>
</tr>
<tr>
<td>Spch 344—Survey of Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>Spch 345—History of Public Address</td>
<td>3</td>
</tr>
<tr>
<td>Spch 351—The Teaching of Speech</td>
<td>3</td>
</tr>
<tr>
<td>Spch Path 231—Voice Science</td>
<td>3</td>
</tr>
<tr>
<td>Spch Path 330—Intro. to Spch. Pathology</td>
<td>3</td>
</tr>
<tr>
<td>Spch—Electives</td>
<td>8</td>
</tr>
</tbody>
</table>

*Available only if accompanied by a teaching minor in English or by another teaching major.
ENGLISH

courses prepare the student in the fields of literature, creative writing, composition, and teaching. Through one of three separate schedules, he is allowed to emphasize that part of English which he feels to be most important to his future career.

Literature is stressed for those who wish to do graduate work, teach at the college level, teach in other countries, work in magazine or book publishing, do library work, or wish to sense and study the great currents of thought throughout the centuries.

Creative writing and composition are emphasized for those who wish simply to express themselves well and for those who become interested in the writing of poetry, drama and fiction, or who wish to combine these abilities with other forms of writing such as advertising, public relations, film and television writing.

The teaching options prepare students for teaching in the high schools, emphasizing composition, linguistics, and literature that they will find most rewarding in the training of high school students.

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 three credits in the major beyond the general requirements for English 211, 213, 232, 233, 371, 381, 481, 498, 499; Speech 111 or 261.

Schedules C: Teaching

Students planning to teach English in high school should supplement the core courses with one of the following options:

OPTION I

English 211, 213, 223, 233, 371, 381, 481, 498, 499; Speech 111 or 261.

Electives: 10 credits in the related fields below. Other electives may be chosen from courses in the Department of English, from courses in General 151-152-153, or from the Related Fields. Among electives must be one advanced course in American Literature and one advanced course in British Literature.

Related Fields: Drama 231 (strongly recommended), 101, 121, 131, 223, 251; Journalism 100, 240, 270, 316; Speech 111, 112, 118, 214, 261, 321.

Students selecting this option must qualify for a teaching minor in order to meet Montana State teaching certification requirements.

OPTION II

English 211, 213, 223, 233, 371, 381, 481, 498, 499; Speech 111 or 261.

English electives: 13 credits (must include one advanced course in British Literature, one advanced course in American Literature, and may include General 360 and 5 credits from General 181-182-183).

Related Fields Requirements: Speech 321; Journalism 290, 316; Drama 225, 321.

10-12 credits of electives chosen from ONE of the following Related Fields: Drama, Journalism, Speech.

Students following Option II must take a minimum of 45 credits in English and 30 credits in Related Fields, as defined above. This program qualifies the student for the Montana Teaching certification in English (Broad Fields). This certificate does not require a teaching minor.

HONORS. Special comprehensive examinations must be taken and a paper submitted by all students working for honors in English. An incoming senior, by the beginning of his last quarter, must have an index of 3.1 for all credits registered for in his entire record as well as in his major field to become a candidate for honors.

SPECIAL REQUIREMENTS FOR THE MASTER OF ARTS IN ENGLISH. In addition to the general requirements of the Graduate School, candidates are required to take nine credits of 500-501-502 and two credits of 600, unless they offer 498 or /. The candidate will present a thesis for which 6 to 9 credits may be allowed.

COMPOSITION, LANGUAGE AND LITERATURE FOR UNDERGRADUATES

For explanation see Index under "Symbols" 001 PREPARATORY COMPOSITION 1Q A W 0. For freshmen who fail to establish an acceptable college performance in the placement examination.

101-102-103 FRESHMAN COMPOSITION 3Q A W S Su. Students who receive a grade of "A" in 102 may substitute 201 for 103. Gathering and organization of materials and development of ideas. Structure, form, and variations of the sentence and paragraph. See separate requirements in Expository and Creative Writing.

NOTE: All freshman students must register for this course unless exempted by the department. Any student who has not completed the requirement in Freshman Composition must remain registered in this course until the requirement is completed.

NOTE: A special section will be reserved for foreign students. Prereq c/1.

106 CREATIVE COMPOSITION 1Q W S Prereq 102 and c/1. The study and writing of verse and short fiction. (Credit in this course fulfills the requirement in Eng 103, but also permits, with c/1, sophomore entrance into Eng 301.)


211-212-213 INTRODUCTION TO MAJOR BRITISH WRITERS 3Q A W S Su. Enter any quarter. Prereq A student with 6 credits of British Literature excluding Humanities cannot take this course. (211) Chaucer through Milton. (212) Dryden through Blake. (213) Wordsworth through Yeats.

251-232-233 INTRODUCTION TO MAJOR AMERICAN WRITERS 3Q A W S Su. Enter any quarter. Prereq A student with 6 credits of American Literature cannot take this course. (251) Franklin through Hemingway. (232) Hawthorne through Twain. (233) James through Hemingway.

301-302-303 CREATIVE WRITING 3Q A W S. Enter any quarter. Prereq 202 or 106. Fiction, with emphasis on the short story. Longer fiction requires a working plan, work samples, and c/1.

304 PROBLEMS IN COMPOSITION 1Q A W S. Open to any major. Common problems in writing including: organization, development, sentence control, word usage, and tone. Students also do special work in their weakest areas.

306 THE WRITING OF DRAMA (See Drama),
305 TECHNIQUES OF MODERN FICTION 1Q A 3. The intentions and methods of such innovators as Conrad and Faulkner. Students are taught variously to participate actively in the creative writing schedule, but also to aid the reading awareness of advanced students in the literary and teaching schedules.


334-342-343 SHAKESPEARE AND CONTEMPORARIES 3Q A W S Su 3. Enter any quarter. Prereq 9 credits of literature. (341) Tudor and early Stuart drama, early English poetry, Elizabethan plays, and Jacobean plays with emphasis upon historical development and stage organization. Includes study of three of Shakespeare's plays. (343) Extensive reading of Shakespeare's plays with attention to dramatic conventions, Renaissance ideology, and Shakespeare's artistic achievement.

344 (344-345)—THEORIES OF DRAMA 1Q A W S 3 e/y Prereq 1 quarter of 307-308-309. The critical literature from Aristotle to contemporary critics and the reading of representative plays from Aeschylus into the modern dramatics.

360 INTRODUCTION TO LINGUISTICS (See General Courses).


380 METHODS OF TEACHING ENGLISH 1Q S 4, Su 3. Objectives, materials and organization of the course from grades 7 through 12: observation of expert teachers; some practice in teaching and correcting student themes. Does not count in curricula A and B. Credit not allowed for this course and the identical course Educ 481.


385-387-388 BRITISH LITERATURE: RENAISSANCE TO 1660 3Q A W S Su 3. Enter any quarter. Prereq 12 cr. of literature.


390-393-394 NINETEENTH CENTURY BRITISH LITERATURE 3Q A W S Su 3. Enter any quarter. Prereq 12 cr. of literature.


NOTE: 3 courses from the above British Literature sequence will be offered each year.

398 RESEARCH METHODS 1Q S Su 3. First instruction and practice in research. Required of students in Schedules A and C and all students completing a teaching major in English.

401-402-403 ADVANCED CREATIVE WRITING 3Q A W S 3. Su 1. Enter any quarter. Prereq 301-302-303. Fiction, with emphasis on the novel, although work in the short story may be continued with c/l. (Graduate students may substitute 1 q of Drama 541.)

411 MAJOR WRITERS 1Q A W S Su 3. Prereq 12 credits in literature. One major writer, American or British, will be given special attention each quarter. Milton will be given one quarter e/y.

423-424-425 POETRY 3Q A W S Su 3. Offered 3Q each year. Prereq 9 cr. of literature. A chronological survey, with emphasis on close reading of representative works by major British and American authors.

431-432-433 PROBLEMS IN AMERICAN LITERATURE 3Q A W S Su 3. Enter any quarter. Prereq 12 cr of literature. Special genres, figures, and intellectual currents studied in depth.

497 SEMINAR: PROBLEMS IN ENGLISH LINGUISTICS 1Q S Su 3. Prereq Gen 360 or English 371. Subjects vary: linguistic problems in the teaching of English as a foreign language, and in phonemics, morphemics, and stylistics.

499 SENIOR PAPER 1Q A W S 1. Continuation and completion of project begun in 398. Required of all English majors and English teaching majors. Students in Schedule B initiate their project in 498.

FOR GRADUATES


508 WORKSHOP 1Q Su only V R-10 Prereq teaching experience and c/l.

600 SEMINAR: PROBLEMS IN RESEARCH a/q V R-6. Guidance in graduate subject and research.

699 THESIS a/q V R-6 to 9.

FOREIGN LANGUAGES

provide instruction and practice in speaking, reading and writing the tongues of other peoples for commercial and governmental, or cultural appreciation, or to promote understanding among the nations of the world depends upon knowledge of modern languages, and such understanding is particularly necessary as the importance of the United States increases in global affairs. Educated men and women find language skills not only important for social reasons, but also for employment in research in many fields of humanistic and scientific inquiry. Knowledge of a foreign language is also recognized as contributing greatly to the student's ability to use his own tongue. Such is particularly true of the classical languages, Latin and Greek, which are useful for studies of the literature and thought of ancient times. These classical languages, as well as modern French, German, Italian, Russian, and Spanish, are offered at the University.

Students of the modern languages are given an opportunity to supplement their classroom instruction with practice in a modern language laboratory.

The time needed to meet requirements for a major in one of the languages depends on language study prior to college entry, and concentration of studies in college. The department offers a Master of Arts degree as well as an undergraduate major in all the above listed languages except Greek, Italian and Russian.

Language majors may find employment as teachers, interpreters, translators, air line hostsess, in commercial and scientific fields, and in various branches of the government.

HIGH SCHOOL PREPARATION. Places of entrance to the University may be recognized by the University both in meeting foreign language requirements and in fulfilling the requirements for a major in one of the languages. Placement examination are required of all entering students who continue languages in which high school entrance credit is presented.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN FOREIGN LANGUAGES. Credits in all foreign languages may be counted toward the Bachelor of Arts degree. The total number of credits for a major in a foreign language varies with the student's high school preparation. Specific requirements are set forth below in connection with each language.

FRENCH

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

1. French 101 to 263 inclusive, or equivalent.
2. At least 19 credits from courses numbered 300 or over.
3. Four quarters, or equivalent, of another language.
4. Two quarters in history of Europe, chosen from the following: History 397, 398, 325, 216, 309, 310, 311, 314, 315, 318, 329.
2 PREREQ C/I. GRAMMAR, CONVERSATION, AND METHODS OF TEACHING

For students interested in the oral use of the language and for those who plan to teach it. German majors and minors should take this foreign language course and the two following rather than the 211-212 sequence.

203. INTERMEDIATE FRENCH 1Q A W 4 Prereq 103 or =.

For students interested in the oral use of the language and for those who particularly want a reading knowledge.

Continuation of 202.

203. INTERMEDIATE FRENCH 1Q A S Su 4 Prereq 102 or =.

Continuation of 201.

111 FRENCH FOR ELEMENTARY TEACHERS 1Q a/q Prereq c/i. Grammar, conversation, and methods of teaching French in the elementary school.

201 INTERMEDIATE FRENCH 1Q A W 4 Prereq 103 or =. For students interested in the oral use of the language and for those who plan to teach it. French majors and minors should take this course and the two following rather than the 211-212 sequence.

202 INTERMEDIATE FRENCH 1Q W S 4 Prereq 201 or =. Continuation of 201.

203 INTERMEDIATE FRENCH 1Q A S Su 4 Prereq 202 or =. Continuation of 202.

211 (213) GERMAN READINGS 1Q A W Su 4 Prereq 103 or =. For students who do not plan to continue beyond the fifth quarter or who particularly want a reading knowledge.

212 (215) GERMAN READINGS 1Q W Su 4 Prereq 211 or =. Continuation of 211.

217 GERMAN GRAMMAR REVIEW AND COMPOSITION 1Q A S Su 3. Prereq 212 or =.

FOR UNDERGRADUATES

300 FRENCH CONVERSATION 1Q a/q 2 R-4. Prereq 203.

301-302-303 SURVEY OF FRENCH LITERATURE 3Q A W S 2 Prereq 203.

305 ADVANCED FRENCH PHONETICS 1Q S Su 2. Prereq 203.

311 MEDIEVAL FRENCH LITERATURE 1Q A 3 o/y. Prereq 203.

321 FRENCH RENAISSANCE 1Q W 3 e/y. Prereq 203.

331 17TH CENTURY FRENCH LITERATURE 1Q S 3 e/y. Prereq 203.

341 19TH CENTURY FRENCH LITERATURE 1Q A 3 e/y. Prereq 203.

351 20TH CENTURY FRENCH LITERATURE 1Q W 3 o/y. Prereq 203.

361 CONTEMPORARY FRENCH LITERATURE 1Q S 3 o/y Prereq 203.

491 SEMINAR 1Q a/q V 2-3 R-15. Prereq 203. Works of outstanding writers.

FOR GRADUATES

699 THESIS a/q V R-15.

GREAT LITERATURE

101 ELEMENTARY LATIN 1Q A W Su 5.

102 ELEMENTARY LATIN 1Q W S Su 5 Prereq 101 or =.

103 ELEMENTARY LATIN 1Q A S Su 5 Prereq 102 or =.

111-112-113 GERMAN FOR ELEMENTARY TEACHERS 3Q a/q 2 Prereq c/i. Grammar, conversation, and methods of teaching German in the elementary school.

200 ELEMENTARY GERMAN CONVERSATION 1Q a/q 1 R-2 Prereq 103 or =. Primarily for majors and minors.

201 INTERMEDIATE GERMAN 1Q A W 4. Prereq 103 or =. For students interested in the oral use of the language and for those who plan to teach it. German majors and minors should take this course and the two following rather than the 211-212 sequence.
FORESTY

is the scientific management of timber resources for continuous production, including the processing of wood products, and embraces as well the related fields of range, wildlife, recreation, engineering, watershed, and soil management.

The four-year and five-year curricula lead to the degree of Bachelor of Science in Forestry. The degrees of Master of Science in Forestry, Master of Science in Forest Conservation, and Master of Science in Wildlife Management are also offered (see Graduate School). Within the general forestry curriculum the student may specialize at the undergraduate level in Forest, Range, Wildlife, and Recreational Management, or in Wood Utilization. A five-year curriculum is offered in Forest Engineering. Laboratory and field work are distinguishing characteristics of Forestry training, affording opportunities for putting into practice the theoretical knowledge emphasized in the classroom.

A summer camp is not required. In lieu of this, however, all students who select Forest Management, Forest Engineering, Forest Recreation, Range Management, Wildlife Management or Watershed Management as their field of specialization will spend the third and fourth spring quarter in camp on the Lubrecht Forest. Those selecting Forest Management or Forest Engineering will also be expected to spend their senior spring quarter on a field trip in the western states and at the Nells Forest Camp. Those selecting Range Management will spend their senior spring quarter on extended field trips through the western states. While enrolled in the School of Forestry, students are under the jurisdiction of a student administered Honor Code.

Graduates find positions in state and federal government service for work in public forests or in conservation or wildlife organizations. Others are employed by private logging, lumber, and forest products industries. Those who pursue graduate studies in forestry may secure positions in research, as teachers in universities and colleges, or as consultants in special phases of forestry.

The School of Forestry is accredited by the Society of American Foresters. The courses and curricula described below prepare the student for United States Civil Service positions and professional positions with individual states, some of which offer civil service examinations.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs a minimum of 1½ years of algebra and one year of geometry.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN FORESTRY. A minimum of 192 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 second, third and fourth years, students must have and maintain a grade point average of 2 on all credits for which registered and for which a final grade is received. 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 work pertinent to his curriculum.

A senior student in the School of Forestry who has earned a total of at least 192 undergraduate credits, but still lacks as many as 16 in his major field, may be allowed to begin graduate work. All requirements for such enrollment must be submitted in writing to and as approved by the major adviser and the Dean of the Graduate School prior to registration for such work. See Graduate School for details.

FIELD COURSE EXPENSE DEPOSITS. All students enrolled in Forestry courses will be charged a laboratory fee of $13.60 per quarter.

All seniors and sophomores must be prepared to spend all or part of the summer before the fall quarter, or exam period, and should be prepared to make additional deposits to meet actual field expenses.

CURRICULA LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN FORESTRY

FOREST MANAGEMENT

(All group requirements are not included.)

With few exceptions, the first year and the autumn quarter of the second year are the same for all students enrolled for this degree. Students are expected to select a specific course of study before they begin the winter quarter of their second year.

FOR UNDERGRADUATES

101 ELEMENTARY SPANISH 1Q A W Su 5.
102 ELEMENTARY SPANISH 1Q W S Su 5 Prereq 101 or =.
111 SPANISH FOR ELEMENTARY TEACHERS 1Q s/a Prereq 103.
301-302-303 SURVEY OF RUSSIAN LITERATURE 3Q A W S 2 Prereq 207.
307 ADVANCED SPANISH COMPOSITION 1Q S 3 e/y Prereq 203.
311 SPANISH DRAMATIC LITERATURE 1Q W S 3 e/y Prereq 206.
312 SPANISH DOCTORAL SEMINAR 1Q 3 e/y Prereq 307.
313 SPANISH DRAMA AND LITERATURE 2Q W 3 e/y Prereq 207.
317 SPANISH DRAMA AND LITERATURE 2Q W 3 e/y Prereq 207.
318 SPANISH DRAMA AND LITERATURE 2Q W 3 e/y Prereq 207.
319 SPANISH DRAMA AND LITERATURE 2Q W 3 e/y Prereq 207.
320 SPANISH DRAMA AND LITERATURE 2Q W 3 e/y Prereq 207.
321 SPANISH DRAMA AND LITERATURE 2Q W 3 e/y Prereq 207.
322 SPANISH DRAMA AND LITERATURE 2Q W 3 e/y Prereq 207.
### 48—FORESTRY

#### First Year

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<thead>
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<th>Course</th>
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<td>For 117—Survey of Forest</td>
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<td>Bot 112—Intro. to Biology, General Botany</td>
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<td>Chem 102—General Chemistry</td>
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<tr>
<td>Chem 160—Survey of Organic Chemistry</td>
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<tr>
<td>Math 114, 116—Trigonometry and College Algebra</td>
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<td>Speech 101—Principles of Speech</td>
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<td>H&amp;PE 100—Physical Education ROTC 101-2-3—Military or Air Science</td>
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</table>

#### Second Year

**Autumn:** For 50, 210, 232, 250; Physics 111; H&PE 100; ROTC 201. Winter: For 200, 230, Bot 225; H&PE 100; ROTC 202; Group Electives. Spring: For 200, 230, 253; Bot 250; ROTC 205.

**Third Year**

**Autumn:** For 300, 310, 320, 360 Winter: For 301, 340, 353; Econ 201. Spring: For 311, 312; H&PE 100; Econ 202; Bot 370; Jour 334 or English 304.

**Fourth Year**

**Autumn:** For 420, 441, 453; Group Electives. Winter: For 400, 421; Forestry Electives. Spring: For 401, 410, 496.

#### WOOD UTILIZATION

**Second Year**

**Autumn:** For 50, 210, 232, 290; Physics 111; H&PE 100; ROTC 201. Winter: For 250, 291; Bot 225; Psych 110; H&PE 100; ROTC 202. Spring: For 200, 230, 253; Bot 250; ROTC 203.

**Third Year**

**Autumn:** For 310, 341; Econ 202; Geol 101; H&PE 100. Winter: For 352; Physics 112. Spring: Math 118; Physics 113; Psych 110; Electives.

**Fourth Year**

**Autumn:** For 300, 310; Math 251; Electives. Winter: Bot 370; For 301, 340, 353, 442, 450; Electives. Spring: For 311, 330-1; Psych 343; English 394.

**Fifth Year**

**Autumn:** For 360, 420, 452, 454. Winter: For 400, 421, 455, 457. Spring: For 401, 410, 496.

#### RANGE MANAGEMENT

**Second Year**

**Autumn:** For 50, 210, 232, 290; Physics 111; H&PE 100; ROTC 201. Winter: For 250, 291; Bot 225; Phys 112; H&PE 100; ROTC 202. Spring: For 200, 230, 253; Bot 250; ROTC 203.

**Third Year**

**Autumn:** For 300, 310, 330, 360. Winter: Bot 370; For 340, 353; Econ 201; Psych 342. Spring: For 311, 341, 342; English 304; Econ 202.

**Fourth Year**

**Autumn:** For 420, 440, 441, 451. Winter: For 400, 421, 442. Spring: For 443; Bot 354; A Ad 360.

#### WILDLIFE MANAGEMENT

**Second Year**

**Autumn:** For 50, 210, 232, 250; Physics 111; H&PE 100; ROTC 201. Winter: For 250, 291; Bot 225; Psych 110; H&PE 100; ROTC 202. Spring: For 200, 230, 253; Bot 250; ROTC 203.

**Third Year**

**Autumn:** For 300, 310, 330, 360. Winter: Bot 370; For 352, 370; Bot 366; Econ 201; H&PE 100. Spring: Jour 334; For 311, 361; Econ 202; Electives.

**Fourth Year**

**Autumn:** For 420, 441, 460; Zool 101. Winter: For 400, 421, 461, 472. Spring: For 462, 463, 494, 465; Electives.

#### RECREATION MANAGEMENT

**Second Year**

**Autumn:** For 50, 210, 232, 250; Physics 111; H&PE 100; ROTC 201. Winter: For 250, 290, 291; Bot 225; Psych 110; H&PE 100; ROTC 202. Spring: For 200, 230, 253; Bot 250; ROTC 205.
FOREST MENSURATION 2Q A W 4 (3-3). (300) The application of statistical methods to forest mensuration; (301) Pre­
req. Analysis and introductory astronomy, and methods of yield analysis and their computations.

FARM FORESTRY 1 Q S 3 (2-4). Prereq junior standing in the School of Forestry. The application of the principles of forest
management, silviculture, and silviculturists to small woodland holdings.

SILVICS 1 Q A 4 (4-0) Prereq Bot 225 and 250. The foun­
dations of silviculture upon an ecological basis. The effects of cli­
mate, parent material, and biotic factors on the growth and de­
velopment of trees and stands. The influence of the forest upon the
site. Principles underlying the regeneration, care, and protection of
forest stands.

SILVICULTURAL METHODS 1 Q S 5 (4-4) Prereq 310.
The production of forest crops; reproduction methods, intermediate
cutting, and cultural operations. Field trips.

SEEDING AND PLANTING 1 Q S 3 (2-4) Prereq 311.
Artificial reproduction of the forest: collection, extraction, storage,
and testing of forest tree seed; direct seeding; nursery practice;
forest plantations. Field trips.

FOREST FIRE CONTROL 1 Q A 4 (4-0) Prereq c/l. Forest
fire prevention, pre-suppression, and suppression, weather influences,
fire behavior. The organization, education and training of personnel.
Mechanics and use of fire control machinery. Theory and use of
electronic aids.

FOREST FIRE PLANS 1 Q W 3 (3-0) Prereq junior standing
in the School of Forestry and c/l. Area pre-suppression fire plans,
action planning on small and large project fires, fuel type
mapping, and fire prevention techniques.

WOOD TECHNOLOGY 1 Q W 4 (3-3) Prereq 291. Wood
identification and application. Introduction of the relationships of
the physical, chemical and mechanical properties to specific uses.

CHEMICALLY DERIVED WOOD PRODUCTS 1 Q S 3 (3-0)
Prereq Chem 261 or =. Generalized chemistry of wood. Survey
of chemically derived products and processing including Naval Stores, pulp, paper and modified woods.

WOOD GLUING AND PHYSICAL PROPERTIES 1 Q S 3
(3-0) Prereq 340 and junior standing in the School of Forestry.
The general practice of forest products. Mechanical properties of
woods, and glued wood construction. Bent wood, painting and finishing,
end holding capacity, insulation values, and other physical prop­
erties.

ADVANCED SURVEYING 1 Q S 4 (2-4) Prereq 250, 252­
253, and c/l. Route surveying. Elements of the design and location
of forest roads. Selected topics in land surveying.

AERIAL PHOTOGRAMMETRY 1 Q W 3 (2-3) Prereq 253 or
=. The elements of photogrammetry and their applications with
emphasis on the measurement of forest variables. Application of
photogrammetric methods to planimetric and topographic mapping.
Introduction to the principles of photo interpretation.

TIMBER MECHANICS 1 Q W 3 (6-8) Prereq Physics 111.
Graphic and analytic statics applied to simple structures; simple
beams, truss designs, bending of beams, stresses and strains, and glued
wood construction. Bent wood, painting and finishing, end holding
capacity, insulation values, and other physical prop­
erties.

GENERAL RANGE MANAGEMENT 1 Q A 5 (4-3) Prereq
= and For 450. The principles of population dynamics and their application
in the management of wildlife as a land resource.

THE RENEWABLE RESOURCES AND THEIR CONSER­
VATION 1 Q W 3 (2-3) Prereq 400. The interrela­
tionships of resource conservation problems and programs. The
need for conservation to maintain our renewable resources and
manage their development and use to meet the needs of our
expanding economy. Conservation practices and facilities and the
agencies involved in their application. (Not open for doctoral
credit.)

FOREST RECREATION 1 Q S 4 (2-6) Prereq 285. Physical
development, objectives and planning in the recreational use of
forest and other wild land resources. Class trip(s).

PARK MANAGEMENT 1 Q W 3 (3-0) Prereq 285. Theory
and application of the concept of open space development in the
United States, state, national and local level. Forestry aspects related
thereto.

FOREST AESTHETICS 1 Q W 4 (3-3) Prereq sophomore
standing in the School of Forestry and c/l. The taxonomic rela­
tions and distribution of the principal forest and ornamental trees
of the United States and Canada. Identification, uses, range, and
silvicultural characteristics.

DENDROLOGY 2Q A W 3 (2-3) Prereq sophomore
standing in the School of Forestry and c/l. The taxonomic rela­
tions and distribution of the principal forest and ornamental trees
of the United States and Canada. Identification, uses, range, and
silvicultural characteristics.

DENDROLOGY 2Q A W 5 (5-0), S 8 Prereq in 420 or 420 may be taken concurrently.) (400) Organization
and management of forest properties; determination of allowable
cut and regulation of the growing stock. (401) Prereq 301 and 400.
Emphasis on field work necessary in applying forest management,
timber cruising, determination of growth, and timber marking.
410 REGIONAL SILVICULTURE 1Q S 2 (0-Field) Prereq 310 and 311. Application of silvicultural methods to the problems of forest species, types, and regions of the United States.

411 SOIL CHEMISTRY AND PHYSICS 1Q W 3 (3-0) Prereq 210. The chemical and physical properties of soils, their measurement and their influence on the growth and distribution of plants.

412 SOIL MORPHOLOGY, GENESIS AND CLASSIFICATION 1Q S 3 (3-0) Prereq 210. Prereq 360 and 370. Study of the biological processes, the development and classification with particular emphasis on Montmorillonite soils.

420 VALUATION 1Q A 4 (4-0) Prereq 310 and 311. Theory and process of estimating value of forest properties and enterprises.

421 FOREST ECONOMICS 1Q W 5 (5-0) Prereq Econ 201 and For 420. Economic problems and principles involved in the use of the forest resource. Introduction to the distribution of forest production product. Primary and secondary manufacturing processes and products. Minor forest products.


440 MECHANICALLY DERIVED WOOD PRODUCTS 1Q A 3 (3-0) Prereq 2001. Forces in three dimensions; columns; selection, production, and management of range livestock.

441 SAWMILLING AND LUMBERING 1Q A 3 (2-0) Prereq junior standing in the School of Forestry. History, theory, methods of cutting in the field. Analysis of the physical structure of wood in its form. Primary and secondary manufacturing processes and products. Minor forest products.

451 MECHANICAL PROPERTIES OF WOOD 1Q A 3 (2-2) Prereq 340. Mechanical factors related to strength of wood; elementary graphie statistics; timber testing.

452 LOGGING 1Q A 3 (2-4) Prereq 351, 311. Equipment and methods of logging in the United States; calculation of logging costs; the effect of logging on other forest values; fundamentals of a logging plan. Field trips.

454-455-456 FOREST ENGINEERING 3Q A W 4 (4-4). S 6 Prereq 252-253, 350-351. 454 and 455 are for engineering majors only. (454) Collection of field data for a logging plan. Location of major forest roads and hazard areas. Evaluation of mass diagrams, estimates of road and logging costs necessary to complete a logging plan. Prereq for 453 or 455. Application of forest engineering methods and techniques, time and cost studies. (field work).

457 TIMBER DESIGN 1Q W 4 (2-0) Prereq 353 and mathematics. Forces in three dimensions; behavior of trees and equipment; joint analysis using timber connectors; post and beam construction; and laminated wooden arches.

460 RANGE TECHNIQUES 1Q A 4 (2-0) Prereq 360 and c/l. Range surveys, conditioning and trend analysis, utilization analysis, damage appraisal. Field trips.

461 RANGE LIVESTOCK NUTRITION 1Q W 5 (3-0) Prereq 360 and c/l. The elements of animal nutrition. The nutritional characteristics of range forage plants, and nutritional requirements of livestock and big game animals.

462 RANGE LIVESTOCK PRODUCTION 1Q S 2 (2-0) Prereq 360 and c/l. Selection, production, and management of range livestock.

463 RANGE ECONOMICS 1Q S 3 (3-0) Prereq 350, Econ 201 and 311. Range economics. Range utilization, level of income and income, tenure, taxation, fees and leases, economic utilization of forage, economics of range improvements, ranch organization and appraisal.

464 RANGE ADMINISTRATION 1Q S 2 (2-0) Prereq 360 and c/l. Legislation and policies developed in the acquisition of federal and state and private range properties. Admistration, organization and methods for regulation of grazing on public lands.

465 REGIONAL RANGE MANAGEMENT 1Q S 6 Prereq 460, 461, 462 and c/l. Regional range management problems and situations worked on during the quarter. Prereq 360, 370, 380, 390, 391, 392, 393, 394, 395, 396, 397 and c/l. The principles of population, dynamics, and management of wildlife and game mammals to wildlife conservation and administration. The relations of land use practices to wildlife diversity and abundance.

470 WILDLIFE HABITAT MANAGEMENT 1Q S 5 (4-2) Prereq 340 and 370. Prereq 471 and c/l. May be taken concurrently with For 472. Principles and techniques of management of wildlife population responses to ecological change, with the aim of influencing wildlife populations through habitat modification.

472 BIG GAME MANAGEMENT 1Q W 3 (2-4) Prereq 360, 370 and c/l. The biology of big game mammals and its application to problems of conservation and administration.

473 FIELD WILDLIFE MANAGEMENT 1Q S 6 Prereq 471 or concurrent registration and c/l. Effects of land and wildlife management practices on wildlife populations.

480-481 RESOURCE MANAGEMENT AND CONSERVATION PLANNING 2Q W 4 (3-0) Prereq Econ 257, 258, 259; For 310, 360, 482 and c/l. (480) Methods of analyzing and planning the use of renewable and non-renewable resources: the physical, economic, social, and political problems involved in integrating resource development. Possible alternative uses of resources as a basis for planning in the future. Emphasis on field work in working out problems of integrated resource management and studying conservation problems for selected land areas involving several land uses under multiple public and private ownerships.

502 SOIL AND WATER CONSERVATION 1Q A 4 (3-4) Prereq 411 and c/l. Principles and methods of soil and water conservation related to soil type, condition and land use. Field techniques in land use planning and application for soil and water conservation.

540 WATERSHED MANAGEMENT 1Q W 3 (2-0) Prereq 310. The components of the hydrologic cycle; their measurement, their influence on water yield and their response to land management.

590 FOREST METEOROLOGY 1Q W 4 (4-0) Prereq junior standing in Forestry and c/l. The basic meteorological factors that influence the behavior of game mammals weather elements, and the preparation and use of weather forecasts.

590 FORESTRY PROBLEMS 3Q a/q V Prereq completion of basic undergraduate work and c/l. Individual problem work. Offered by different instructors under various titles.

FOR GRADUATES

560 ADVANCED FOREST MANAGEMENT 1Q A 3 Prereq 401 and 402. Analysis of forest management problems by regions and forest types.

511 ADVANCED SILVICULTURE 1Q S 3 (2-2) Prereq 311 and c/l. Analysis of silvicultural problems in selected forest types.

520 ADMINISTRATIVE LEADERSHIP Extension course W V Prereq 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, planning, administration, public relations and related fields. One month, 30 hr. per week. Staff of university specialists in fields involved.

530 FOREST FIRE BEHAVIOR 1Q A 3 (3-0) Prereq 330 and 390. The fire as a three-dimensional problem involving fuels, weather, and topography and the influence of these on the behavior of the fire. Emphasis is placed on high intensity fires and erratic fire behavior.

540 WOOD RESIDUE UTILIZATION 1Q a/q 4 (2-8) Prereq 341, 440, 441, 451. Techniques for volumetric sampling. Application and product uses for various types with detailed emphasis on the type most pertinent to interests of students concerned. One quarter.

543 WOOD RECONSTITUTED BOARDS 1Q W 3 (1-4) Prereq 342, 440, 441, 451. Different types of boards with properties and uses of each. Raw materials, additives, production variables and product testing. Laboratory practice in making and testing sample boards.

546 ADVANCED RANGE MANAGEMENT 1Q a/q 3 Prereq 360 and 460. Analysis of range management problems by regions and forage types.

545 ADVANCED FOREST RECREATION 1Q A 3 (3-0) Prereq 385 and 386. Recreation planning, design, methods and planning. The factors involved in irregular sites, roadside planning. The social, political and environmental problems involved in recreational land management. Individual research.

561-562 RESEARCH METHODS 2Q A W 2. Enter either quarter. Prereq at least one course in statistics or statistical elements of forest management and c/l. (561) The nature of scientific research, planning and conducting research, organization and presentation of research results. (562) Application of statistical methods to the design of forestry research, techniques of analysis of research data.

598 SEMINAR 2Q A W 1. Presentation by students and staff of papers in their field of specialization.

600 RESEARCH a/q V. Independent research. The type of problem to be investigated will be selected by the student in consultation with the Forest Management, Silviculture, Soils, Economics, Fire Control, Utilization, Engineering, Range Management, Wildlife Management, Conservation and General.

699 THESIS a/q V R-15.
GENERAL COURSES

are offered as surveys or introductions to broad fields of learning, but there is no "general course" in which a degree is offered. Any University student is compelled to study in at least two fields on the basis of the liberal education: and specialization in one curriculum, although required for a degree is strictly limited (see Graduation Requirements). But it has been found advisable to provide certain degree curricula which overlap two or more of the curricula described in other pages of the catalog and in which the specialized instruction is drawn from several fields.

The curricula in Biological Sciences, Liberal Arts, Physical Sciences, Secretarial-Home Arts, Pre-Medical Science and Wildlife Technology are examples. It has also been found desirable to provide particular courses which overlap two or more fields; these are described below.

100 DESCRIPTIVE ASTRONOMY 1Q S 4. An introductory course: The earth and the sky, seasons, telescopes and their uses, planets and their satellites, stars, galaxies. (Applies toward Group I.)

101-102-103 INTRODUCTION TO THE READING OF LITERATURE 1Q W S 1, 2, 2. In the study of international forms of literature. Training in the skill of reading literature, including the reading of, and the conditions producing, the Indian, Greek, and Roman literature. (101: Fiction. 101-102: Poetry. Not applicable to Group III requirements.)

125-126-127 SCIENCE FOR ELEMENTARY TEACHERS 3Q A W S 2, 3, 3. An introductory course in the study of the elementary sciences. The nature of language and the techniques of communication. (Prepares students for elementary school teaching.)

132 EVOLUTION, GENETICS AND MAN 1Q W 3 Prereq Gen 131 or permission of instructor. (3-2-2) Open only to majors in Zoology. (125) A survey of the fundamental aspects of physical science, including force and motion, electricity, magnetism, wave motion, gravity, states of matter, the universe, and atomic structure, and related topics. (126) An investigation of the interrelationships of physical and biological sciences: physical and chemical reactions, basic organic chemistry, biochemistry metabolism, cell structure, relationship of cell structure and function, cell division, genes, genetics, origin of species, and reproduction of the animal and plant kingdoms, including taxonomy, morphology, physiology, ecology, and racial diversity. Credit not allowed for this course and Botany or Zoology 111.

131 INTRODUCTION TO BIOLOGICAL SCIENCE 1Q A S 4 (3-2). An introduction to the basic principles of biology, including aspects of oecology, cellular metabolism, genetics, origin of life, mechanisms of evolution, and adaptation to environment. Offered to major and non-major students in Botany, Microbiology and Zoology. Primarily for students not majoring in the Biological Sciences. Credit not allowed for this course and Botany or Zoology 111.

132 EVOLUTION, GENETICS AND MAN 1Q W 3 Prereq Gen 131 or permission of instructor. (3-2-2) Open only to majors in Zoology. (125) A survey of the fundamental aspects of physical science, including force and motion, electricity, magnetism, wave motion, gravity, states of matter, the universe, and atomic structure, and related topics. (126) An investigation of the interrelationships of physical and biological sciences: physical and chemical reactions, basic organic chemistry, biochemistry metabolism, cell structure, relationship of cell structure and function, cell division, genes, genetics, origin of species, and reproduction of the animal and plant kingdoms, including taxonomy, morphology, physiology, ecology, and racial diversity. Credit not allowed for this course and Botany or Zoology 111.

151-152-153 INTRODUCTION TO THE HUMANITIES 3Q A W S 3, 3, 3. Enter any quarter. Those who have completed 8 or more college credits in literary form, or present evidence of literary skill and knowledge. (151) A general survey of the field of Humanities, the nature and development of ideas, the influence of ideas on human life, and the way in which human life has influenced ideas. (152) Historical and social background of the Western world, with emphasis on the development of ideas and institutions. (153) Historical and social background of the Western world, with emphasis on the development of ideas and institutions. Credit not allowed for this course and Botany or Zoology 111.

251 STUDIES IN HUMANITIES 1Q a/q 3 R-9 Prereq Gen 151-152-153. Advanced studies in Humanities. Given by different instructors under various titles.

300 CONSERVATION OF NATURAL AND HUMAN RESOURCES IN MONTANA 1Q W S 3 Prereq c/l. 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. The methods of social implementation of desired practices. Primarily a teacher training course. Does not satisfy requirements for degrees in Botany or Zoology or the group requirements in science.

NOTE: Graduate credit is not allowed for Master of Arts majors in History, Political Science and Economics for courses 320, 324 and 328.

302 HISTORY OF COMMUNISM 1Q Su 3. 19th century Socialist movements, the Russian Revolution, the Soviet Union between World Wars I and II, Titusov, the Chinese Revolution, the Cold War.

309-310-311-312-313 STUDIES IN COMMUNISM 1Q Su 3. The roles which Communist ideology, institutions, and practices play in the development of basic political problems. The relationships between ideology and political practice in the USSR, in other Communist countries, and in Communist parties throughout the world.

328 ECONOMICS OF COMMUNISM 1Q Su 3. Communism as an economic system compared with capitalism and socialism; how the Soviet economy functions; economic planning and growth, standard of living, agriculture, finance, foreign trade, and business organization.

360 INTRODUCTION TO LINGUISTICS 1Q A S 3. A survey of linguistic science. The nature of language and the techniques of the descriptive linguist. (See English.)

450 WILDLIFE SEMINAR 1Q A 2 Prereq senior standing in Wildlife Technology or Forestry. Legal problems, policy and administrative problems.

GENERAL LITERATURE

These courses may be applied toward a major in the Department of English, except for 161. Courses numbered 307, 380, 440 and 491-492-493 will be allowed toward a major in foreign languages.

161 CLASSICAL MYTHOLOGY. (See Foreign Languages.)

221 FOREIGN LITERATURES IN TRANSLATION. (See Foreign Languages.)

FOR UNDERGRADUATES AND GRADUATES

307-308-309 THE DRAMA. (See English.)

344-345 THEORIES OF DRAMA. (See English.)

440 STUDIES IN COMPARATIVE LITERATURE. (See Foreign Languages.)

491-492-493 LITERARY CRITICISM. (See Foreign Languages.)

GEOPGRAPHY

is concerned with the description and analysis of the earth's surface. Geographers describe the location and distribution of physical and human elements as well as the associations between these various elements. A crucial part of geography is the achievement of an understanding of the processes involved, the reasons for, and the significance of distributions of physical and human phenomena. Geography, therefore, entails the study of such physical elements as terrain, climate, natural vegetation, soils and water, as well as the human elements which include population, settlements, cultural levels, economic activities and political groupings.

Geography provides the basis for a better understanding of the world in which we live and of the events which take place around us. Employment opportunities for those trained in geography exist in government, business and industry, and in the teaching profession at all levels.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN GEOGRAPHY. In addition to the general requirements for graduation listed earlier in the catalog the following special requirements must be completed for the Bachelors of Arts degree with a major in Geography: a minimum of 50 credits in Geography including Geography 101, 201, 211, 250, 259, 370, 380, 280 and two of five Geography courses 301, 331, 333, 345, and 371; Economics 201-305-205; Geology 110; History 251-252-253 or Political Science 202; and Sociology 110.

The following courses with the consent of the adviser may be counted toward a major in Geography: Botany 250 or 355, Business Administration 344, Economics 330, General 190, Geology 310, Sociology 304, and Forestry 380.

The foreign language requirement listed earlier in the catalog must be satisfied. Foreign or German are strongly recommended unless the student intends specializing in a part of the world where the use of some other language prevails.

SUGGESTED CURRICULUM IN GEOGRAPHY

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GEOLOGY

is the study of the earth, the processes by which it is changed and the history of its development. Geology aids in the location and exploitation of minerals and fuels, soils, building material, water, and other natural resources.

The Bachelor of Arts degree, the Master of Arts (or Master of Science), and the Ph.D. degrees are offered (see Graduate School). Instruction involves the use of mineral, rock and fossil collections, geologic and topographic maps, aerial photographs, optical and chemical methods, X-ray methods and many others. Nearly all courses include field work. Students are trained in mapping methods and general field investigation under actual working conditions. Such studies are accompanied by theoretical work as well as courses in other basic sciences.

Petroleum companies, governmental agencies such as federal and state geological surveys, and mining companies are the chief employers of geologists.

HIGH SCHOOL PREPARATION. In addition to the general requirements for University admission, the student needs algebra. It is also recommended that 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 requirements must be completed for the Geology curriculum: Geography 150, 150, 260, 260, 262-263, 311-312, 318, 435, 3 cr. of 325, 339-331. Also required are Mathematics 111-112, 118; Chemistry 121-122-125, 232; Physics 111-112-113 or 321-222-223; English 304; Geography 370; Zoology 111, 112 or Mathematics 301-302. A foreign language, 23 credits in one language, or 3 quarters in another language or a reading knowledge, is required. French, German, Russian or Spanish is recommended.

Departmental requirements can be waived for students who at the end of any complete year have a B average in all college courses previously taken while pursuing a standard geology curriculum. A special geology curriculum may be devised for these students in consultation with their advisers. This will, for example, allow special curricula planned for special areas of interest such as environmental control or paleontology. This is applicable at the end of the freshman year and to transfer students, and can be revoked if the grade average falls below B.

COMBINATION GEOLOGY AND LAW PROGRAM. Students in this program complete all of the above requirements except Geology 429, Field Geology. In addition to the general requirements for graduation listed earlier in the catalog the following requirements must be completed for the Geology curriculum: Geography 150, 150, 260, 260, 262-263, 311-312, 318, 435, 3 cr. of 325, 339-331. Also required are Mathematics 111-112, 118; Chemistry 121-122-125, 232; Physics 111-112-113 or 321-222-223; English 304; Geography 370; Zoology 111, 112; English 304; and Geography 450. Three quarters of Latin are recommended for part of the foreign language requirement.

The degree of Bachelor of Arts with a major in Geology is granted to those who complete the above requirements. 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.

SPECIAL REQUIREMENTS FOR THE GRADUATE DEGREES. Not more than 9 credits of Geology 600 and 699 may be counted toward the student's degree requirements, and not more than 15 credits of Geology 600 and 699, including those received for the Master's degree, may be counted for the Ph.D.

The "P" grade is given for all work in Geology 500, 565, 600, and 699.

FIELD TRIP EXPENSES. Students enrolled in courses which include field trips share equally the cost of transportation and insurance. Students should consult the University Business Office for a statement of expenses connected with Geology 429, Field Geology.

CURRICULUM IN GEOLOGY

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<td>Zool</td>
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### Senior Year

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### For Graduates

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<th>Course Area</th>
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<tr>
<td>699 Thesis</td>
<td>a/q V</td>
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<td>V R-15</td>
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### GEOPHYSICS

The study of the earth, the processes by which it is changed and the history of its development. Geophysics aids in the location and exploitation of minerals and fuels, soils, building material, water, and other natural resources.

The Bachelor of Arts degree, the Master of Arts (or Master of Science), and the Ph.D. degrees are offered (see Graduate School). Instruction involves the use of mineral, rock and fossil collections, geologic and topographic maps, aerial photographs, optical and chemical methods, X-ray methods and many others. Nearly all courses include field work. Students are trained in mapping methods and general field investigation under actual working conditions. Such studies are accompanied by theoretical work as well as courses in other basic sciences.

Petroleum companies, governmental agencies such as federal and state geological surveys, and mining companies are the chief employers of geologists.

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

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN GEOPHYSICS. In addition to the general requirements for graduation listed earlier in the catalog the following requirements must be completed for the Geophysics curriculum: Geography 150, 150, 260, 260, 262-263, 311-312, 318, 435, 3 cr. of 325, 339-331. Also required are Mathematics 111-112, 118; Chemistry 121-122-125, 232; Physics 111-112-113 or 321-222-223; English 304; Geography 370; Zoology 111, 112; English 304; and Geography 450. Three quarters of Latin are recommended for part of the foreign language requirement.

The degree of Bachelor of Arts with a major in Geophysics is granted to those who complete the above requirements. 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.

SPECIAL REQUIREMENTS FOR THE GRADUATE DEGREES. Not more than 9 credits of Geology 600 and 699 may be counted toward the student's degree requirements, and not more than 15 credits of Geology 600 and 699, including those received for the Master's degree, may be counted for the Ph.D.

The "P" grade is given for all work in Geology 500, 565, 600, and 699.

FIELD TRIP EXPENSES. Students enrolled in courses which include field trips share equally the cost of transportation and insurance. Students should consult the University Business Office for a statement of expenses connected with Geology 429, Field Geophysics.

CURRICULUM IN GEOPHYSICS

### Freshman Year

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### Sophomore Year

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<td>V R-15</td>
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### FOR UNDERGRADUATES

**FOR UNDERGRADUATES**

*For explanation see Index under "Symbols"*

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<tr>
<td></td>
<td>110 GENERAL GEOLOGY A Q 5 (3-4). Open to non-science majors with c/i. Minerals, rocks, and structure of earth's crust: the dynamic processes, volcanism, diastrophism, and gradation which shape earth's landscape. Credit not allowed for 110 and 111.</td>
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<td>120 INTRODUCTION TO GEOLOGIC MAPS AND AERIAL PHOTOS 1Q W 4 (2-4). Prereq 101 or 110. Interpretation of geologic maps, aerial photographs, and aeral photos on aeral photos on topographic base maps. Some all-day field trips on Saturday.</td>
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<td>200 GENERAL PALEONTOLOGY A Q 4 (3-2) Prereq 101 or 110. General principles of paleontology, evolution, and history of plants and animals.</td>
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<td>311-312 MINERALOGY 2Q A W 4 (2-6). Prereq Chem 122 and Math 142. Elements of crystallography: origin, classification and determination of common minerals by physical (including optical) and chemical methods; special emphasis on ore and rock forming minerals.</td>
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<td>315 PETROLOGY 1Q S 4 (2-6) Prereq 312. Common rocks, their mineral composition and physical characteristics, classification, identification in the field, origin and structural features.</td>
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<td>320 PROBLEMS 1Q a/o V Prereq 20 in Geology or = and c/i. Supervised investigation in any phase of geologic study in which the student has sufficient background to contribute original thought.</td>
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<td>360-361 STRUCTURAL GEOLOGY 2Q A W 3 (2-4) Prereq 260, Math 116. Elements of geophysics 113 or 222 or concurrent registration. Structural features of earth's crust; their analysis by geometric and stereographic projections. Mechanical principles of deformation.</td>
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<td>362-363 FIELD GEOLOGY 1Q Su 8 (4) days per week for 6 weeks in the field) Prereq 261 or 311. Given by University Geology Department staff at their field station near Whitehall, Montana. Primarily detailed field mapping. Registration must be completed by April 1.</td>
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### FOR GRADUATES AND GRADUATES

|      | 300 GEOLOGY OF MONTANA 1Q Su 3 (2-3) Prereq c/i. Primarily for natural science teachers. General earth science with emphasis on Montana. Most laboratory work out-of-doors. Not allowed toward a geology degree. |
|      | 305 MONTANA MINERAL RESOURCES 1Q Su 3 (2-3) Prereq c/i. Cr. 5, 5. A laboratory course in the geology of representative mineral deposits in Montana and vicinity with some field trips. Not allowed toward a geology degree. |

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### Analysis of Requirements

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<th>Group</th>
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<th>Hours</th>
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<td>311-312 MINERALOGY</td>
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<td>315 PETROLOGY</td>
<td>1Q S 4 (2-6)</td>
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<td>320 PROBLEMS</td>
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<td>360-361 STRUCTURAL GEOLOGY</td>
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Total: 16 credits

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### Analysis of Requirements

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<th>Hours</th>
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<tr>
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<td>101-102 INTRODUCTION TO GEOLOGY</td>
<td>2Q A W S Su 101, W S 102: 5 (3-4).</td>
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<td></td>
<td>311-312 MINERALOGY</td>
<td>2Q A W 4 (2-6)</td>
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<td>315 PETROLOGY</td>
<td>1Q S 4 (2-6)</td>
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<td>360-361 STRUCTURAL GEOLOGY</td>
<td>2Q A W 3 (2-4)</td>
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Total: 16 credits
54—HEALTH & PHYSICAL EDUCATION

515 STRUCTURE OF MINERAL DEPOSITS 1Q S 3 e/y (3-0)
Prereq 301, 401, 405 recommended. Classification of mineral deposits according to structural and genetic features; special reference to origin as related to tectonic control.

520 PETROGENESIS 1Q W 3 e/y (3-0)
Prereq 426 and 428. Advanced discussion of modern theories of origin of igneous and metamorphic rocks.

525 MICROSCOPIC DETERMINATION OF OPAQUE MINERALS
1Q S 3 e/y (1-4)
Prereq 400, 401, 420. Identification of minerals in polished sections by physical and microchemical tests. Theoretical study of mineral paragenesis and sulfide systems.

528 X-RAY SPECTROGRAPHIC CHEMICAL ANALYSIS 1Q W 4 (2-4)

530 X-RAY CRYSTALLOGRAPHY 1Q S 3 (2-2) e/y Prereq 445. X-ray crystallography and structural determination of single crystals. Seminar discussions of other topics.

530 SEMINAR a/q V Prereq graduate standing in geology or comparable training in cognate areas and c/t.

505 ADVANCED PROBLEMS a/q V. Investigations of geologic problems exclusive of thesis research.

600 RESEARCH a/q V. Directed research to serve as thesis for graduate degrees.

690 THESIS a/q V R-15. Credit assigned upon submission of final copy of approved and bound thesis.

HEALTH AND PHYSICAL EDUCATION

Deals primarily with muscular activity and recreation to provide the individual with wholesome psycho-motor and organic development, with fitness for daily living, and with resources for use of leisure. The program provides (1) instruction in a wide variety of sports and recreation skills, (2) opportunity for student groups to organize teams and to participate in formal and informal competition in such activities as archery, badminton, basketball, bowling, golf, horseshoes, skiing, swimming, tennis, touch football, softball and volleyball, and (3) preparation for professional careers in the various fields related to physical education and recreation.

A student may earn either a Bachelor of Arts degree or a Bachelor of Science degree with a major in this field. The Master of Arts and the Master of Science degrees are also offered.

Theory courses include structure and function of the human body, basic principles and teaching procedures, history and philosophy, and planning and administration of programs. Professional activity courses include training in teaching general physical education, adapted games and swimming, and activities such as archery, badminton, basketball, bowling, golf, horseshoes, skiing, swimming, tennis, touch football, softball, and volleyball, and preparation for professional careers in the various fields related to physical education and recreation.

For Bachelor of Science Degree

Freshman Year

English 101-102-103
Speech 111
Psych 110 (Group III)
Sociol 181 (Group II)
Sociol 102 or other Anthropology (Group II)
Zool 111 (Group I)
Microbiol 106 (Group I)
H&PE 118-119-117
H&PE (Women) 190
H&PE (Men) 198
H&PE 199
ROT C 101-102-103 (Men)
Elective (Group III)

Sophomore Year

Psych 230 (Group III)
Home Ec 140
Educ 200
Educ 205
Zool 202
H&PE 118-119-112
H&PE 211 and 212, 210 (Men)
H&PE 231-232 (Women)
H&PE 310
ROT C 201-202-203 (Men)
Elective (Minor and Group II) Women
Elective (Group III) Men

Junior Year

H&PE 240 (Men)
H&PE 321-322 (Women)
H&PE 310, 311 and 312 (Men)
H&PE 324-325 (Women)
H&PE 326
H&PE 335
H&PE 375 (Women)
H&PE 380
Educ 305
Educ 335
Educ 373
Elective

Elective

Men 4
Women 4

Elective

Men 4
Women 4

Senior Year

H&PE 100 (Women)
H&PE 321-322 (Men)
H&PE 375
H&PE 376
H&PE 464 (Women)
H&PE 465
H&PE 466
Educ 400
Educ 407

Women 10
Men 10

Electives

Women 10
Men 10

For Undergraduates

For explanation see Index under "Symbols"

100 PHYSICAL EDUCATION A W S Su 1. Instruction in the beginning skills and when feasible, in intermediate and advanced techniques for Team Sports, Individual and Dual Sports, Combatives, Swimming, Dance, and Adapted Activities. A student may not repeat a class in beginning skills of any sport in which he has received a passing grade. Six credits are required for graduation and only 1 credit per quarter may be used to meet this requirement. All students except those excused for cause are required to pass the university swimming test. (See Required Courses earlier in the catalog.)


190 HISTORY OF PHYSICAL EDUCATION 1Q W 2. Basic survey of the history and philosophy of physical education throughout the modern era. 1 cr.

198 INTRODUCTION TO PHYSICAL EDUCATION 1Q W 3, Su e/y Prereq major or minor in Physical Education or c/l. History and principles of Physical Education, professional opportunities, relationship with other fields, and evaluation in general. Orientation for prospective majors and minors.

199 FIRST AID 1Q A W S 2. Su. Recognition and treatment of common injuries. Red Cross certification may be secured upon completion of course.

208 ADVANCED COACHING TECHNIQUES 1Q Su only 1 week 1. Intensive training in special techniques of coaching football and basketball and in athletic training. (Special coaching school.)

210 COACHING OF FOOTBALL 1Q W Su 3.

211 THEORY OF OFFICIATING FOOTBALL 1Q A Su 1. Principles, rules and techniques.

212 FOOTBALL OFFICIATING FIELD WORK 1Q A 1 Prereq 211. Practical experience.

220 COACHING OF BASEBALL 1Q W 3.

221 THEORY OF OFFICIATING SOFTBALL AND BASEBALL 1Q W 1. Principles, rules and techniques.

222 SOFTBALL AND BASEBALL OFFICIATING FIELD WORK 1Q S 1. Prereq 221. Practical experience.

231 OFFICIATING VOLLEYBALL (WOMEN) 1Q A 1. Theory, principles, rules and techniques. Practical experience in officiating intramural or collegiate matches. Rating given by Women's National Officials Rating Committee upon successful completion of requirements.

232 OFFICIATING BASKETBALL (WOMEN) 1Q W 2. Theory, principles, rules and techniques. Practical experience in officiating intramural or collegiate matches. Ratings given by Women's National Officials Rating Committee upon successful completion of requirements.

238 WATER SAFETY AND LIFE SAVING 1Q A W 2. Prereq 238 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 18th birthday.

240 CARE AND PREVENTION OF ATHLETIC INJURIES 1Q W 2, Su. Common athletic injuries, their causes, prevention and care. Practical work in bandaging and wrapping.

250 HUMAN ANATOMY 1Q A W 3. The systems of the body and their interdependence. Complementary study of structure and function of human body in varied and general fields.

301 TEACHING OF TEAM SPORTS FOR WOMEN 1Q W 2 Prereq 335. Methods and materials.

302 TEACHING OF INDIVIDUAL-DUAL SPORTS FOR WOMEN 1Q S 2 Prereq 335. Methods and materials.

310 THEORY OF COACHING BASKETBALL (MEN) 1Q A Su 3. Theory and practice in handling work in basketball.

311 THEORY OF OFFICIATING BASKETBALL (MEN) 1Q W 1. Principles, rules and techniques.

312 BASKETBALL OFFICIATING FIELD WORK (MEN) 1Q W 1 Prereq 311 or =. Practical experience.

321 COACHING OF TRACK 1Q W Su 2. Theory.

322 COACHING OF TRACK 1Q S 2. Practice.

324 METHODS AND MATERIALS IN SOCIAL DANCING 1Q A 2. Introductory to the study of social dancing.

325 METHODS AND MATERIALS IN MODERN DANCE 1Q W 2.

326 METHODS AND MATERIALS IN FOLK DANCING AND SQUARE DANCING 1Q S 2.

332 INSTRUCTOR'S FIRST AID 1Q S 2 Su Prereq Advanced Red Cross First Aid Certificate. Techniques and practice in teaching first aid. Red Cross Instructor's Certificate awarded upon successful completion of requirements, providing a student has reached 20th birthday. 1 cr.

335 METHODS OF TEACHING PHYSICAL EDUCATION 1Q A 3 Prereq 115 through 120. Required of all teaching majors and minors in H&PE. Materials for junior and senior high school programs. Demonstration and practice in teaching techniques. Lesson planning.


337 THE ELEMENTARY SCHOOL PHYSICAL EDUCATION PROGRAM 1Q S Su 3 Prereq 301. Principles and practice in the teaching of health and physical education and planning and preparing activities for different age levels; characteristics of growth and development related to course content. Credit not allowed for this and Social Welfare 362.

338 AQUATIC PROGRAM MANAGEMENT 1Q W 3 Prereq Sociology 101. Principles and practice in group leadership, program skills for various age groups and for special groups, such as the handicapped. Credit not allowed for this and Social Welfare 362.

339 TEACHING LEADERSHIP (CAMP LEADERSHIP) 1Q S 3 Prereq Sociology 101. Principles and practice in group leadership, program planning and preparation activities for different age groups; leadership concept and understanding in organized camping. Credit not allowed for this and Social Welfare 383.

340 ORGANIZATION AND ADMINISTRATION 1Q W 4, Su e/y Prereq 100. Principles and policies for the organization and administration of school physical education departments. Management of the physical plant.

342 APPLIED ANATOMY 1Q W 5, Su e/y. The bones, muscles and joints of the body. Bodily movements, joint mechanics, and the action of muscles in relation to physical education and activities of daily life.

343 INTRODUCTION TO PHYSICAL THERAPY 1Q W 4-5 Prereq 208. Theory and practice of massage. The treatment of defects which come within the field of physical education.

347 CLINICAL TRAINING IN PHYSICAL THERAPY 1Q a/q V 1-4 R-4 Prereq 338 and c/l. Practical experience in local physical therapy centers.

349 TEACHING OF COLLEGE PHYSICAL EDUCATION ACTIVITIES 1Q A W 2 R-4 Prereq 115-116-117, 118-119-120, 325, and c/l. Assigned teaching projects in college classes, under supervision.

FOR UNDERGRADUATES AND GRADUATES

363 CURRICULUM CONSTRUCTION 1Q W 3. Classification and analysis of physical education activities; criteria for selecting activities; construction of programs for specific situations.

372 SCHOOL HEALTH PROBLEMS 1Q W S, Su e/y. Required of all teaching majors and minors in H&PE and of all students seeking elementary teaching certification. School health problems in the areas of health services, healthful school environment, and health education.

375 PERSONAL HEALTH PROBLEMS (WOMEN) 1Q S 2 o/y. Fundamentals of healthful living; health counseling problems frequently encountered by the physical educator; follow-up programs possible under medical supervision.

377 PHYSIOLOGY OF EXERCISE 1Q W Su 3 Prereq Zool 262. The physiological effects of the different types of exercise on the functions of the human body.

385 KINESIOLOGY 1Q W 5 Prereq 338. Advanced study of muscle action and joint mechanics of the body.

386 PREVENTIVE AND CORRECTIVE PHYSICAL EDUCATION 1Q W Su 3 Prereq 337-338. Corrective exercise for specific segments to prevent or correct physical defects frequently encountered by the physical educator; follow-up programs possible under medical supervision.

390 SEMINAR a/q V 1-3 R-12. Special problems connected with physical education and recreation; reviews of current literature, and topical discussions.

395 TESING IN PHYSICAL EDUCATION 1Q A Su 3. Orientation to testing and measuring, administrative use of tests, elementary statistical techniques and procedures.

396 SUPERVISION IN PHYSICAL EDUCATION 1Q S Su 3 Prereq 338-339. Duties and responsibilities of supervisors in exerting effective leadership.
FOR GRADUATES

501 RESEARCH 1Q A Su 3 Prereq 503 or =. Specific tests for evaluation of organic, neuromuscular, psychological and social outcomes. Practice in construction and application of tests, and interpretation of results.

503 ADVANCED TESTS AND MEASUREMENTS 1Q A Su 4 Prereq 465 or =. Specific tests for evaluation of organic, neuromuscular, psychological and social outcomes. Practice in construction and application of tests, and interpretation of results.


551 ADMINISTRATION OF PHYSICAL EDUCATION AND ATHLETICS 1Q W Prereq 503-504 or consent of instructor. Problems involved in the administration of high school and college physical education and athletic programs: finance, personnel, public relations.

699 THESIS a/q V R-10.

HISTORY

as taught at Montana State University is a study of man's past activities with the hope that lessons may be learned which will be applicable in solving problems of the present era. For the student who is in search of a broad based education involving more than training for some particular occupation, this department offers a program of instruction calculated to provide knowledge and understanding of fundamental facts and the possibilities of present national and world situations.

Courses are offered in American, European, Far Eastern, Canadian, and Latin-American History. Many students combine the fields of History and Political Science.

The department offers the Master of Arts degree in History involving the completion of an acceptable thesis based on original research. Admission to graduate work requires an acceptable academic record as well as the equivalent of an undergraduate major in history.

Occupationally this department helps to prepare men and women for either the domestic or the foreign service of the federal government and for positions in state and local government. It not only provides teachers, lawyers, journalists, and businessmen with bases for the pursuit of their chosen occupations, but also furnishes knowledge and perspective for intelligent leadership in community action.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN HISTORY. In addition to the general requirements for graduation listed earlier, at least 20 credits must be in History and 20 credits in Political Science. In addition, at least 30 credits must be in History and 30 credits in Political Science. For all students, at least 30 credits must be in History and 30 credits in Political Science. All courses must be numbered 300 or above. The student must complete a minimum of 30 upper division credits in History and Political Science.

Either the completion of five quarters of a foreign language or the demonstration of a satisfactory reading knowledge of historical, legal or political science materials in such a language is required. With the consent of the Chairperson, the student may substitute the English language requirement with an equivalent in another language. The student must satisfy as many positive requirements for graduation as is possible during his freshman year. As a sophomore, he will be expected to register for History 241, 242 and 243, 251, 252 and 253, and Political Science 292, 293 leaving free approximately seven hours per quarter for the completion of required and electives. As a junior, the student will select a minimum of 31 hours from the offerings of the Department with Fulbright, French, Spanish, and Latin history courses. In addition, he must complete History 362, and 363 and also History 376, 345 and 346 as required or highly recommended courses. In lieu of or in addition to the above, electives may be chosen in Economics 101-102; Spanish 291-292; French 285-286-287; Spanish 243-244-245. A W 3. Enter either quarter. (207) The political, economic, social and religious development of Europe from the third century to the eleventh century. (208) A continuation of 207 to the fourteenth century. Some attention will be paid to cultural and intellectual developments.


285-286-287 HISPANIC-AMERICAN HISTORY 3Q A W S 4. Enter any quarter. (286) The new nationalism; sectionalism; Civil War and Reconstruction; the New West; agricultural and industrial development; changes in United States history; expansion of political and social institutions; the internal political, economic and social development of Spain and Portugal to the foundation of the Latin American colonies. (287) The Spanish and Portuguese colonies; the revolutionary period and the foundation of present day Latin American states. (287) The development of Latin American States in the 19th and 20th centuries.

FOR UNDERGRADUATES AND GRADUATES

303 HISTORY OF ANCIENT GREECE 1Q A 4 Prereq 101. An introductory summary of the Ancient Near Eastern Empires, and a survey of Greek culture during the period of the city-states, the hegemony of Alexander the Great, and the Hellenistic Age to the rise of Rome.

305 HISTORY OF ANCIENT ROME 1Q W 4 Prereq 101. Early Roman civilization as part of Hellenistic culture. The Republic, the Principate and the Empire.

306 MEDIEVAL CIVILIZATION 1Q S 3 Prereq 101, 207-208. Institutional, social and cultural progress in the Middle Ages.

309-310 RENAISSANCE AND REFORMATION 2Q A 3. (309) The political, economic, religious, and social development of Europe from 1300 to 1500. (310) Continuation to 1600.

311 THE AGE OF ABSOLUTISM 1Q W 3 Prereq 102. The political, economic, and social development of Europe from 1600 until the outbreak of the French Revolution.

314-315 FRENCH REVOLUTION AND NAPOLEONIC ERA 2Q A W Su 3. Enter either quarter. Prereq 102. (314) The French Revolution to 1793. (315) The Directory, the rise of Napoleon, the First Empire, 1795 to 1815.

318 THE EARLY 20TH CENTURY (1900-1933) 1Q S 3 Prereq 3 a college course in modern European history. Internal development of Britain and of France, and international relations. International rivalry prior to the First World War. The War and its aftermath.

319 CONTEMPORARY EUROPEAN HISTORY 1Q S Su 4 Prereq a college course in modern European history. The internal strains and the external rivalries of the principal European states since 1933.

321-322 CENTRAL EUROPE 3Q W S 4 Prereq a college course in modern European history. (321) The growth and development of the Federal State of Central Europe to 1815. (322) The growth and development of the Central European and the Balkans from 1815 to the present.

324-325-326 HISTORY OF RUSSIA 3Q A W S Su 4 Prereq a college course in history of Russia. (324) Russia from the Mongol-Yuan period to 1598. (325) Russia since 1598. (326) Russia since 1900. Revolution of 1861, 1905, the Reign of Nicholas I, the Russian Revolutions of 1917. The Soviet Regime. Russia in World War II.

329-330 MODERN FRANCE 2Q W S 3 Prereq 103 or =. (329) The political, economic, social, cultural and intellectual development of France from 1815 to 1850. (330) Continuation from 1850 to the present.

ECONOMIC HISTORY OF EUROPE 1Q A 4 Su 4. The economic development of Europe from the early Middle Ages to the present time.

MODERN WAR AND WESTERN SOCIETY 1Q S Su 3 Prereq 8 cr in history. A history of warfare from the French Revolution. Emphasis is placed on relationships of government and military power, and on their influence on theories of war.


HISTORY OF CANADA 1Q A 4, Su 3 Prereq 102, 241, or 251. A historical account of the history of Canada to the present time. Emphasis on Canadian-American diplomatic and economic relations; the growth of the Canadian West.

ENGLISH CONSTITUTIONAL HISTORY 2Q A W 3 Prereq 102, 252. (345) English constitutional development to the end of the Middle Ages. (346) English constitutional development since the Middle Ages.

ECONOMIC HISTORY OF ENGLAND 1Q A Su 4 Prereq 241-242. The economic and social background and development of modern England; the growth of the Empire.

AMERICAN COLONIAL HISTORY 1Q W 4 Prereq 242 or 251. Survey of recovery and settlement; development of colonial society; government in the colonies and in England; Anglo-French rivalry in America; The British colonial system and colonial administration.

AMERICAN HISTORY IN THE MID-NINETEENTH CENTURY 1Q W 4 Prereq 242, 251. A history of the American Revolution; the Declaration of Independence; organization of state governments; the Federal period, western lands, finance, commerce; The Constitution and its interpretation.

THE AGE OF JEFFERSON 1Q A Su 3 Prereq 251. The early national period concentrating on the ideas, development, and significance of the Federalists and Jeffersonians.

THE AGE OF JACKSON 1Q W Su 3 Prereq 252. American history from 1800 to 1840, emphasizing the growth, significance and decline of Jacksonian democracy.

CIVIL WAR AND RECONSTRUCTION 1Q S Su 3 Prereq 252. American history in the mid-nineteenth century, detailing the causes, events, and aftermath of the Civil War.


RECENT AMERICAN HISTORY 1Q S Su 3 Prereq 242 or 251. Survey of recovery and settlement; development of colonial society; government in the colonies and in England; Anglo-French rivalry in America; The British colonial system and colonial administration.


NORTH AMERICAN FRONTIERS 1Q A 3 Prereq 251-252. From the first settlements on the continent to the end of the 19th century. Emphasis is placed on the political, economic, and social factors and the interplay between the frontier and the older regions of the United States and the frontier.


HISTORIC SITES 1Q S Su V 1-3 R-4. Prereq either 365 or 367 or 368 or 369. The location and evaluation of historic sites in Montana and the Northwest. Field trips under the joint supervision of archaeologists and historians.

ECONOMIC HISTORY OF THE UNITED STATES 1Q S 4. Colonial economy; the expansion of the United States; industrial and agricultural developments; the heyday of laissez-faire; the great depression, the Second World War and after.

CONSTITUTIONAL HISTORY OF THE UNITED STATES 1Q S 4. Prereq 251-252-253. The origin and growth of the constitution with emphasis on the role of the Supreme Court in United States history.


THE FAR EAST 2Q A W 4, 381 Su 3 Enter either quarter, Prereq 5 cr in history. (380) Development of the social, economic, and political thought of China and Japan to the 17th century. (381) Continuation of 380 to the present with some stress on international politics in the Far East.

PROBLEMS IN HISTORY 1Q a/v V 2-4 R-9 Prereq 25 cr in History. Study of research in final systematic according to the needs and objectives of the individual student.

SPECIAL STUDIES IN HISTORY a/q V R-9 Prereq c/l. Offered by different instructors under various titles.

PROBLEMS IN HISTORICAL THOUGHT 1Q A Su 2. Prereq 25 cr in History. Study of the contributions of leading 19th-century European historians to the development of modern historical analysis and interpretation.

PROBLEMS IN AMERICAN HISTORIOGRAPHY 1Q S Su 2 Prereq 25 cr in History. Study of the contrasts in historical interpretation by selecting problems ranging from colonial to contemporary periods.

METHODS OF HISTORICAL RESEARCH 1Q A 2. Annotation, bibliography, and the analysis of source materials.

SEMINAR IN EUROPEAN HISTORY a/q V R-10. Prereq 30 cr in History including 491. Special problems in European history.

SEMINAR IN AMERICAN HISTORY a/q V R-10. Open to graduates who have 30 cr in History including 491. Special problems in American History.

THESIS a/q V R-15.

HOME ECONOMICS curricula are designed to provide opportunities for broad individual growth, social and cultural competence and professional occupation. Depending on the particular interests of the student, selection may be made from various fields of concentration as is indicated in the copy following.

Home Economics offers a program of education for personal and family life as a part of general education for majors and non-majors. Opportunities for graduates are many and varied. Positions may be with schools, hospitals, industrial concerns, manufacturers of food or appliances, utility companies, retail stores, and others, such as magazines and newspapers. Many students avail themselves of the broad opportunities for graduate work to qualify themselves for greater professional responsibilities.

Students who qualify may earn the Master of Education degree with a major emphasis in home economics. (See Master of Education degree.)

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN HOME ECONOMICS. A minimum of 50 credits in Home Economics are selected as follows:

Required for all majors: Home Economics 102, 141, 155, 157, 246, 303, 309, and 366.

The following courses are required according to the area of interest selected by the student.


2. TEACHING: Home Economics 151, 210, 258 or 338, 302, 305, 308, 310, 344, 386; Education 200, 205, 260, 406, 407; Special Methods to be taken in either Education or Home Economics 321, 421. These courses plus electives, combined with a teaching minor, will prepare teachers for the certificate to teach Home Economics in secondary schools.


4. AMERICAN DIETETIC ASSOCIATION INTERNSHIP: These requirements are variable. Students should consult their advisers.


6. COMBINED PROGRAMS: Students wishing to combine Home Economics with Journalism, Business, Radio and TV, or other fields should also consult with an adviser in the other area of interest.

SUGGESTED CURRICULUM IN HOME ECONOMICS

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<th>Year</th>
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(1) Students whose area of interest is Foods and Nutrition, Clothing and Textiles, and Dietetic Internship Training should elect Chemistry.
JOURNALISM

is a broad study of the various media of communication, with emphasis on the history, privileges, obligations and responsibilities of the media; methods by which events and ideas are adapted and their effects on readers and listeners. It includes instruction in the techniques for professional careers in newspaper work, radio and television, magazines and books, advertising and photography, public relations and promotion, free lance writing, and related fields. Approximately one-fourth of the academic work for a bachelor of arts degree in Journalism will be taken in the School of Journalism.

The other three-fourths of the total credits required for graduation will provide a background in the liberal arts, with emphasis on history, government, economics, philosophy, literature, foreign languages, psychology, and sociology.

The degree of Master of Arts in Journalism also is offered (see Graduate School). Undergraduates specialize in a field which may be news-editorial, radio-television, community newspapers, advertising, or magazines. They receive training in reporting, copy editing, advertising, and the history and law of journalism. Depending on their future specialty, they may also take courses in photography, typography, radio-television, magazine and feature writing and editing, public relations, editorial writing, and the international press. Instruction in many courses stresses ethics, legal and social responsibilities, and the opportunities for commercial success and public service.

Graduates obtain positions on newspapers in Montana and in other states, including many metropolitan centers. Some are foreign correspondents. Many are editors and publishers, or hold positions on radio and television stations, with technical magazines, in public relations firms or advertising agencies, and government agencies. Some are distinguished scholars, authors and teachers.

358 ADVANCED CLOTHING PROBLEMS 1Q A W S 3 (2-4) Prereq 157. The application of modern principles used in the construction of tailored garments. Experimentation with a variety of techniques and fabrics.

359 CLOTHING DESIGN 1Q A S 3 (2-2) Prereq Art 125. Art principles applied to designing family clothing. Adaptation of commercial patterns to original designs through flat pattern and draping methods.

360 ADVANCED TEXTILES 1Q S 3 (2-2) e/y Prereq 155. Development of new types of textiles, color, design selection, and furnishings. Home mechanics.

366 HUMAN DEVELOPMENT 3Q A W S 3 (2-3) Prereq Psych 110. The infant and pre-school child. Laboratory work in the nursery school.

367 HUMAN DEVELOPMENT 1Q W 3 (3-0) Prereq Psych 110. The school-age child in home, school and community.

368 HUMAN DEVELOPMENT AND FAMILY RELATIONSHIPS 1Q S 3 (3-0) Prereq Psych 110. The adolescent and young adult in home, school and community. Problems of aging.

406 NUTRITION IN DISEASE 1Q S 4 (2-9) Prereq 246. The symptoms of diseases, prophylaxis and feeding in disease.

421 ADVANCED PROBLEMS IN TEACHING HOME ECONOMICS 1Q A S 3 (3-0) Prereq Psych 321, Educ 405. Preparation for homemaking education in the upper grades and in high school.

433 INSTITUTION ORGANIZATION AND MANAGEMENT 1Q S 3 (3-0) Prereq 432. Efficient organization and administration of food service units, employment procedures, personnel schedules, records, food cost, and maintenance.

499 PROBLEMS IN HOME ECONOMICS a/q V 1-6 Prereq senior standing in Home Econ. Qualified students may select for study special problems in any of the major fields in home economics. Offered by various instructors under different titles.

FOR GRADUATES

501 SEMINAR IN HOME ECONOMICS a/q V 1-5 R-5 Prereq c/l. Group analysis of problems in home economics.

699 THESIS a/q V R-15.
### JOURNALISM—39

**HIGH SCHOOL PREPARATION.** In addition to the general requirements for admission to the University, it is recommended that the high school preparation include study of a foreign language and typing.

**SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN JOURNALISM.** In addition to the general requirements the candidate for the degree of Bachelor of Arts in Journalism must complete the recommended core curriculum of 29 hours, plus the requirements of his major, plus upper class electives to make a total minimum of 45 hours in Journalism. The core curriculum in Journalism, required of all majors, shall consist of Journalism 100, 270, 290, 291, 391, 392, 393, 394-491-492-493-Senior Seminar.

### CURRICULUM IN JOURNALISM

**Freshman Year**

- Journ 100—Introduction to Journalism 
- Cr.
- Eng 101-102-103—Freshman Composition 
- 3
- ROTC 101-201-103—Military Science or Air Sci (Men) 
- 2-4
- R&PE 100 (3 quarters)—Health and Physical Education 
- 3
- Additional courses to meet University requirements 
- 31-36

**Sophomore Year**

- Journ 270—Reporting 
- 3
- Journ 290—History and Principles of Journalism 
- 3
- ROTC 227-228-229—Military Science (Men) 
- 4-5
- R&PE 100 (3 quarters)—Health and Physical Education 
- 3
- Additional courses to meet University requirements 
- 35-42

**Junior and Senior Years**

- Journ 390—Principles of Advertising 
- 3
- Journ 280—Advertising Media 
- 3
- Journ 371—Advanced Reporting 
- 3
- Journ 372—Specialized Reporting 
- 3
- Journ 381—Advanced News Editing 
- 3
- Journ 491-492-493—Senior Seminar 
- 3
- Journ Electives (including sequence requirements) 
- 15-35
- Additional Electives 
- 55

Total recommended hours in Journalism 
- 90-110

Total recommended hours in General Education 
- 135

### JOURNALISM CURRICULUM

**NEWS-EDITORIAL SEQUENCE:** Additional 9 hours required to be chosen from Journalism 287, 380, 470, 485.

**ADVERTISING SEQUENCE:** An additional 9 hours required to be chosen from Radio-Television 246; Journalism 362, 363, 394.

**MAGAZINE SEQUENCE:** An additional 9 hours required to be chosen from Journalism 327, 332, 333, 334.

**RADIO-TELEVISION SEQUENCE:** An additional 9 hours required to be chosen from Radio-Television 242; Journalism 345, 346, 348.

**COMMUNITY JOURNALISM SEQUENCE:** An additional 9 hours required to be chosen from Journalism 350, 351, 352, 364, 405.

Note: Students wishing to major primarily in radio or television journalism should take the Radio-Television sequence in Jour­nalism. The College of Arts and Sciences and the School of Jour­nalism also offer a curriculum leading to a Bachelor of Arts degree in Radio-Television (see Radio-Television).

### FOR UNDERGRADUATES

*For explanation see Index under "Symbols"

100 **INTRODUCTION TO JOURNALISM** 1Q A W S Su 3. Open to non-majors. History, organization, techniques and responsibil­ities of the media of mass communication, with emphasis on the newspaper.

128 **TYPOGRAPHY** 1Q A W S Su 2 Prereq c/l. Problems of typographical design and pagination. Elementary work in printing and in the handling of type.

196 **CURRENT AFFAIRS** 1Q A W S Su 1. Open to non-majors. Current history of the world and its background, relationships and probable influence.

227 **ELEMENTARY PHOTOGRAPHY** 1Q A W Su 3 Prereq c/l. Open to non-majors. Photographic equipment, materials, and facilities with practice in taking of pictures under varied conditions and processing of films and prints.

270 **REPORTING** 1Q A W S 3. Open to non-majors. Ground-work in gathering, writing and evaluating news.

290 **HISTORY AND PRINCIPLES OF JOURNALISM** 1Q S 3. Open to non-majors. American journalism from colonial times against a background of U.S. history with attention to the struggle for freedom of expression.

327 **NEWS PHOTOGRAPHY** 1Q S 3 Prereq 227. Photographic reporting with emphasis on picture possibilities, significance, interest, and impact. Practice with news cameras.

332 **MAGAZINE MAKEUP AND EDITING** 1Q A S Prereq c/l. Open to non-majors. Theory and practice of editing magazines. Practice includes use of type and illustrations, and adapting layout to content.

333 **MAGAZINE ARTICLE WRITING** 1Q W Su 3 Prereq c/l. Open to non-majors. The preparation and writing of articles for magazines of general circulation. Techniques of analyzing and selling to magazine markets.

334 **TRADE AND TECHNICAL JOURNALISM** 1Q A S 3 Prereq c/l. Open to non-majors. The writing and editing of trade and business journals, technical and specialized publications.

335 **PROMOTION AND PUBLIC RELATIONS** 1Q A W S Su 3 Prereq c/l. Open to non-majors. The techniques and theories of promotion and public relations.

345 **NEWSCASTING** 1Q A S Prereq 270. Radio and tele­vision newscast. Preparation and delivery of radio and tele­vision news broadcasts.

346 **RADIO-TELEVISION PUBLIC AFFAIRS** 1Q W 3 Prereq 345. Radio and television special events and information programs, commentaries, sports, interviews and interpretation. Practice in newscasting.

350-351 **COMMUNITY JOURNALISM** 2Q A W 2 Prereq 270. News, editorial, circulation, and advertising problems of weekly and small daily newspapers.

352 **NEWSPAPER MANAGEMENT** 1Q A W S 3 Prereq 360. Problems of operation of daily and weekly newspapers.

359 **PRINCIPLES OF ADVERTISING** 1Q A S 3. Open to non-majors. Theory and techniques with emphasis on the role of adver­tising as it applies to the producer, consumer, and distributor.

361 **ADVERTISING SALES** 1Q A W S 2 Prereq 360 or concurrent registration. Preparation, promotion, and sales of advertis­ing. Lecture and newspaper staff work.

362 **ADVERTISING MEDIA** 1Q W 3 Prereq c/l. Open to non-majors. Evaluation of advertising media; rate structures and preparation of advertising and schedules.

363 **ADVERTISING LAYOUT AND COPY** 1Q S 3 Prereq 360. Application of typographical and advertising principles to preparation of layout and copy.

364 **RETAIL STORE ADVERTISING** 1Q S 3 Prereq 360. Open to non-majors. Integration of retail store merchandising among advertising media. Technical aspects of advertising schedules for retail stores.

371 **ADVANCED REPORTING** 1Q A W S 2 Prereq 270. News coverage, reporting and publishing problems.

372 **SPECIALIZED REPORTING** 1Q A W S 2 Prereq 371. Specialization in fields of depth reporting.

380 **NEWS EDITING** 1Q A W 3 Prereq 270. Instruction and practice in revision of copy, headline writing, use of references and principles of local and wire news editing.

381 **ADVANCED NEWS EDITING** 1Q A W S 2 Prereq 380. Editing and makeup problems.

### FOR UNDERGRADUATES AND GRADUATES

316 **SCHOOL PUBLICATIONS** 1Q S e/y Su 3. Prereq c/l. Open to non-majors. For students who plan to teach journalism courses in high schools or act as advisers to school publications.

317 **SCHOOL PUBLIC RELATIONS** 1Q S Su only 3 Prereq B.A. degree or teaching experience. The principles of developing better understanding among the school, the press, and the community. For school administrators and teachers.

390 **PUBLIC OPINION** 1Q A W S 3. Open to non-majors. Theories of public opinion, factors involved in its formation, and methods used in its measurement.

397 **LAW OF JOURNALISM** 1Q S 3. Legal guarantees and limitations of the right to gather and publish news and to comment on it.

399 **ADVANCED JOURNALISM PROBLEMS** 1-3Q A W S V Prereq consent of the dean. Training and research in advanced journalism problems.

440 **CINEMATOGRAPHY** 1Q S 3 Prereq 227 or —, and 12 hours in radio-television courses. Motion picture news photography. Film for television.

470 **REPORTING PUBLIC AFFAIRS** 1Q W 3. Laboratory work in coverage of political and governmental news at the city, county, state, and federal levels.

491-492-493 **SENIOR SEMINAR** 3Q A W S 2 Prereq senior standing in Journalism. Investigative methods of editing, study of several aspects of American society which constitute the back­ground for many news stories, and practice in research methods.

495 **EDITORIAL WRITING** 1Q S 3. The editorial pages of leading newspapers; practice in research and the writing of editorials.
MASS MEDIA IN MODERN SOCIETY 1Q W 3 Prereq q/l. Interrelationships between media of mass communication and diverse facets of modern society.

INTERNATIONAL COMMUNICATIONS 1Q S 3 Prereq q/l. Media of information in other countries, with emphasis on newspapers.

FOR GRADUATES

THEORIES OF COMMUNICATION 1Q A 3 Prereq consent of the dean. Structure, processes and effects of communication.

METHODS OF JOURNALISM RESEARCH 1Q A W 3 S Prereq consent of the dean. Problems and techniques in study and analysis of communications.

RESEARCH IN JOURNALISM 1-3Q A W S Su V Prereq consent of the dean.

THESIS a/q V R-15.

LAW

is the study of the official rules and regulations under which people live in organized American society; of the methods by which such rules are devised and applied; of the part that lawyers, judges, and public officials play in the application of such rules; and of the specialized techniques, practices, and procedures involved.

Law studies primarily involve preparation and class recitations and lectures on the basis of illustrative court opinions collected in course "casebooks." Special attention is also given to practice court work, in which the students are required to prepare and try cases as well as argue appeals. There is also training in the use of law books and in legal writing. The curriculum is designed to afford preparation for practice anywhere in the United States, but attention is also given to the law of Montana.

The Supreme Court of Montana admits graduates to practice without examination. Most graduates become practicing attorneys. Others enter government service, business, or finance with or without additional studies in these latter fields. Some take advanced or more specialized studies (such as taxation) at eastern institutions; graduates with the requisite scholarship standing are readily accepted by other law schools specializing in more advanced legal education. They are also to be found in the ranks of leading practitioners in many large cities of the United States.

CALENDAR

FALL SEMESTER, 1964

September 21-22, Monday and Tuesday Orientation of New Law Students
September 22, Tuesday Registration
September 23, Wednesday Classes begin at 8:00 a.m.
November 11, Wednesday Veterans Day—no classes
November 25, Wednesday Thanksgiving vacation begins after last class
November 30, Monday Classes resume at 8:00 a.m.
December 19, Saturday Christmas vacation begins after last class
January 4, 1965, Monday Classes resume at 8:00 a.m.
January 24-30, Monday through Saturday Semester Examinations

SPRING SEMESTER, 1965

February 2, Wednesday Registration
February 4, Thursday Classes begin at 8:00 a.m.
March 20, Saturday Spring vacation begins after last class
March 29, Monday Classes resume at 8:00 a.m.
May 25-June 1, Tuesday through Thursday Semester Examinations
June 7, Monday Commencement

FALL SEMESTER, 1965

September 20-21, Monday and Tuesday Orientation of New Law Students
September 21, Tuesday Registration
September 22, Wednesday Classes begin at 8:00 a.m.
November 17, Thursday Thanksgiving vacation begins after last class
November 24, Wednesday Classes resume at 8:00 a.m.
December 18, Saturday Christmas vacation begins after last class
January 3, 1966, Monday Classes resume at 8:00 a.m.
January 24-28, Monday through Saturday Semester Examinations

SPRING SEMESTER, 1966

February 2, Wednesday Registration
February 4, Thursday Classes begin at 8:00 a.m.
March 13, Saturday Spring vacation begins after last class
March 28, Monday Classes resume at 8:00 a.m.
May 24-May 31, Tuesday through Tuesday Semester Examinations
June 6, Monday Commencement

GENERAL STATEMENT: The Law School is accredited by the American Bar Association and the Association of American Law Schools. Organization of instruction is upon the semester basis, the academic year being divided into two approximately eighteen weeks each, including vacation periods. For detailed information concerning facilities, descriptions of courses, and miscellaneous administrative regulations the applicant should consult the Law School Bulletin.

REQUIREMENTS FOR ADMISSION: The Law faculty passes on all applications for admission to the Law School. Each applicant for the Law School must establish (1) that he is a graduate of an approved college or university, and (2) that he has successfully completed three years of an approved combination program with a minimum index of 2.0 in all work for which he has registered and received a grade or (3) that he has completed, in an approved college or university, three fourths of the work required for an undergraduate degree with an average, in all work for which he has registered and received a grade, equivalent of that required for graduation from the institution from which he received his last degree, subject to the condition, nevertheless, that he qualify for such degree prior to receiving a Law degree. Non-theory courses are not acceptable under the provisions of subdivision (2) and (3) with requirement in military drill and physical education are acceptable to the extent of total completion of the total credit offered for admission. In addition to the foregoing requirements, no applicant will be admitted who has demonstrated a lack of capacity for self expression as evidenced, for example, by failure to achieve at least a grade of C (in English composition. In view of the fact that graduates of the Law School are admitted to the practice of law without taking a bar examination, an applicant from a school other than Montana State University who has not completed his college work is not to be admitted unless he has a high scholastic average and is exceptionally qualified to pursue the study of law. An applicant enrolled in a combination approved program who has qualified for an undergraduate degree is not likely to be admitted unless he has a high scholastic average and is exceptionally qualified to pursue the study of Law.

The Law School Admissions Test is required of all applicants for admission to the Law School. It should be taken during the year preceding the one for which admission is sought. Information concerning the Test and application forms may be obtained from the School of Law or from the Educational Testing Service, P.O. Box 592, Princeton, New Jersey.

A number of combination programs have been formulated by the Law School in cooperation with various departments of the University. These include Accounting and Law, Business Administration and Law, Economics and Law, Geology and Law, History and Political Science and Law, and Philosophy and Law. Combination programs in other departments, if duly authorized, will be recognized. Students enrolled in approved combination programs must have completed three years of an approved combination program in the department of their concentration at the end of the first year of law and the LL.B. degree at the end of the third year of law. Pre-law students are to be admitted if they have completed 30 semester hours of college or university, three fourths of the work required for an undergraduate degree is not likely to be admitted unless he has a high scholastic average and is exceptionally qualified to pursue the study of Law.

Special students are not admitted to the Law School. Students other than those qualified for admission may register for selected courses in law with the approval of the Dean of the Law School and the instructor of the course.

All applications for admission to the Law School must be submitted at least two weeks prior to the contemplated time of entrance. In addition to the credentials required by the Registrar of the University, the applicant must submit to the Law School (a) an official transcript of all work previously undertaken; (b) a verified questionnaire, on a form prescribed by the Law School, dealing with the moral character and fitness of the applicant as a prospective member of the legal profession; (c) a report of his grade on the Law School Admissions Test, and (d) a passport size photo.

A fee of $15.00 must be paid at the time of making application. No refunds will be made if the student enters the semester indicated on the application for admission, this fee may be credited to the registration fee as described under Financial Obligations earlier in the catalog.

ADMISSION TO ADVANCED STANDING: Applicants for admission to the Law School with advanced standing must satisfy the requirements for admission to the Law School. In addition, the student must have completed one year of study which he has registered and received a grade equivalent to that required for graduation from the institution attended; (3) that the applicant is in good standing and in the Law School previously attended; and (4) that the applicant is eligible to continue in this law School under the policies specified herein. An applicant is not likely to be admitted unless he has a very high scholastic average in the law work previously taken and is exceptionally qualified to pursue the study of law.
BASIS FOR EXCLUSION: (1) Failures: A student who has failed in more than 10 credits in the first or second semester of law study will be automatically dropped from the Law School. Any student who has completed two semesters of law study but thereafter fails two courses in any semester or who has failed a total of more than ten semester credits during one calendar period of law study, will be automatically dropped from the Law School. (2) Weighted Average: A student otherwise eligible to continue, who has obtained an index of 1.5 or less at the end of the first two semesters of law study in all law courses for which he has registered and received a grade, will be dropped. A student otherwise eligible to continue, who has obtained an index between 1.5 and 2.0 at the end of his first two semesters of law study in all law courses for which he has registered and received a grade, will be dropped on probation. A student on probation who fails to secure an index of 2.0 in law courses not previously taken for which he had registered and received a grade in any semester subsequent to being placed on probation, will be dropped from the Law School. A student who fails to obtain an index of 2.0 at the end of his fourth semester of law study in all law courses for which he has registered and received a grade, or fails to maintain such an index thereafter, will be dropped from the Law School.

The faculty reserves the right to require a student to repeat any course in which he has received a grade lower than C, but no course may be repeated without the approval of the faculty.

REQUIREMENTS FOR GRADUATION: Candidates for the degree of Bachelor of Laws (LL.B.) must: (1) be graduates of an approved college or university; (2) complete six semesters in residence at an approved law school, the last two of which must be at Montana State University; (3) complete ninety semester hours of law with an index of 2.0 in all law courses for which the student has registered and received a grade; and (4) complete the following required courses: Constitutional Law, Criminal Procedure, Federal Taxation and Legal Writing.

A candidate for the degree of Bachelor of Laws who has fulfilled the requirements for graduation will not be recommended for the degree if, in the opinion of the majority of the law faculty, he is disqualified in accordance with generally accepted standards for admission to the bar.

A student may not register nor receive credit for more than 16 hours of law in a semester.

FIRST YEAR

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<td>511-512-Contracts I, II</td>
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<tr>
<td>515-Criminal Law</td>
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<td>531-532-Introduction to Law I, II</td>
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<td>535-536-Property I, II</td>
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<td>540-Remedies</td>
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</tr>
<tr>
<td>543-544-Torts I, II</td>
<td>3</td>
</tr>
</tbody>
</table>

SECOND YEAR

<table>
<thead>
<tr>
<th>Second Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>555-554-Agency and Business Organizations I, II</td>
</tr>
<tr>
<td>557-Civil Procedure II</td>
</tr>
<tr>
<td>561-560-Commercial Transactions I, II</td>
</tr>
<tr>
<td>564-Constitutional Law</td>
</tr>
<tr>
<td>569-570-Estate Planning I, II</td>
</tr>
<tr>
<td>572-Law Review I</td>
</tr>
<tr>
<td>583-582-Real Property I, II</td>
</tr>
<tr>
<td>590-Professional Responsibility</td>
</tr>
</tbody>
</table>

THIRD YEAR

<table>
<thead>
<tr>
<th>Third Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>606-Administrative Law</td>
</tr>
<tr>
<td>609-Creditors' Rights</td>
</tr>
<tr>
<td>625-Criminal Procedure</td>
</tr>
<tr>
<td>631-622-Federal Taxation I, II</td>
</tr>
<tr>
<td>638-Labor Jurisdiction</td>
</tr>
<tr>
<td>641-Labor Law</td>
</tr>
<tr>
<td>645-Law Review II</td>
</tr>
<tr>
<td>646-Legal Writing III</td>
</tr>
<tr>
<td>647-Law Review IV</td>
</tr>
<tr>
<td>650-Mining Law (Seminar)</td>
</tr>
<tr>
<td>653-Municipal Corporations (Seminar)</td>
</tr>
<tr>
<td>661-Quebec Law</td>
</tr>
<tr>
<td>671-Secured Transactions</td>
</tr>
<tr>
<td>676-Social Legislation (Seminar)</td>
</tr>
<tr>
<td>681-Trade Regulations (Seminar)</td>
</tr>
<tr>
<td>688-Water Law</td>
</tr>
</tbody>
</table>

*Required courses

COURSES

505 CIVIL PROCEDURE I 1 Sem A 3. The nature, the extent and the review by courts of proceedings by agencies, commissions and bureaus of government.


555 CIVIL PROCEDURE I 1 Sem A 3. The steps in a civil action from the pleadings to the trial.

557 CIVIL PROCEDURE II 1 Sem A 3. The steps in a civil action from the pleadings to the trial.

561-560 COMMERCIAL TRANSACTIONS I, II 2 Sem A 2, S 3. The transfer of interests in real property. Understand the role of commercial enterprises and their corporation in the American free enterprise system.

564 CONSTITUTIONAL LAW 1 Sem S 4. The place of written constitutions in our legal system and the judicial function of interpreting written constitutions.

572 LAW REVIEW I 2 Sem A S 3. Continuous. The formation and the performance of contracts and the elements of mutual consent, consideration, assignment and discharge.


573 EVIDENCE 1 Sem A 4. The production and presentation of evidence in the course of a trial.

581 FEDERAL TAXATION I 1 Sem A 4. The federal income tax relating to individual trusts, partnerships and corporations.

582 FEDERAL TAXATION II 1 Sem S 7. The federal estate and gift tax laws.

591-322 INTRODUCTION TO LAW I, II 2 Sem A 1, S 2. Law books and their use and the preparation of legal memoranda and reports with emphasis upon legal writing.

596 JURISPRUDENCE 1 Sem S 2. The nature and purposes of law and the nature of the judicial process and its assignments and discharge.

641 LABOR LAW 1 Sem A 2. The elements of collective bargaining and labor management relations.


653 Legal Writing I, II 2 Sem A S 1. The drafting of legal instruments, moot court briefs and legal memoranda.

696 LEGAL WRITING III 1 Sem S 1. The preparation of a research paper under supervision of a member of the faculty.

697 LEGISLATION 1 Sem A 2. The preparation, passage and interpretation of legislation.

690 MINING LAW 1 Sem S 2. Location of mining claims, patent procedure and limitations upon extractions of precious minerals.

693 MUNICIPAL CORPORATIONS 1 Sem A 2. The administration of government with emphasis upon local governing bodies and their relations with state and federal counterparts.

696 OIL AND GAS 1 Sem A 3. The production, conservation and transportation of petroleum.

699 PROFESSIONAL RESPONSIBILITY 1 Sem S 2. The lawyer as counselor, advocate, citizen and public servant with emphasis upon the nature and extent of professional responsibility.

695 PROPERTY I 1 Sem A 2. The law of personal property, possession, and the requisites for acquiring title to land.

696 PROPERTY II 1 Sem S 4. The transfer of interests in real property.

697 REMEDIES 1 Sem S 3. The judicial remedies available for injuries to persons and property, for breach of enforceable agreements and for transactions induced by misrepresentation or mistake.

697 SECURED TRANSACTIONS 1 Sem A 3. The use of real property security and the nature and foreclosure of mortgages.

698 SOCIAL LEGISLATION 1 Sem S 2. Social security, worker's compensation, unemployment compensation and wages and hours legislation.

670 TRADE REGULATIONS 1 Sem A 2. The regulation of private business with emphasis upon monopoly, anti-trust, trade-marks and unfair competition.

698 WATER LAW 1 Sem S 2. The appropriation and use of water and of the relative rights of federal and state governments in the use of this natural resource.
LIBERAL ARTS

The Liberal Arts Curriculum includes Literature, Philosophy, Art, Foreign Languages and the Social Sciences. The latter includes Anthropology, Economics, History, Political Science, Sociology and Geography.

Four years are required for the degree of Bachelor of Arts. This program permits the student to work in a combination of the above areas rather than in a particular one of them and affords a varied selection from which to choose. During his last two years the student does more advanced work in two areas of his choice.

This curriculum is designed for the student who wants a liberal education with emphasis on the humanities and social sciences. It also provides a broad background for students who decide to prepare for teaching. Those who elect to teach may qualify to do so by taking additional work in education.

Students must have completed, or be eligible for, English 101 in order to major in this program. Upperclassmen transferring into this program should have at least a C average in all credits attempted. The liberal arts curriculum is not designed for the student who is undecided as to his major.

Following are the special requirements for the Bachelor of Arts degree with a major in Liberal Arts:

University requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition 101-102-103</td>
<td>9</td>
</tr>
<tr>
<td>Group I (Lab sciences and mathematics recommended)</td>
<td>12</td>
</tr>
<tr>
<td>Foreign Languages</td>
<td>3 or 30</td>
</tr>
<tr>
<td>Physical Education (4 quarters)</td>
<td>6</td>
</tr>
<tr>
<td>Military Science (men)</td>
<td>6-9</td>
</tr>
<tr>
<td>Military Science (women)</td>
<td>59-66</td>
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</tbody>
</table>

Major Requirements (Courses under 200)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 231-232-233</td>
<td>9</td>
</tr>
<tr>
<td>Humanities (General 151-152-153)</td>
<td>9</td>
</tr>
<tr>
<td>Anthropology, Economics, Geography, Psychology, Sociology, (any two)</td>
<td>15</td>
</tr>
<tr>
<td>History or Political Science or both (History 101-102-103 or 251-252-253 recommended)</td>
<td>12</td>
</tr>
<tr>
<td>Literature (English 211-212-213 and 231-232-233 recommended)</td>
<td>12</td>
</tr>
<tr>
<td>Philosophy (Philosophy 201-202-203 recommended)</td>
<td>10 or 70</td>
</tr>
</tbody>
</table>

Major Requirements (Courses 200 and above)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Art 231-232-233</td>
<td>9</td>
</tr>
<tr>
<td>2. Humanities (General 151-152-153)</td>
<td>9</td>
</tr>
<tr>
<td>3. Anthropology, Economics, Geography, Psychology, Sociology, (any two)</td>
<td>15</td>
</tr>
<tr>
<td>4. History or Political Science or both (History 101-102-103 or 251-252-253 recommended)</td>
<td>12</td>
</tr>
<tr>
<td>5. Literature (English 211-212-213 and 231-232-233 recommended)</td>
<td>12</td>
</tr>
<tr>
<td>6. Philosophy (Philosophy 201-202-203 recommended)</td>
<td>10 or 70</td>
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</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition 301-302-303</td>
<td>9</td>
</tr>
<tr>
<td>Group I Requirements</td>
<td>4-5</td>
</tr>
<tr>
<td>Electives (selected from upper division courses)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 186

LIBRARY SERVICE

Courses are designed to prepare students for professional work in small and medium sized public and college libraries. Students preparing for school library work should work toward a major in the School of Education with a minor in library service. Students preparing for public or college library work should register for the four-year program leading to the degree of Bachelor of Arts with a major in library service.

This program is so planned that the student is given basic preparation for admission to a graduate library school if he wishes to prepare for work in larger libraries. The course outline here is primarily designed to meet the needs of Montana for trained librarians, but will also prepare the student for library work in similar libraries in the Northwest and other areas.

The College of Arts and Sciences and the School of Education offer the curriculum in Library Service.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN LIBRARY SERVICE

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 with a major in Library Service:

Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 101-102-103 - Freshman Composition</td>
<td>9</td>
</tr>
<tr>
<td>History 101-102-103 - Development of Western Civilization</td>
<td>9</td>
</tr>
<tr>
<td>French or German 101, 102, 103 - Elementary French or German</td>
<td>15</td>
</tr>
<tr>
<td>PSCH 119 - Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>HAPE 100 (3 quarters)</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>41 or 45</td>
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</table>

Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 124 - Introduction to Concert Music</td>
<td>2</td>
</tr>
<tr>
<td>French or German 201-202 - Intermediate</td>
<td>6</td>
</tr>
<tr>
<td>History 250, 253 - United States History</td>
<td>6</td>
</tr>
<tr>
<td>Engl 211, 212, 213 - Intro to Major British Writers</td>
<td>9</td>
</tr>
<tr>
<td>Econ 201-202-203 - Principles of Economics</td>
<td>10</td>
</tr>
<tr>
<td>Group I Requirements</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>45</td>
</tr>
</tbody>
</table>

Juniors Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 232, 233 - Intro to Major American Writers</td>
<td>6</td>
</tr>
<tr>
<td>Pol Sci 101 - Intro to Government</td>
<td>4</td>
</tr>
<tr>
<td>Speech 111 - Principles of Speech</td>
<td>8</td>
</tr>
<tr>
<td>Educ 341 - Public Library Administration</td>
<td>4</td>
</tr>
<tr>
<td>Educ 344 - Cataloging and Classification</td>
<td>4</td>
</tr>
<tr>
<td>Educ 345 - Materials Selection and Bibliography</td>
<td>4</td>
</tr>
<tr>
<td>Educ 346 - Reference Materials</td>
<td>4</td>
</tr>
<tr>
<td>Educ 347 - Audiovisual Communication</td>
<td>3</td>
</tr>
<tr>
<td>Art 251, 252, 253 - History of Art</td>
<td>9</td>
</tr>
<tr>
<td>Group I Requirements</td>
<td>3</td>
</tr>
<tr>
<td>Electives (selected from upper division courses)</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>51</td>
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</tbody>
</table>

Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educ 340 - Survey of Children's Literature</td>
<td>4</td>
</tr>
<tr>
<td>Educ 442 - Library Work with Children</td>
<td>3</td>
</tr>
<tr>
<td>Educ 444 - Library Seminar</td>
<td>4</td>
</tr>
<tr>
<td>Educ 445 - Library Practice</td>
<td>5-10</td>
</tr>
<tr>
<td>Engl 498 - Seminar (bibliography)</td>
<td>2</td>
</tr>
<tr>
<td>Journ 335 - Promotion and Public Relations</td>
<td>3</td>
</tr>
<tr>
<td>Soc 201 - Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Soc 303 - Social Science Methods</td>
<td>3</td>
</tr>
<tr>
<td>Electives (selected from upper division courses)</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>45</td>
</tr>
</tbody>
</table>

MATHEMATICS

is concerned not only with formulas and processes which give the answers to problems, but with the fundamental ideas which are the basis for modern developments in most other sciences. It is a science in its own right and is still growing rapidly.

Graduates find a growing range of occupations open to them—in engineering, the sciences, economics, or business. They may teach in high schools or with further training, in colleges and universities. Industry and government make increasing use of skilled mathematicians. Such positions may involve work ranging from elementary computations to highly complicated statistical procedures and research.

Modern high speed computing devices, instead of replacing mathematicians, have increased their usefulness. A high degree of mathematical skill is required to put a problem into a form which the machine can handle.

The Bachelor of Arts, Master of Arts, Master of Science, and Master of Science in Teaching degrees are offered (see Graduate School).

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 a second year of algebra.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN MATHEMATICS

In addition to the general requirements for graduation listed earlier in the catalog, the following requirements must be completed for the Bachelor of Arts Degree with a major in Mathematics: Math 116 or exemption, 118, 231-232, 233. A foreign language: French, German, or Russian (or a combination of them) is required.

1. Students planning to enter graduate work or industry are required to take Mathematics 309, 310, 311, 312, 313, 314, 319, and six credits in other science Mathematics courses, including three credits in courses numbered above 300. Students select areas in sciences from Botany, Chemistry, Geology, Microbiology, Physics, or Zoology and must present 18 credits in one science and 18 credits in the other selected science. The student may substitute French, German, or Russian for these sciences, provided the language substituted is not one offered to satisfy the language requirement listed earlier in the catalog. An alternative to the requirement of the two sciences or the one science and a language is for the student to present a second major in one of the schools or departments within the University.
2. Students selecting the teaching option are required to take Mathematics 125, 324, 328, 422, 522, and 524, and 5 credits in other approved Mathematics courses numbered above 300.

MATERIAL OF ARTS OR MASTER OF SCIENCE IN TEACHING.

See statement under Graduate School.

REQUIREMENTS FOR THE MASTER OF ARTS DEGREE IN MATH.

The candidate for the Master of Arts degree in mathematics must present at least 27 credits selected from the following: 319, 322, 324, 328, 412, 415, 417, 419; Mathematics 422, 424, 426; Mathematics 411, 413, 440; Mathematics 441, 442, 443; Mathematics 444, 445; Mathematics 446, 447; Mathematics 533; Mathematics 551, 552, 553. The candidate must complete two of the eight sequences above. One of the two completed sequences must be either Mathematics 441, 442, 443, or Mathematics 551, 552, 553.

FOR UNDERGRADUATES

For explanation see Index under "Symbols".

001 (100) INTERMEDIATE ALGEBRA 1Q A W S 0.

112 MATHEMATICS FOR BUSINESS STUDENTS 1Q W S 5

Prereq 001 or exemption by examination. Selected topics from algebra, analytic geometry, probability, series, progressions, annuities, solutions of systems of linear equations and inequalities, linear programming. (Credit not allowed for both 112 and 116.)

113 TRIGONOMETRY 1Q A W S Su 3 Prereq 001 or exemption by examination. Trigonometric functions and their graphs, radius measurement, identification of function formulas, laws of sines and cosines, inverse trigonometric functions and their graphs, applications. (Credit not allowed toward degree in Mathematics.)

118 INTRODUCTION TO ANALYTIC GEOMETRY AND CALCULUS 2Q A W S 5

Prereq 113 or 116 or satisfactory performance in an examination in intermediate algebra. The concepts of limit, continuity, differentiation, and integration. (Intended primarily for those enrolled in NSF Institute. A limited number of other students may enroll by special permission.)

131-312-319 INTRODUCTION TO ABSTRACT ALGEBRA 3Q A W S


315 ORDINARY DIFFERENTIAL EQUATIONS 1Q S 3 Prereq 252.

MEDICAL TECHNOLOGY

is a combined study of chemistry, physics, physiology and microbiology. A medical technologist is one who, by education and training, is capable of performing, under the supervision of a pathologist or other qualified physician, the various chemical, microscopic, bacteriologic and other medical laboratory procedures used in the diagnosis, study and treatment of disease. Four years are required to earn the degree of Bachelor of Science in Medical Technology. The first two years are devoted to the development of a sound foundation in physics, chemistry and biology and in obtaining an understanding of social science and cultural subjects. The last two years are designed to develop efficiency in the fields of microbiology and clinical methods.

To be certified by the Board of Registry, a student after satisfying the minimum course requirements, must have an internship of at least 12 consecutive months in an approved school of Medical Technology endorsed by the American Medical Association. Schools of Medical Technology are located in every state in the Union, the District of Columbia, Puerto Rico and the Canal Zone. After successful completion of the internship, the student receives a diploma from the Board of Registry, certifying his qualification as a medical technologist. Although this Certification is desirable, persons receiving the B.S. in Medical Technology are qualified bacteriologists and can obtain positions in many laboratories as technicians. Medical Technologists are in demand in hospital laboratories, in physicians' offices, research institutions, and in federal and state health departments.

Most medical technology schools require at least 3 years of college work and one year of hospital practice. The curriculum in this department has been arranged so as to allow the student to complete all course requirements during the first three years. It is possible then to take three years of college work and 12 months of hospital practice to be certified by the Board of Registry as a Medical Technologist.

Two options leading to a Bachelor of Science degree in Medical Technology are offered in the Department of Botany and Microbiology. Option I consists of four years of academic studies at the University leading to a B.S. degree in Medical Technology. These students then fulfill the 12 months of hospital practice requested by the Board of Registry. Under Option II the student completes B.S. in Medical Technology after approximately 3 1/2 years of academic studies at the University and 12 months of hospital practice. Option I has a decisive advantage in giving the student a broader preparation for Medical Technology and a more balanced liberal education.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, it is recommended that high school preparation include Algebra, Geometry, Trigonometry, Chemistry, Physics and a foreign language.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN MEDICAL TECHNOLOGY. In addition to the general requirements listed earlier in the catalog, the following courses are required for the Bachelor of Science in Medical Technology: Microbiology 200, 302, 400; Physics 111, 112, 113; Zoology 111, 112, 113, 200, 202; Chemistry 121, 122, 123, 243, 261, 262, 311, 312. A minimum total of 45 credits from Microbiology courses listed above and any other credit hours toward his B.S. degree for the successful completion of the hospital practice.

In the senior year, a minimum of 15 elective credits in residence and successful completion of the hospital practice in a hospital approved by the American Society of Clinical Pathologists and the Department of Botany and Microbiology are required. The student will earn the equivalent of not more than 120 credit hours toward his B.S. degree for the successful completion of the hospital practice.

MICROBIOLOGY

is the study of bacteria, molds, yeasts, rickettsias, protozoa and viruses. The field includes General, Medical, Sanitary and Industrial Microbiology, Food and Water Microbiology, Immunology, and Serology.

A Bachelor of Arts degree is given in this curriculum. The first two years are spent mainly in developing a sound foundation in Mathematics, Physics, Chemistry, Biology and Social Sciences. The last two years are spent for the most part, in taking courses in Microbiology and related subjects. Senior students who have shown interest and ability during their undergraduate work are encouraged to continue their studies toward an advanced degree. Successful completion of the graduate curriculum may lead to the Master of Arts, the Master of Science and to the Doctor of Philosophy degrees. Any student with a baccalaureate degree in Microbiology, Biological Sciences, Pharmacy, Chemistry or related fields, who has a good undergraduate record, may take graduate work in Microbiology. When a student is deficient in Microbiology, the adviser may determine how many undergraduate courses this student will have to take in order to give him the fundamental background needed for graduate studies in this department. (For general requirements of all graduate students, see Graduate School.)

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, it is recommended that high school preparation include Algebra, Geometry, Trigonometry, Chemistry, Physics and a foreign language.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN MICROBIOLOGY. In addition to the general requirements for graduation listed earlier in the catalog, the following courses must be completed for the Bachelor of Arts degree in Microbiology: Microbiology 200, 302, 400, 495; Zoology 111, 112, or Botany 111, 122: Chemistry 121-122-123, 245, 261-262; Physics 111-112-113; Math 113, 115. A minimum of 45 credits in the major field is required to receive a baccalaureate degree. This requirement may be satisfied by a successful completion of Microbiology courses listed above and any of the following courses: Microbiology 200, 320, 350, 351, 461, 462, 463,
404, 408, 410, 415, 420, and 439; Zoology 303, 305; Botany 225, 225d, 329, 379; Chemistry 293, 370, 394, 491, 482, or any other course approved by the adviser and chairman of the Department of Botany and Microbiology.

SUGGESTED CURRICULUM

Freshman Year

<table>
<thead>
<tr>
<th>A</th>
<th>W</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cr</td>
<td>Cr</td>
<td>Cr</td>
</tr>
<tr>
<td>Chem 121-122—College Chemistry</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Eng 101-102—Freshman Composition</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Math 113—Trigonometry</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>HPE 100—Physical Education</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>ROTC 101-102-103—Military or Air Science</td>
<td>2</td>
<td>2</td>
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Sophomore Year

<table>
<thead>
<tr>
<th>17-19</th>
<th>17</th>
<th>17-19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bot 122—General Botany</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Chem 261-262—Organic Chemistry</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Chem 243—Quantitative Analysis of Chemical Processes</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Microbiology General Microbiology</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Math 116, 118—College Alg., Anal. Geom. and Calculus (recommended)</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Math 116—College Algebra</td>
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</tr>
<tr>
<td>Electives</td>
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<td>1</td>
</tr>
<tr>
<td>ROTC 201-202-203—Military or Air Science</td>
<td>2</td>
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Junior Year

<table>
<thead>
<tr>
<th>16-18</th>
<th>16-18</th>
<th>15-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics 111-112-113—General Physics</td>
<td>5</td>
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</tr>
<tr>
<td>Microbiology 305—Medical Microbiology</td>
<td>5</td>
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<tr>
<td>Foreign Language</td>
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<tr>
<td>Electives in Major</td>
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</tr>
<tr>
<td>Group Requirements</td>
<td>3</td>
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Senior Year

<table>
<thead>
<tr>
<th>18</th>
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</thead>
<tbody>
<tr>
<td>Microbiology 400—Immunology and Serology</td>
<td>5</td>
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</tr>
<tr>
<td>Microbiology 405—Seminars</td>
<td>1</td>
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<tr>
<td>Foreign Language</td>
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<tr>
<td>Electives in Major</td>
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</tr>
<tr>
<td>Electives</td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>

FOR UNDERGRADUATES

For explanation see Index under "Symbols"

100 ELEMENTARY MICROBIOLOGY 1Q A S Su 3, (3-0). Morphology, physiology, classification of bacteria, rickettsia and viruses; the changes of microorganisms in food and fermentation industries, agriculture and public health. (Not allowed toward a major in microbiology.)

101 ELEMENTARY MICROBIOLOGY LABORATORY 1Q A S Su 2, (3-0). Prereq 100 or concurrent registration. Microbiological examination of foods, water, soil, and air and experiments with microorganisms of medical importance. (Not allowed toward a major in microbiology.)

105 GENERAL HYGIENE 1Q S 3 (3-0). Personal hygiene and its effects on the individual and the community, sanitation, and prevention of diseases. (Not allowed toward degree in Microbiology.)

110 PUBLIC HEALTH 1Q W 2 (2-0). Sanitation problems as they involve health and diseases. (Not allowed toward degree in Microbiology.)

200 GENERAL MICROBIOLOGY 1Q A S Su 2, (3-0). Prereq Chem 123 or 160. Bacteriology, taxonomy, classification, morphology, physiology; effect of environmental factors on bacteria; microbiology of soil, water, and food. (Not allowed for both 100 and 200.)

205 MEDIA PREPARATION 1Q W 2 (1-3). Prereq 200. Preparation of slides and storage of culture media; differential media, function of ingredients, and general nutritional requirements of bacteria.

FOR UNDERGRADUATES AND GRADUATES

302 MEDICAL MICROBIOLOGY 1Q W 3, (3-0), Prereq 200. Pathogenic microorganisms including bacteria, fungi, viruses, and rickettsia.

303-304 PHARMACEUTICAL MICROBIOLOGY 2Q A W 5, (3-4). Prereq Chem 263, Phys 113 or 222. (303) Principles and techniques of basic bacteriology. (304) Pathogenic bacteriology, immunology and chemotherapy as they apply to the field of pharmacy.

365 INTRODUCTION TO APPLIED MICROBIOLOGY 1Q Su 5, (3-4). Prereq Microbiol 200 or 340 or equivalent. The fundamental principles of food, water, soil, and industrial microbiology. Credit for this course will not apply toward a major in microbiology. (Intended primarily for those enrolled in NSF Institute. A limited number of other students may enroll by special permission.)

370 MICROBIOLOGY OF WATER AND SEWAGE 1Q A. On demand 3, (2-2). e/y Prereq 101 or 200 or 303. Microorganisms found in water and sewage; sewage treatment and disposal, and water purification.

380 FOOD MICROBIOLOGY 1Q W 3, (3-0). Prereq 101 or 200 or 303. Microbiology of foods with emphasis on preservation, preservation and spoilage of foods.

381 FOOD MICROBIOLOGY LABORATORY 1Q W 2, (3-0). Prereq 330 or concurrent registration. Techniques for the investigation of microorganisms in foods.

340 MICROBIOLOGY FOR TEACHERS 1Q Su 5, (3-4). Introduction of Microbiology to high school science teachers. Not open to Microbiology majors. Credit not allowed for both 290 and 340.

380 (310) IMMUNOLOGY AND SEROLOGY 1Q A 5, (3-4). Prereq 302. General principles of immunity and extensive laboratory work in serology, animal experimentation, and clinical diagnosis.

401 ADVANCED IMMUNOLOGY 1Q On demand 3, (3-0). Prereq 400. Advanced theories of immunity and recent immunological techniques.


403 MICROBIAL PHYSIOLOGY 1Q S 5 (2-4). e/y Prereq senior standing in one of the biological sciences and c/l. Mutation, adaption and genetic recombination in bacteria and other microbes.

403 SEMINAR a/q 1 (1-0). R-5. Recent literature in Microbiology and related subjects.

408 MICROBIAL CYTOTOLOGY 1Q S V 3-5, (3-4) e/y Prereq c/l. Anatomy of microorganisms.

410 CLINICAL METHODS 1Q W 4, (2-4). e/y Prereq 302 and Chem 261. Clinical diagnostic methods used for the analysis of blood, spinal fluid, urinal, feces and gastric juice with emphasis on the methods used in the hospital laboratories.

411 EPIDEMIOLOGY 1Q W 3 (3-0). Prereq 302 or 340. Distribution and frequency of disease and factors affecting its spread and control.

420 PATHOGENIC FUNGI 1Q W 3 (2-3). e/y Prereq 302 and Botany 122 recommended. Morphology, physiology, infectivity, and immunogenicity of dermatophytic and systemic human fungi.

420 MICROBIOLOGY 1Q S 3 (3-0) e/y. Bacteriophage, plant and animal viruses.

430 SPECIAL PROBLEMS IN MICROBIOLOGY 1Q a/q V 1-5 R-25. Prereq c/l. Independent research.

FOR GRADUATES

500 ADVANCED TOPICS IN MICROBIOLOGY 1Q On demand 2 (2-0). Critical analysis of recent developments in certain areas of microbiology and presentation of this material. Occasionally, a graduate student will be asked to present experimental data from his own research.

501 SEMINAR a/q 1 (1-0). R-9.

505 MICROBIOLOGY LITERATURE a/q 1 (1-0). R-9. Reading and reporting of microbiological literature.


520 ALLERGY AND HYPERSENSITIVITY 1Q On demand 2. Recent advances in the field.

600 RESEARCH a/q V R-25. Original investigations on a research problem under the guidance of a staff member.

698 THESIS a/q V R-15.

MUSIC

The School of Music offers to students who have demonstrated talent in music, the opportunity to continue further study of music either for a profession or an avocation, and to acquire at the same time a broad general education. Complete sequences of courses are given to prepare a student for (A) a career as teacher or supervisor of music in the public schools, or for (B) a career directed toward composition, private teaching, and concert work, or for (C) thorough training in music within the structure of a broad liberal arts curriculum.

Music is a member of the National Association of Schools of Music.

The following degrees in music are offered by the School of Music:

Bachelor of Music with a major in Music Education with a minor in Applied Music with a major in Theory or Composition

Bachelor of Arts with a major in Music

Master of Music with a major in Music Education with a major in Applied Music with a major in Composition

Master of Arts with major in Music History and Literature
REQUIREMENTS FOR ADMISSION. In general, admission as a freshman in the School of Music is by certificate from the high school from which the student graduates. The faculty of the School of Music is more concerned with evidence of talent, commendable achievement in music, promise of development, and in scholarship in general, than it is in the precise content of the program which the prospective music student has followed prior to admission to college. The School of Music welcomes the opportunity to advise with students and parents during the high school period by correspondence or by interviews on the campus.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREES IN MUSIC. In addition to the general requirements for graduation listed earlier in the catalog, the following special requirements must be completed:

1. All candidates for the Bachelor of Music degree must select academic electives so as to complete a minimum of 84 credits not including required freshman and sophomore physical education and military science, courses in music, including a minimum of 6 credits in composition electives, and courses in education offered for state certification.

2. For the Bachelor of Music with a major in Music Education, the course requirements in Curriculum A must be completed.

3. For the Bachelor of Music with a major in Applied Music or in Theory or Composition, the course requirements in Curriculum B must be completed.

4. For the Bachelor of Arts degree with music as a major, the course requirements in Curriculum C must be completed.

5. All students majoring in music are required to attend recitals as specified by the department.

6. All music majors seeking a B.M. or B.A. degree are required to participate in Band, Orchestra or a Choral Group each quarter of residence of the regular school year. Students who are wind instrument majors in their applied field must register for band (or orchestra, if designated) every quarter, string majors must register for orchestra every other quarter, and jazz majors must register for jazz chorus every other quarter. Students registered in any group must participate in the majority of the group's performance. Piano and organ majors must fulfill this requirement by the election of Music 445 (Senior Recital) or (may be taken freshman year) Music 324-325-326 (Music History). Exceptions to this requirement may be made only by action of the music faculty.

7. All candidates for the Bachelor of Music degree must satisfactorily demonstrate completion of 6 credits in Piano 100 or completion of Piano in Class 217.

8. Outstanding seniors in curriculum A or C may give joint senior recitals. Details will be supplied by the department on request.

APPLIED MUSIC FEES

Non-Music Majors

| One half-hour lesson per week       | $12.00 |
| Two half-hour lessons per week      | $24.00 |
| Three half-hour lessons per week    | $36.00 |

Music Majors

| One half-hour lesson per week       | $12.00 |
| Two or more half-hour lessons per week | $24.00 |

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 made only 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     2.00
Organ and practice room, one hour daily     6.00
Extension of daily practice period          1.00
Wind and string instruments                 4.00

*Rentals for instruments used in orchestras and band must be paid in full for the school year.

Other 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 WITH A MAJOR IN MUSIC EDUCATION:

For students who sincerely feel the challenge and vital service opportunity in the teaching profession, and whose high school background includes experience in musical organizations, Montana State University offers the degree of Bachelor of Music with a major in Music Education, which meets the state requirements for certification for public school teaching (see Education).

FRESHMAN YEAR:

<table>
<thead>
<tr>
<th>Credits per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 101 (Applied)</td>
</tr>
<tr>
<td>Music 106-110 (Organization)</td>
</tr>
<tr>
<td>Music 111-112-113 (Theory I) (111 may be waived by examination)</td>
</tr>
<tr>
<td>Music 120-121-122 (Aural Perception)</td>
</tr>
<tr>
<td>Music 125-126-127 (Strings in Class)</td>
</tr>
<tr>
<td>Music 138 (Introduction to Music Literature)</td>
</tr>
<tr>
<td>English 101-102-103 (Freshman Composition)</td>
</tr>
<tr>
<td>Health &amp; Physical Edu 100</td>
</tr>
<tr>
<td>ROTC 101-102-103 (Men) or 0.0,2,2</td>
</tr>
</tbody>
</table>

SOPHOMORE YEAR:

<table>
<thead>
<tr>
<th>Credits per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 201 (Applied)</td>
</tr>
<tr>
<td>Music 106-110 (Organization)</td>
</tr>
<tr>
<td>Music 211-212-213 (Theory II)</td>
</tr>
<tr>
<td>Music 220-221-222 (Aural Perception)</td>
</tr>
<tr>
<td>Music 218-219-220 (Piano in Class)</td>
</tr>
<tr>
<td>Music 117-118-119 (Vocal Harmony) (may be taken freshman year)</td>
</tr>
<tr>
<td>Music 324-325-326 (Music History)</td>
</tr>
<tr>
<td>Electives (Non-Music) including Psych 110</td>
</tr>
<tr>
<td>Health &amp; Physical Edu 100</td>
</tr>
<tr>
<td>ROTC 201-202-203 (Men)</td>
</tr>
</tbody>
</table>

JUNIOR YEAR:

<table>
<thead>
<tr>
<th>Credits per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 301 (Applied)</td>
</tr>
<tr>
<td>Music 106-110 (Organization)</td>
</tr>
<tr>
<td>Music 320-321-322 (School Music)</td>
</tr>
<tr>
<td>Music 331-332-333 (Conducting, Music Methods and Materials)</td>
</tr>
<tr>
<td>Music 120-121-130 (Woodwinds, Brass, Percussion and Band)</td>
</tr>
<tr>
<td>Education 200-205</td>
</tr>
<tr>
<td>Electives (Academic or Music)</td>
</tr>
<tr>
<td>Music 320 (Orchestration)</td>
</tr>
<tr>
<td>Education 405 (Student Teaching)</td>
</tr>
<tr>
<td>Electives (Academic or Music)</td>
</tr>
<tr>
<td>Music 101-102-103 (Men)</td>
</tr>
</tbody>
</table>

Students taking piano as Secondary Applied Major must complete Music 320, 321, Piano Methods and Materials.

Double majors are possible in curriculum (A) Music Education and (B) Applied Music (Theory, or Composition, if all requirements in both curricula are completed.

B. CURRICULUM FOR BACHELOR OF MUSIC DEGREE WITH MAJORS IN APPLIED MUSIC IN THEORY OR COMPOSITION.

The serious instrumentalist or vocalist may enroll for training leading to the degree of Bachelor of Music with a major in Applied Music (including emphasis on piano pedagogy), Theory or Composition. Enrollment may not be completed until the student has received the recommendation of a major professor or a committee of the music faculty.

MAJOR IN PIANO OR ORGAN

Students interested in piano pedagogy follow Curriculum B with the following exceptions: (1) at least six credits in Music 140 (Piano Ensemble) must be included, (2) a half recital, Music 445, 1 credit, will fulfill the senior recital requirement.

FRESHMAN YEAR:

<table>
<thead>
<tr>
<th>Credits per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 151 (Applied)</td>
</tr>
<tr>
<td>Music 106-110 (Organization) or Music 140 (Ensemble)</td>
</tr>
<tr>
<td>Music 111-112-113 (Theory I) (111 may be waived by examination)</td>
</tr>
<tr>
<td>Music 120-121-122 (Aural Perception)</td>
</tr>
<tr>
<td>Music 135 (Introduction to Music Literature)</td>
</tr>
<tr>
<td>English 101-102-103 (Freshman Composition)</td>
</tr>
<tr>
<td>Electives (Academic)</td>
</tr>
<tr>
<td>Health &amp; Physical Edu 100</td>
</tr>
<tr>
<td>ROTC 101-102-103 (Men) or 0.0,2,2</td>
</tr>
</tbody>
</table>

SOPHOMORE YEAR:

<table>
<thead>
<tr>
<th>Credits per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 251 (Applied)</td>
</tr>
<tr>
<td>Music 106-110 or 140</td>
</tr>
<tr>
<td>Music 211-212-213 (Theory II)</td>
</tr>
<tr>
<td>Music 257-258-259 (Aural Perception)</td>
</tr>
<tr>
<td>Music 247-248-249 (Keyboard Harmony)</td>
</tr>
<tr>
<td>Psychology 110 and Electives (non-music)</td>
</tr>
<tr>
<td>Health &amp; Physical Edu 100</td>
</tr>
<tr>
<td>ROTC 201-202-203 (Men)</td>
</tr>
</tbody>
</table>

JUNIOR YEAR:

<table>
<thead>
<tr>
<th>Credits per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 351 (Applied)</td>
</tr>
<tr>
<td>Music 106-110 or 140</td>
</tr>
<tr>
<td>Music 234-235-236 (Music History)</td>
</tr>
<tr>
<td>Music 260-361 (Piano Methods and Materials)</td>
</tr>
<tr>
<td>Music 331 (Conducting)</td>
</tr>
<tr>
<td>Music electives (upper division)</td>
</tr>
<tr>
<td>Electives (non-music)</td>
</tr>
<tr>
<td>Music Electives (Upper Division)</td>
</tr>
</tbody>
</table>

SENIOR YEAR:

<table>
<thead>
<tr>
<th>Credits per Quarter</th>
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</thead>
<tbody>
<tr>
<td>Music 451-452-453 (Applied)</td>
</tr>
<tr>
<td>Music 106-110 or 140</td>
</tr>
<tr>
<td>Music 445 (Senior Recital)</td>
</tr>
<tr>
<td>Electives (non-music)</td>
</tr>
<tr>
<td>Music 105,5</td>
</tr>
<tr>
<td>Music Electives (Upper Division)</td>
</tr>
</tbody>
</table>

-3.3
## MAJOR IN VOICE

**FRESHMAN YEAR:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 101 (Applied)</td>
<td>5.5</td>
</tr>
<tr>
<td>Music 106-110 (Organization)</td>
<td>1.1, 1.1</td>
</tr>
<tr>
<td>Music 111-112-113 (Theory I) (111 may be waived by examination)</td>
<td>2.2</td>
</tr>
<tr>
<td>Music 114-115-116 (Piano in Class)</td>
<td>1.1</td>
</tr>
<tr>
<td>Music 234, 235, 236 (Aural Perception)</td>
<td>1.1</td>
</tr>
<tr>
<td>Music 336 (Introduction to Music Literature)</td>
<td>4.5</td>
</tr>
<tr>
<td>English 101-102-103 (Freshman Composition)</td>
<td>3.5</td>
</tr>
<tr>
<td>Health &amp; Physical Educ 100</td>
<td>0.0, 0.2</td>
</tr>
<tr>
<td><strong>ROTC 101-102-103 (Men)</strong></td>
<td>0.0, 0.2</td>
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</tbody>
</table>

**SOPHOMORE YEAR:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 231 (Applied)</td>
<td>4.4</td>
</tr>
<tr>
<td>Music 206-110</td>
<td>1.1, 1.1</td>
</tr>
<tr>
<td>Music 211, 212, 213 (Theory II)</td>
<td>2.2</td>
</tr>
<tr>
<td>Music 234, 235, 236 (Aural Perception)</td>
<td>2.2</td>
</tr>
<tr>
<td>Music 237, 238, 239 (Piano in Class)</td>
<td>1.1</td>
</tr>
<tr>
<td>Music 215, 216, 217 (Piano in Class)</td>
<td>1.1</td>
</tr>
<tr>
<td>English 101-102-103 (Freshman Composition)</td>
<td>3.5</td>
</tr>
<tr>
<td>Electives (non-music)</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Health &amp; Physical Educ 100</strong></td>
<td>0.0, 0.2</td>
</tr>
<tr>
<td><strong>ROTC 201-202-203 (Men)</strong></td>
<td>0.0, 0.2</td>
</tr>
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</table>

**JUNIOR YEAR:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits per Quarter</th>
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<tbody>
<tr>
<td>Music 311 (Applied)</td>
<td>4.4</td>
</tr>
<tr>
<td>Music 306-110</td>
<td>1.1, 1.1</td>
</tr>
<tr>
<td>Music 331 (Conducting)</td>
<td>3.5</td>
</tr>
<tr>
<td>Music electives (upper division)</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Psychology 110 and Electives (non-music)</strong></td>
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</tr>
</tbody>
</table>

**SENIOR YEAR:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 431 (Applied)</td>
<td>4.4</td>
</tr>
<tr>
<td>Music 444 (Senior Recital)</td>
<td>0.5</td>
</tr>
<tr>
<td>Electives (non-music)</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Music electives (upper division)</strong></td>
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</tbody>
</table>

**MAJOR IN ORCHESTRAL INSTRUMENTS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 101 (Applied)</td>
<td>5.5</td>
</tr>
<tr>
<td>Music 111-112-113 (Theory I) (111 may be waived by examination)</td>
<td>2.2</td>
</tr>
<tr>
<td>Music 114-115-116 (Piano in Class)</td>
<td>1.1</td>
</tr>
<tr>
<td>Music 234, 235, 236 (Aural Perception)</td>
<td>1.1</td>
</tr>
<tr>
<td>Music 336 (Introduction to Music Literature)</td>
<td>4.5</td>
</tr>
<tr>
<td>English 101-102-103 (Freshman Composition)</td>
<td>3.5</td>
</tr>
<tr>
<td>Electives (non-music)</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Health &amp; Physical Educ 100</strong></td>
<td>0.0, 0.2</td>
</tr>
<tr>
<td><strong>ROTC 101-102-103 (Men)</strong></td>
<td>0.0, 0.2</td>
</tr>
</tbody>
</table>

**JUNIOR YEAR:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 351 (Applied)</td>
<td>4.4</td>
</tr>
<tr>
<td>Music 306-110</td>
<td>1.1, 1.1</td>
</tr>
<tr>
<td>Music 321 (Conducting)</td>
<td>3.5</td>
</tr>
<tr>
<td>Music electives (upper division)</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Music electives (upper division)</strong></td>
<td>0.5</td>
</tr>
</tbody>
</table>

**SPECIAL REQUIREMENTS FOR THE MASTER OF MUSIC DEGREE**

- A. Major in Applied Music. In addition to the general requirements for admission under the Graduate School, the candidate must meet the following special requirements. A theory placement test, a bachelor's degree in one field of applied music or the demonstrated equivalent of an applied major. An audition or tape recording will be required of students with a B.M. from other institutions.

- General requirements: 45 credits of graduate work, a minimum of 12 credits in applied music with an examination covering the fields of study prior to the recital, 3 credits selected from Music 359, 360, 361 (Composition II), 3 credits selected from Music 331 (Conducting) or Music 451 (Applied), 3 credits from Music 451 (Applied) or Music 459, 460, 461 (Composition). 3 credits in Music 111, 112, 113 (Theory I) may be waived by examination.

- Special requirements: 6 credits of Music electives (upper division theory or literature) in preparation for teaching careers in colleges or private schools.

- Minimum credit requirements for this degree are: 100 total credits plus PE and ROTC with a minimum of 57 credits in Music and a minimum of 30 credits in English Language (excluding PE and ROTC) of which 59 credits must be in the College of Arts and Sciences. Music credits applicable toward this degree: Applied Music, 12 credits; Ensemble Music, 6 credits (however, Music Department requires participation in ensemble during all resident quarters).

## C. CURRICULUM FOR BACHELOR OF ARTS DEGREE WITH A MAJOR IN MUSIC

Students with a pre-college background in applied music may elect a course designed to develop musicianship, gain scholarly insight into the art of music, and to develop substantial background in the Arts and Sciences. This degree does not qualify a student for public school teaching but does provide groundwork for graduate study in the fields of musical performance and scholarship in preparation for teaching careers in colleges or private schools.
A total of 6 credits in non-music electives (graduate credit) may be offered toward the degree.

Any music courses (graduate credit) may be offered to complete the required 45 credits of graduate work.

B. Major in Music Education. In addition to the general requirements for admission under the Graduate School, the candidate must take a theory placement test and have an audition in his performance area for the purpose of applied music placement.

General requirements: 45 quarter credits of graduate work, including a minimum of 12 quarter credits in applied music, a minimum of 3 quarter credits in each of three areas, three copies of a professional paper, and a general examination covering that field of study: 3 credits in pedagogy; 2 credits in music literature; 2 credits in music composition; a comprehensive examination of major proportions, written under advisement. A performance of the work shall be supervised by the candidate.

Required music courses: 6 credits of 101, 6 credits of 201, 6 credits of 301, 6 credits of 401 (3 quarters of each course).

A total of 6 graduate credits in non-music electives may be offered toward the degree.

Any graduate credits in Music may be offered to complete the required 45 credits of graduate work.

C. Major in Music Education. In addition to the general requirements for admission under the Graduate School, the candidate must take a theory placement test and have an audition in his performance area for the purpose of applied music placement.

General requirements: 45 quarter credits of graduate work, including a minimum of 12 quarter credits in applied music, a minimum of 3 quarter credits in each of three areas, three copies of a professional paper, and a general examination covering that field of study: 3 credits in pedagogy; 2 credits in music literature; 2 credits in music composition; a comprehensive examination of major proportions, written under advisement. A performance of the work shall be supervised by the candidate.

Required music courses: 6 credits of 101, 6 credits of 201, 6 credits of 301, 6 credits of 401 (3 quarters of each course).

A total of 6 graduate credits in non-music electives may be offered toward the degree.

Any music courses (graduate credit) may be offered to complete the required 45 credits of graduate work.

MUSIC 100-Secondary Applied Minor a/q 1-2 Prereq c/i. Individual instruction in voice, piano, organ, string, wood, and percussion instruments. The students in Curriculum A must have evidence of the equivalent of two years' prior study.

SPECIAL REQUIREMENTS

General requirements: 45 credits of graduate work, including a minimum of 12 credits in composition and 6 credits in applied music, a minimum of 3 credits in each of three areas, and a comprehensive examination of major proportions, written under advisement. A performance of the work shall be supervised by the candidate.

Required music courses: 6 credits of 101, 6 credits of 201, 6 credits of 301, 6 credits of 401 (3 quarters of each course).

A total of 6 graduate credits in non-music electives may be offered toward the degree.

Any graduate credits in Music may be offered to complete the required 45 credits of graduate work.

MUSIC 101, 201, 301, 401 (3 quarters each course). Individual instruction in voice, piano, organ, string, wood, and percussion instruments. The students in Curriculum B must have evidence of the equivalent of four years' prior study. A senior recital must be given before graduation.

FOR UNDERGRADUATES

For explanation see Index under "Symbols"

105 SUMMER SESSION CHOIR 1q Su V 1-2.
106 UNIVERSITY CHOIR 3q A W S 1.
107 CHORAL UNION 3q A W S 1.
108 ORCHESTRA 3q A W S 1.
110 UNIVERSITY BAND 3q A W S 1.

Courses 106 through 110 are major musical organizations. 3q A W S 1. Prereq: the major must take a minimum of 12 credits; non-major majors may take 6 credits.

111-112-113 THEORY I 3q A W S 2, 111 (Basic Theory) may be aural only based on individual instruction and the student's knowledge of the fundamentals of music literature, nomenclature of the science of music literature including the study of meters, scales, modes, and style periods; 112 (Counterpoint) 3q credits, rhythm, and supplemental ear training. 112-113 Prereq 111, 113 for 113. Music literature to deduce principles of music construction. Application of principles through the study of theoretical works. 114-115-116 PIANO IN CLASS 3q A W S 1. All major and minor scales 2 octaves HS. All major and minor triads in all positions. Harrington, Principles of Simultaneous Writing with IV V7 chords. Materials such as Oxford and Burrows Adult Beginners books.

Transposition, memorization, and sight-reading.


122-123 MUSIC EDUCATION IN THE ELEMENTARY SCHOOLS 2q Su V 1. Aural training based on aural perception and current registra tion. 122 A philosophy of teaching music in the elementary schools, emphasis placed on learning by doing. Singing, listening, rhythm, instrumental, creative, and integration; twenty-five songs memorized; use of the pitch pipe, autoharp and chording on piano; classification of instruments, construction of instruments, fundamentals of music and keyboard fundamentals. 123 (Continuation of 122, dealing more specifically with elementary music education.) Other areas of study: Basic music literature and history with emphasis on its relation to social change and to the historical development of music and art. Intermediate work in music reading; music books for the elementary school library. No credit without prerequisites.

125-126-127 STRING INSTRUMENTS IN CLASS 3q A W S 1. Group instruction for beginning students on violin, viola, cello, and bass, with emphasis on teaching procedures.

128-129-130 (129) WOODWIND; BRASS, PERCUSSION AND BAND INSTRUMENTS 3q A W S 2 (129) Basic instruction in brass instruments. (130) Prereq 129, 129. Basic instruction in percussion and practical experience in performing elementary band materials, using instruments studied in Music 128 and 129.

134 INTRODUCTION TO CONCERT MUSIC 1q A W S 3. Musical history and literature lectures for the layman on forms, styles and composers of concert music. Guided listening to recordings and concert attendance. For non-majors only.

135 (135-136-137) INTRODUCTION TO MUSIC LITERATURE 1q A W S 2. The historical development of music in literature with emphasis on its relation to social change and to the historical development of music and art. Intermediate work in music reading; music books for the elementary school library. Review of all periods of music history. Introduction to the study of music. Requirements: 1 credit during each quarter. Course to be extended to two quarters if needed. Non-majors only.

138-139 (131-132-133) AURAL PERCEPTION I 2q W 2, 2q Prereq. 111, 112 is prereq to 113. Concurrent registration with 112-113. Aural perception in composing, melody, and rhythm to supplement Theory I.

140 ENSEMBLE GROUPS 1q A W S 1. Any small group of two or more players or singers may have a course outlined by the instructor. The development of sight reading and acceptance with music literature; accompanying. Students may register for more than one ensemble in any one quarter.

155-160-161 COMPOSITION 3q A W S 3. Prereq 111, 112. Allows opportunity to develop and write music for the non-musician. Introduces the student to the writing of music and the compositional process. May be taken in conjunction with Theory I.


215-216-217 INTERMEDIATE PIANO IN CLASS 3q A W S 1 Prereq 3 credits in either Piano I, Music 114-115-116, 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 Mikrokosmos.

234-235-236 (234-236-236) HISTORY OF MUSIC 3q A W S 2 Prereq 135. Enter any quarter. The history of music in Western Civilization from the early church through modern times and its relationship to general cultural development.

237-238-239 AURAL PERCEPTION II 3q A W S 2. Prereq 135 and 139. 239 prereq to 238, 239. Prereq to 238, 239. Consideration of music from the Middle Ages to the Baroque Period, including modern times and its relationship to general cultural development.

247-248-249 KEYBOARD HARMONY 3q A W S 2. Prereq 121 or concurrent registration, and placement in Piano or Organ 151. Practical application of theory principles to the keyboard. Exer-
530 INDEPENDENT STUDY a/q V R-9. Students must have projects approved by a music staff member before enrolling.

531 SYMPHONIC LITERATURE 1Q A Su 3. Offered and alternating years. Survey of symphonic literature, concentrating upon the Mannheim composers, the Viennese classics, the Romantics, and contemporary European symphonies, tetralogies, and symphonic works. The Romantic opera in Italy and Germany, contemporary opera trends.

532 OPERATIC LITERATURE 1Q W 3. Offered on demand. Opera from its beginnings, the Florentine Camerata, 16th and 17th century French and Italian opera, and also their identification with the Baroque era to the contemporary period, including the suite, sonata, character pieces, etc.

534 CHAMBER MUSIC LITERATURE 1Q A 3. Offered on demand. Survey of chamber music, quartet, trio, quintet, etc., in various styles and periods. Emphasis on the analysis of form, texture, and structure of music and the development of various types of chamber music.

535 SONG LITERATURE 1Q W 3. Offered on demand. The art song from the classical period to the contemporary era including the German lied, French chanson, and related literature.

536 CHORAL LITERATURE 1 Q 3. Offered in alternate years. Survey of both secular and sacred music for choral ensembles, dealing chiefly with the music from the 16th century to the contemporary school.

538 TRENDS IN CONTEMPORARY MUSIC 1Q W Su 3. A survey of trends in European and American music from the end of World War II to the present. Emphasis on the development of electronic music, the serial technique, and other new techniques of composition.

539 HISTORY OF AMERICAN MUSIC 1 Q 3 Su. The development of American music from its antecedents. The effect of evolving democratic art forms on the development of music and the various centers of performing arts and the types of music performed.


542 MEDIEVAL AND RENAISSANCE MUSIC 1 Q W 3. Survey of music from the Middle Ages to the Renaissance. Emphasis on the history of medieval and Renaissance music and its relation to the arts.

545-559 (589) ADVANCED MUSIC HISTORY 1Q W Su 3. Offered on demand. Survey of the development of music in Western culture from ancient times to the 18th century. The development of music in the Baroque, Classical, and Romantic periods, with special attention given to the music of the 18th and 19th centuries.

546-559 (589) ADVANCED MUSIC HISTORY 1Q W Su 3. Offered on demand. Survey of the development of music in Western culture from ancient times to the 18th century. The development of music in the Baroque, Classical, and Romantic periods, with special attention given to the music of the 18th and 19th centuries.


550 APPLIED TECHNICS a/q V 1-4 R-15. Individual instruction in piano, organ, and related techniques. The study of advanced musical techniques in piano, organ, and related instruments. Students desiring further study of minor applied fields may elect 1-2 credits.

551 (431) ADVANCED CONDUCTING 1Q A W W S 3 R-6 Prereq 332 (Choral majors), 333 (others), and C1. A continuation of 331-332-333. Class and individual study of the art of conducting with emphasis on applied work with university performing groups.

552 MUSIC EDUCATION IN AMERICA 1Q W W S Su 3. The history and philosophy of music education in America and its relation to general educational thought.

554-565 (570) PSYCHOLOGY OF MUSIC 1 Q A 3. Individual instruction in psychology of music, the behavior of music, and the relation of music to experimental psychology. Current psychological tests and measurements in music.

555-565 (570) PSYCHOLOGY OF MUSIC 1 Q A 3. Individual instruction in psychology of music, the behavior of music, and the relation of music to experimental psychology. Current psychological tests and measurements in music.

556 APPLIED TECHNICS a/q V 1-4 R-12. Individual instruction in piano, organ, string and woodwind instruments. Students desiring further study of minor applied fields may elect 1-2 credits.

559 THESIS a/q V R-15. A music composition project based on a specific topic, or a research project on a specific topic, culminating in a written manuscript.

562 SEMINAR a/q V 1-5 R-15. Investigation of research in fields of individual interest. Directed readings and research in fields of individual interest.

569 PEDIATRIC MUSIC 1 Q W 3. The teaching of music to young children, including techniques, procedures and sequences of materials and a comparison of standard harmony texts. The application of psychological techniques to composition for graduate students. Development of techniques and materials for instrumental instruction at all levels; theory classes in secondary schools.

570 INSTRUMENTAL REPAIR 1 Q 3 Su. The care and maintenance of wood, brass, string, and percussion instruments in the secondary schools. (333) Instrumental conducting; procedures and materials for teaching beginning, intermediate and advanced students in private studios. Practical demonstration and supervised laboratory experience with children and children's classes. (333) Instrumental conducting; procedures and materials for teaching piano classes in public schools and private studios. Procedures in teaching beginning, intermediate and advanced students in private studios. Practical demonstration and supervised laboratory experience with children and children's classes.

571-580 (590) SIXTEENTH CENTURY COUNTERPOINT 2 Q W 3. Prereq 213. Counterpoint techniques and procedures, including special attention given to the art of writing in the larger forms.

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581-590 ADVANCED ORCHESTRATION 1Q A W S 2 Prereq. A continuation of 559. The care and maintenance of wood, brass, string, and percussion instruments in the secondary schools.

582-590 ADVANCED ORCHESTRATION 1Q A W S 2 Prereq. A continuation of 559. The care and maintenance of wood, brass, string, and percussion instruments in the secondary schools.

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590-599 THESIS a/q V R-15. A music composition project based on a specific topic, or a research project on a specific topic, culminating in a written manuscript.
drugs on living organisms. Pharmaceutical administration is concerned with the important business phases of retail pharmacy such as marketing and management.

Many graduates practice pharmacy in rural, neighborhood, or "down-town" stores. Others conduct hospital pharmacies, a particularly attractive field for women. In addition to the formal education program, the candidate for licensure as a registered pharmacist must complete one year of practical experience or internship in pharmacy under the direction of a registered pharmacist and must pass an examination given by the State Board of Pharmacy. Additional opportunities exist as representatives for pharmaceutical companies, in pharmaceutical government offices, in manufacturing pharmacy, and in pharmaceutical journalism. Those with advanced degrees are in demand in research positions and in pharmaceutical education.

The School of Pharmacy was established in 1907 at Montana State College and was transferred to the State University campus in 1913. The School of Pharmacy is a member of the American Association of Colleges of Pharmacy and is accredited by the American Council on Pharmaceutical Education. A 3-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 an accredited college or professional school of pharmacy. The School of Pharmacy covers three years and must be taken in residence at Montana State University. Students transferring from other accredited schools of pharmacy may be admitted to an advanced standing determined on the basis of credits presented, provided that good academic standing is maintained.

Upper class students may choose approved elective courses designed to prepare them specifically for either retail pharmacy, sales and management, research, or teaching for hospital pharmacy. Such elective courses will be determined by the area of specialization chosen by the student, and must be approved by the faculty advisor.

A program of study leading to the Master of Science degree in the areas of pharmacy, pharmaceutical chemistry, pharmacology, and pharmacognosy is also offered.

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. I. The general requirements for admission to Montana State University as listed earlier in the catalog.

2. At least two years as prescribed in the pre-pharmacy curriculum (may be transferred from accredited colleges):
   - First year: Chemistry 121-122-123, English 101-102-103, Health and Physical Education 100 (3 credits, 3 quarters), Mathematics 112, RO TC 101-102-103, Zoology 111 and electives. (Students satisfying these requirements by the summer following high school graduation will be exempt from Mathematics 110 in which case they will substitute a Group II or Group III elective.)
   - Second year: Botany 122, Chemistry 261-262-263, Economics 201-202, Health and Physical Education 100 (3 credits, 3 quarters), Physics 111-112, RO TC 201-202-203, and Group II or Group III electives.

Applicants presenting two years of satisfactory college work but with certain deficiencies in the above list may be admitted, but such deficiencies will be remedied before graduation.

Each applicant for admission to the professional curriculum must have an accumulated grade point index of 2.00 on all college work taken and completed for credit at the time he makes application for admission to the first professional year.

The autumn quarter is the normal time of admission to the School of Pharmacy.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN PHARMACY. Candidates for the degree of Bachelor of Science in Pharmacy must complete at least one year in the professional curriculum in order to be considered for the degree. Students with senior status in the college of their major field of study may not have a grade point deficiency score of more than 10. If he has a greater deficiency, he will not be granted senior status but will be required to take such courses, as the faculty may direct, in which he has received grade deficiencies of 0 or "F" until he has reduced his deficiency to 10 or less. He may be admitted to senior standing and may become a candidate for a degree upon the satisfactory completion of the senior curriculum.

Candidates for the degree of Bachelor of Science in Pharmacy must:
1. Meet the general University requirements for graduation.
2. Complete not less than five full academic years of training, including required pre-pharmacy instruction and a minimum of three years of professional instruction.
3. Complete not less than 225 credits of course work, plus six credits of required Health and Physical Education, and RO TC courses as may be required.

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, an applicant will not receive a license until he has completed an internship of at least one year, following graduation from an accredited pharmacy in the state of Montana.

GRADUATE STUDY. 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.

PHARMACY CURRICULUM

First year: Microbiology 305-304; Business Administration 201; Chemistry 245; Pharmacy 308 or Elective; 220 or Elective, 324-341; Zoology 340-341; electives.

Second year: Business Administration 360; Chemistry 384; Microbiology 411; Pharmacy 414-415, 416, 441, 452, 461, 462, 463, 475; and electives.

Third year: Pharmacy 503, 504, 505-506, 516, 517-518-519, 540-541-542, 577; and electives.

FOR UNDERGRADUATES

For explanation see Index under "Symbols"

206 ORIENTATION TO PHARMACY 1Q A 3 (3 -0). Career opportunities, literature, history and terminology, library orientation.

220 PHARMACEUTICAL CALCULATORS 1Q W 3 (3 -0). Met­

225 PHARMACOLOGY 2Q W 3 (3 -2). S 4 (3 -2) Prereq Bot 122 and Chem 263 or =. The plant and animal products used in phar­

341-415 ORGANIC MEDICINAL PRODUCTS 3Q A W S 3 (3-0) Prereq Chem 263. Organic substances used medicinally with emphasis on the correlation of chemical structure with therapeutic activity.

342 DRUG ANALYSIS 1Q A 4 (2-6) Prereq Chem 245. Special and instrumental methods used in the analysis of pharmaceutical preparations.

343 PHARMACEUTICAL CHEMISTRY 1Q A 3 (3-0) Prereq Chem 220 and Chem 263 or =. Introduction to the elementary physical chemical principles as applied to pharmacy and pharmaceu­

345 OPERATIVE PHARMACY 2Q W 5 (3-4) Prereq 220 and 461. Fundamental techniques and the various classes of pharmaceutical preparations.

346 MEDICINAL PLANTS 1Q On demand 2 (0-6) Prereq 325. The collection, identification, drying, garbling, milling of crude drugs.

347 IDENTIFICATION OF MEDICINAL PLANTS 1Q a/q On demand 3 (0-9) Prereq 466. The herbarium study of medicinal plants.

348 DRUG MICROSCOPY 1Q On demand 2 (0-6) Prereq junior standing in pharmacy and C/1. Microscopic and micro-chemi­

349 TOXICOLOGY 1Q W 3 (2-4). Emergency procedures for the treatment of poisoning, characteristics of the more common poisons, and the recognition and identification of poisons.

503-504 BIOLOGICAL MEDICINAL PRODUCTS 2Q W 3 (3-0) Prereq Microbiology 364. Biologicals, antibiotics, vitamins, hormones, and other medicinal products of biological origin.

505-506 DISPENSING 2Q W 4 (2-6) Prereq 463. The funda­

516 PHARMACEUTICAL LAW 1Q A 3 (3-0) Prereq senior standing in pharmacy. State and federal laws pertaining to the practice of pharmacy.

517-810-519 PHARMACEUTICAL PRACTICE 3Q A W S 1 (0-2) Prereq senior standing in professional curriculum. Students are assigned to the Montana State University Dispensary Pharmacy in order to ac­

540-541-542 PHARMACOLOGY 3Q A W S 3 (4-0) Prereq senior standing in pharmacy, and Zoology 341 or =. The pharmacodynamics of drugs and their application to pharmacotherapies.

545 ANIMAL HEALTH PRODUCTS AND PESTICIDES 1Q S 3 (3-0) Prereq 540. Pharmacals used in the treatment of diseases of animals. Pesticides and pest control.

577 PHARMACEUTICAL ADMINISTRATION 1Q S 3 (3-0) Prereq senior standing in professional curriculum. Management of retail pharmacy with emphasis on the professional problems of the phar­

FOR UNDERGRADUATES AND GRADUATES

570 COSMETICS 1Q On demand 3 (1-6) Prereq 463. The theory and technic of cosmetic formulation.

575 ADVANCED DRUG ANALYSIS 1Q On demand 3 (1-6) Prereq 452. The more involved methods of analysis as applied to pharmaceuticals.
598 SEMINAR a/q 1 (1-0) R-6 Prereq senior standing in pharmacy.

599 SPECIAL PROBLEMS IN PHARMACY a/q V 2-5 (0-4/cr) R-10 Prereq senior standing in pharmacy. Research studies by conference, library research, preparation of a thesis and chemistry, pharmacognosy, or pharmacology.

FOR GRADUATES
602 ADVANCED PHARMACOGNOSTICAL TECHNICS 1Q a/q 3 (0-9) Prereq 486 and Bot 334 and 335. Techniques used in investigatory pharmacognosy.

606-606-607 CHEMISTRY OF NATURAL PRODUCTS 3Q a/q 3 (2-5) Prereq 416, Chem 346. Alkaloids, including methods of isolation, degradation studies, proof of structure, and synthesis, with emphasis on the pharmaceutical compounds. (606) Volatile oils, terpenoids and steroids, including their occurrence, isolation, and chemistry. (607) Glycosides and related compounds, including methods of isolation, proof of structure, synthesis and chemistry.

609-610-610 ADVANCED ORGANIC MEDICINAL PRODUCTS 3Q A W S 3 (3-0) Prereq 416, Chem 464. Given alternate years. The organic medicinals with emphasis on structure, synthesis, structure-activity relationships and chemistry.

611 ADVANCED ORGANIC MEDICINAL PRODUCTS LABORATORY 2Q R-3. Prereq senior standing in pharmacy. Preparation and purification of organic medicinals by advanced techniques.

619 ADVANCED PHARMACOLOGY 1-3Q a/q V 3-5 (0-9 to 15) Prereq 486 or =. The more involved actions of drugs upon cells and organs.

620 ADVANCED PHARMACY 1-3Q a/q V 3-5 (0-9 to 15) Prereq 486 or =. The more complex problems involved in formulation and preparation of pharmaceuticals.

699 THESIS a/q V R-15

PHILOSOPHY

is the search for wisdom by carefully reasoned reflection. Philosophical inquiry is concerned with such questions as:

How can we distinguish reality from appearance? Is the world to be understood as a quantity of material objects, as a framework of mental experiences, or as an open field for action? By what methods can man attain knowledge, and what kinds of knowledge? Are values derived from personal feelings or from standards which may be impersonal, verifiable, unchanging? Are there significant relations among phases of experience reflected in science, art, religion, morality and politics?

Courses in philosophy acquaint the student with the views of great philosophical thinkers, past and present. Discussion and written work are largely concerned with the evaluation and reasoning by which each thinker develops his point of view.

The Bachelor of Arts and Master of Arts degrees are offered.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN PHILOSOPHY. 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 Philosophy: a minimum of 50 credits, including Philosophy 110, 201, 202, 203, 210, and three or more credits in courses numbered 400 or above. The requirement of 210 may be waived by permission of the department. Normally students are expected to complete Philosophy 201, 202, 203, 210, and 204 in the senior year. The foreign language requirement listed earlier in the catalog must be satisfied.

PHILOSOPHY-LAW COMBINATION PROGRAM. In addition to the general requirements for graduation listed earlier in the catalog, a minimum of 45 credits in Philosophy must be earned in three years. The first year of law will complete requirements for the degree of Bachelor of Arts with a major in Philosophy. Students must take Philosophy 110, 120, 201, 202, 203, 322, and either 320 or 321, and should take as many as possible of the following courses: Philosophy 330, 350, 354, 386, 389, and 422.

FOR UNDERGRADUATES

For explanation see Index under "Symbols"

100 INTRODUCTION TO PHILOSOPHY 1Q A W S 5. The main problems of metaphysics, theory of knowledge, and moral philosophy, in the manner in which great philosophers reach their conclusions.

101-102 INTRODUCTION TO PHILOSOPHY 3Q A W S 2 (103) Theory of knowledge (102) Metaphysics. (100) Moral Philosophy. Credit not allowed for both this course and 106.

110 LOGIC 1Q A S 5. The valid forms of reasoning, the methods of science, and the detection of fallacies.

120 ETHICS 1Q A S 5. The nature of moral values, standards of moral judgment, moral problems in personal life and in social relations.

121-122 ETHICS 2Q A W 3. The nature of moral values, standards of moral judgment, moral problems in personal life and in social relations. Credit not allowed for this course and 120.

200 HISTORY OF ANCIENT PHILOSOPHY 1Q A 5.

202 HISTORY OF MEDIEVAL AND RENAISSANCE PHILOSOPHY 1 Q W 5 Prereq 201.

203 HISTORY OF MODERN PHILOSOPHY 1Q S 5 Prereq 202.

210 SYMBOLIC LOGIC 1Q W 5. Theory and practice in the kind of logic also known as formal or mathematical logic. Applications to the foundations of mathematics and in theory of scientific investigation.

FOR UNDERGRADUATES AND GRADUATES

301-302-303 GREAT PHILOSOPHERS 3Q A W S 1. (Given in the summer for 3 cr or 364). Enter any quarter. (301) Greek, Roman and early Christian thinkers. (302) Late medieval, Renaissance and some modern thinkers. (303) Recent and contemporary thinkers. Not open to Philosophy majors for graduate credit.

350 MODERN ETHICS 1Q W 5 Prereq 120. Recent theories on the nature of moral concepts; these will include naturalism, intuitionism, emotivism, and existencialism.

351 SOCIAL ETHICS 1Q S Su 3 e/y Prereq 120. Implications of different ethical systems for personal and social responsibilities and actions.

352 PHILOSOPHY OF LAW 1Q A 3 Preq 5 credits in Philosophy. Various concepts of law in their relation to individual freedom and to social order; philosophical justification of different forms of authority.

359 PHILOSOPHY IN THE TWENTIETH CENTURY 1Q A 5 Prereq 10 credits in Philosophy.

359 AESTHETICS 1Q S S 3 Prereq 3 credits in Philosophy. The nature of aesthetic experience, of the standards of art criticism, and of the kinds of knowledge communicated by art. Readings from philosophers, artists and art critics.

341 PHILOSOPHY IN LITERATURE 1Q A W Su 3 Prereq 10 credits in literature or Philosophy or =. Philosophical thought in selected masterpieces of literature.

350 THEORY OF KNOWLEDGE 1Q S 3 e/y Prereq 10 credits in Philosophy. Foundations of belief and reliable knowledge; the claims of rationalism, empiricism, pragmatism, mysticism, authoritarianism, and skepticism.

351 METAPHYSICS 1Q W 3 Preq 10 credits in Philosophy. Theories of reality including study of such fundamental concepts as being, substance, causation, universal, particular, and process.

359 PHILOSOPHY OF LANGUAGE 1Q S 2 e/y Preq 5 credits in Philosophy and c/i. Recent investigations into the structure of ordinary and ideal languages as systems of signs and resulting conclusions for Philosophy.

359 CONTEMPORARY PHILOSOPHIES OF SCIENCE 1Q A 3 e/y Preq 110 or =. History and critical study of some contemporary theories concerning the nature and limits of science, including logical empiricism and operationism.

359 PHILOSOPHY OF RELIGION 1Q W 3 e/y Preq 5 credits in Philosophy. Philosophical interpretation of religious experience, belief and practice.

359 ORIENTAL THOUGHT 1Q W 3 o/y Preq 5 credits in Philosophy. An introduction to the philosophical themes in some Hindu, Buddhist, and Taoist literature.

359 PLATO 1Q W 3 e/y Preq 201; or 10 credits in Philosophy and c/i. Reading and interpretation of selected works.

359 ARISTOTLE 1Q S 3 e/y Preq 201; or 10 credits in Philosophy and c/i. Reading and interpretation of selected works.

359 DESCARTES, SPINOZA, LEIBNIZ 1Q A 5 e/y Preq 203; or 10 credits in Philosophy and c/i. The development of Continental Rationalism.

359 LOCKE, BERKELEY, HUME 1Q W 5 o/y Preq 203; or 10 credits in Philosophy and c/i. The development of British Empiricism.

359 KANT 1Q S 5 o/y Preq 203; or 10 credits in Philosophy and c/i. Reading and interpretation of selected works.

359 NINETEENTH CENTURY DIALECTICAL PHILOSOPHY 1Q W 3 e/y Preq 203; or 10 credits in Philosophy and c/i. Dialectical idealism (Hegel) and dialektisches Idealismus.

359 PHILOSOPHICAL LIBERALISM 1Q A 3 o/y Preq 5 credits in Philosophy. Development of the chief concepts of liberalism, such as liberty, civil rights, and social justice.

359 IDEALISM 1Q S 3 e/y Preq 10 credits in Philosophy. Recent British and American idealist philosophies.

359 REALISM 1Q W 3 o/y Preq 10 credits in Philosophy. Twentieth century realism in Philosophy.

359 PRAGMATISM 1Q S 3 e/y Preq 5 credits in Philosophy.

359 EXISTENTIALISM 1Q W 5 Preq 10 credits in Philosophy and c/i. Selected readings from the works, both philosophical and literary, of prominent existentialist thinkers.

359 PROBLEMS IN PHILOSOPHY 3Q a/q V R-9 Preq 15 credits in Philosophy and c/i.

420 SEMINAR: THEORY OF VALUES 1Q S 3 Prereq 15 credits in Philosophy and c/i.
PHYSICAL SCIENCES

are the sciences which concern themselves primarily with the inanimate aspects of man's environment—the fields of Astronomy, Chemistry, Geology, Mathematics, and Physics.

Four years are required for the degree of Bachelor of Arts. During the first two years the student has the opportunity to study in all five fields. In the junior and senior years the student takes advanced work in the area of his choice. Since more advanced mathematics is necessary for adequate understanding of modern physics, students who choose that field must complete calculus.

This program enables the student to gain broad insight into these related areas of the physical sciences as well as to do some intensive work in one or more of them.

Students completing this program are prepared for beginning positions in industry or for work toward more advanced degrees. Those electing to teach may qualify to do so by taking the required courses in education and completing courses to meet requirements in a field taught in high schools in addition to the area chosen for intensive work.

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, fifty-five credits in physics must be earned for the Bachelor of Arts degree with a major in physics. In preparation for advanced courses, a student should take Physics 221-222-223 in the sophomore year. Required courses offered in other departments: Mathematics 116, 119, 118, 291, 252, 353; Chemistry 121-122-123. The foreign language requirement listed earlier in the catalog must be satisfied.

FOR GRADUATES

500 RESEARCH a/q V R-15. Work on selected problems under direction.

699 THESIS a/q V R-15.

PHYSICS

is the science that has as its objective the formulation and verification of laws or relationships among the different physical quantities. Some of the most important of these quantities are mass, time, length, force, energy, momentum, electric charge, electric field strength, electric potential, entropy, wave length. These quantities and the relations among them, that we call laws, have been found to serve in and to explain a wide range of phenomena such as occur in the subjects of mechanics, heat, electricity, magnetism, light, atomic and nuclear physics and in such related subjects as engineering, biophysics, meteorology and geophysics. In addition the subject of philosophy is profoundly influenced both by the methods and developments of physics.

The Bachelor of Arts and Master of Arts degrees are offered.

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, fifty-five credits in physics must be earned for the Bachelor of Arts degree with a major in physics. In preparation for advanced courses, a student should take Physics 221-222-223 in the sophomore year. Required courses offered in other departments: Mathematics 116, 119, 118, 291, 252, 353; Chemistry 121-122-123. The foreign language requirement listed earlier in the catalog must be satisfied.

FOR GRADUATES

500 RESEARCH a/q V R-15. Work on selected problems under direction.

699 THESIS a/q V R-15.
POLITICAL SCIENCE—73

POLITICAL SCIENCE

is the study of government and politics both in their domestic and international aspects. By meeting requirements outlined below, a student may earn a Bachelor's degree in Political Science, in Political Science and Economics, or in Political Science and History. A major of Arts degree in Political Science is also offered.

Courses offered in the Political Science department are designed to aid students in attaining the following objectives:

1. to assist all students in securing a broad liberal education and to equip them with the knowledge and skills necessary for effective discharge of the duties of American citizenship;
2. to provide undergraduate preparation for those students who propose to continue the study of Political Science at the graduate level or to enter the graduate college teaching and research;
3. to offer a broad program of training for those students who plan careers in government or politics, including training both for the foreign service and the domestic public service at the national, state, and local levels;
4. to assist in preparing students for careers in teaching at both the elementary and secondary levels;
5. to provide a sound background for those students who intend to enroll in law or other professional schools.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN POLITICAL SCIENCE. In addition to the general requirements for graduation listed earlier in this catalog, the special requirements must be completed for the Bachelor of Arts degree with a major in Political Science: A minimum of 45 credits in Political Science is required with 30 credits from courses numbered over 300 and including Political Science 491.

A student may offer a combination major in Political Science and Economics with a major in Political Science: A minimum of 45 credits in Political Science is required with 30 credits from courses numbered over 300 and including Political Science 491.

All students majoring in Political Science will complete the integrated introductory sequence 101, 202-203 before taking other courses in Political Science.

Upper division work in Political Science is offered in American Political Institutions, Comparative Government, International Affairs, Public Administration, Public Law, and Political Theory. Each major in Political Science must present credits in at least four of these fields.

A student may offer a combination major in Political Science and Economics with a minimum of 60 credits selected from the following disciplines: at least 27 credits must be in each discipline. The required courses are: Political Science 101, 202, and 203; and Economics 201, 202, 203, 300, 301, 302, 303. A student may choose from upper division economics courses and 15 additional credits from Political Science. Twelve hours of the Political Science work must be in upper division courses. All graduating seniors will take comprehensive examinations in the fields of Political Science offered. Either Political Science 491 or Economics 303 will be required.

Either the completion of five quarters of a foreign language or the demonstration of a satisfactory reading knowledge of historical, legal or political literature in such a language is required.

With the consent of the Chairman of the Department, a student may in Political Science 306, 307, 311, and 312, and in Journalism 290 in partial fulfillment of the major requirements for a degree.

To earn a Bachelor of Arts degree with a major in Political Science and History together with a minor in Laws degree, the student must satisfy as many requirements for graduation as is possible during his freshman year. As a sophomore he will be expected to register for History 241, 242, 243, 245, 251, 252 and 253, and Political Science 202, 203 leaving free approximately seven hours per quarter for the completion of requirements and for electives. As a junior, the student will select a minimum of 31 hours from the offerings of the Department with Political Science 323, 326, 341, and 365 and also History 376 and 345 and 346 as required or highly recommended courses. In lieu of or in addition to the above, electives may be chosen from Economics 304, 305, and History 306, Political Science 331, 353, 355, 375, 381, 388, 389, 391, and History 370 and 371, depending on the student's preparation and objectives.

FOR UNDERGRADUATES

For explanation see Index under "Symbols"

101 INTRODUCTION TO GOVERNMENT 1Q S Su 4. Comparative study of fundamental political institutions of modern governments, including constitutions, political parties, legislatures, executives, and courts.

202-203 AMERICAN GOVERNMENT 2Q A W Su 4. (202) The constitutional principles of the national government. The democratic political processes, including public opinion, interest groups, political parties, and elections; (203) the structure of the national government, its organization, performance, functions; the national government, including finance, business, labor, agriculture, conservation, welfare, national defense, and collective security.

231 INTERNATIONAL RELATIONS 1Q S Su 3. A general introduction to the modern political system, the role of power and policy, forces inducing tension, legal and institutional devices for adjustment of conflict.

241 POLITICAL PARTIES AND ELECTIONS 1Q A Su 3 Prereq 202-203. The organization and work of American political parties; the conduct and control of nominations and elections; parties and political democracy.

FOR UNDERGRADUATES AND GRADUATES

231 PARLIAMENTARY DEMOCRACIES 1Q W 3 Su 3 Prereq 101. Parliamentary governments with emphasis on Great Britain and France.

222 TOTALITARIAN GOVERNMENTS 1Q S Su 3 Prereq 101. Dictatorship, with emphasis on the Soviet Union.

331 INTERNATIONAL ORGANIZATIONS 1Q A Su 3 Prereq 231. The machinery of international cooperation with particular reference to the machinery of the United Nations.

332-333 INTERNATIONAL PUBLIC LAW 2Q A W 3 Prereq 8 or in the Department. The law of nations in relation to peace, war, and collective security.

341 PRESSURE GROUP POLITICS 1Q W 3 Prereq 241. The role of interest groups in a democracy; the interaction of interests with public opinion, political parties, legislatures, executives, administration and the courts.

351-352 THE DEVELOPMENT OF POLITICAL THOUGHT 1Q A Su 101. The development of political thought from ancient origins to the early modern period. (352) Western political thought from its early modern roots to the twentieth century.

353 AMERICAN POLITICAL THOUGHT 1Q S 4 Prereq 101 or 203. American political thought, both systematic and popular from colonial origins to the present.

361-362 PUBLIC ADMINISTRATION 2 Q A W 4, Su 3 Prereq 101 or 203 (361) The legal, political, and organization setting of American public administration; the administrative process, including finance and personnel. (362) Problems and techniques of public administration illustrated through the study of case materials.

363 PUBLIC PERSONNEL ADMINISTRATION 1Q S 3 Prereq 361. Personnel practices of public agencies, including recruitment, selection, training, classification, and rating of public employees; organization for personnel management in government.

365 GOVERNMENT REGULATION OF BUSINESS 1Q S 3 Prereq 265. The theoretical and legal foundations of governmental regulation to control business enterprises and to promote the public interest.

371-379 THE AMERICAN CONSTITUTIONAL SYSTEM 2Q W S 3 Prereq 203. The constitution of the United States in the jurisprudence of the Supreme Court.

375 PRINCIPLES OF ADMINISTRATIVE LAW 1Q W 5 Prereq 363. The principles of public administration, including the rules of administrative action, the practices of administrative agencies, and the determination of legal issues vis-à-vis administrative discretion.

381 STATE GOVERNMENT 1Q A 3 Prereq 203. Structure, functions, and operations of state governments; relation of states to other units of local government; administrative organization and regulation including constitutional reforms. Special attention to Montana.

383 MUNICIPAL GOVERNMENT 1Q S 3 Prereq 203. Legal basis of local government; municipal government; legal aspects; mayor-council, commission, and council-manager plans, municipal finance, state and federal relations, problems of modern cities and metropolitan areas.

387-389 PROBLEMS OF MONTANA GOVERNMENT 3Q A W S 9 R-9 Prereq 12 cr in the Department including 367, 368, 369 recommended, and c/l. Enter any quarter. (387) Problems in state government other than legislative. (388) Problems in state government other than executive. (389) Problems in local government. Research and field study, visits to governmental agencies, discussion with public officials.

391 PROBLEMS IN POLITICAL SCIENCE 3Q A W S Su V 2-4 R-9 Prereq 20 cr in the Department. Research in fields selected according to the needs and objectives of the individual student.
PRE-MEDICAL SCIENCES

are designed for students who wish to prepare for entry into medical, dental, pre-veterinary medicine or nursing schools. Medical schools require three years of such training and in most cases prefer four years. The four-year curriculum offers the degree of Bachelor of Arts with a major in Pre-medical Sciences which is described below. However, pre-medical students may take their degree in any area as long as they are careful to include the required pre-medical courses. These requisites have been standardized by the medical profession and its governing or licensing boards. Primarily they require basic sciences (Chemistry, Mathematics, Physics, and Zoology), Foreign Language, Literature, Psychology, and Social Studies. Superior scholarship is of equal importance since medical and dental schools have more applicants than they can accept for admission.

HIGH SCHOOL PREPARATION. In addition to the general requirements for admission to the University, the student needs at least three years of high school mathematics. It is also recommended that the high school preparation include one year of a laboratory science, two years of French or German and considerable background in literature and social studies.

PRE-MEDICAL SCIENCES STUDENT. The majority of medical schools now expect a broad background of knowledge, experience, and training on the part of applicants. The field in which a student receives his bachelor's degree is not important provided he has the minimal course requirements, demonstrates a high level of competency, and has a relatively well-balanced personality. Since not all applicants for entrance to medical schools are accepted, the pre-medical student is urged to plan his own University career with that idea in mind.

The pre-medical sciences student is advised to get a Bachelor's degree in a field of his own choice. However, he should make sure that he can satisfy within the time available (1) the University requirements for admission to the pre-medical sciences, (2) the special course requirements listed immediately above the student must take Psychology 5-10 credits; 15 credits of an approved course of study in one field; and additional electives selected from the non-sciences to complete University credit requirements for graduation.

MINIMUM COURSE REQUIREMENTS FOR THE PRE-MEDICAL SCIENCES STUDENT. English, Phys Ed, Mli Sci, Group and other University requirements listed earlier in the catalog; Chemistry through Organic Chemistry and Quantitative Analysis; one year of college mathematics; one year of college physics; Zoology through comparative anatomy and embryology. (Genetics is recommended); a reading knowledge or 20 credits in French, German or Russian.

SPECIAL REQUIREMENTS FOR THE BACHELOR OF ARTS DEGREE WITH A MAJOR IN THE PRE-MEDICAL SCIENCES: In addition to the minimum course requirements listed immediately above the student must take Psychology 5-10 credits; 15 credits of an approved course of study in one field; and additional electives selected from the non-sciences to complete University credit requirements for graduation.

Students who complete 135 credits of pre-medical work (plus six credits of Physical Education) at Montana State University, complete all requirements for the B.A. degree with a major in the pre-medical sciences and present evidence of satisfactory completion of the first year of medical school may be granted a B.A. degree in the Pre-medical Sciences.

It is possible for the Pre-medical Sciences student who has satisfied the course requirements specified above to earn a Bachelor's degree in some other field than the Pre-medical Sciences. A degree in a related field such as Microbiology, Chemistry, Mathematics, or Zoology may be earned by completing minimal course work in the area selected as approved by the Chairman of the major department concerned.

PRE-MEDICAL SCIENCES CURRICULUM

(Medicine, Dentistry, Veterinary Medicine)

Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>A</th>
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</thead>
<tbody>
<tr>
<td>English 101-102-103</td>
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</tr>
<tr>
<td>Mathematics 112, 116, 118</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Chemistry 121-125-125</td>
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<td>Elective</td>
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<tr>
<td>H&amp;PE and ROTC (see below)</td>
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Sophomore Year

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<th>Course</th>
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<tbody>
<tr>
<td>Zoology 111, 112, 113</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Chemistry 241-242</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>French 101 or elective</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Psychology 110</td>
<td>5</td>
<td>5</td>
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</tr>
<tr>
<td>Social Science</td>
<td>5</td>
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<td>5</td>
</tr>
<tr>
<td>H&amp;PE and ROTC (see below)</td>
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Junior Year

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<th>Course</th>
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<th>S</th>
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<tbody>
<tr>
<td>Chemistry 245 and 370</td>
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<tr>
<td>Physics 111-112-113 or 221-222-223</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>For Language 101-102 or 102, 103</td>
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<td>5</td>
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</tr>
<tr>
<td>Social Science</td>
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Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>A</th>
<th>W</th>
<th>S</th>
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</thead>
<tbody>
<tr>
<td>Foreign Language 211, 212</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>(Zoology 385)</td>
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<tr>
<td>Humanities</td>
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<td>Social Sequence</td>
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<tr>
<td>Elective</td>
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</tr>
<tr>
<td>Social Science</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>ROTC 101-102-103, 201-202-203</td>
<td>6</td>
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</table>

PSYCHOLOGY

is the science concerned with principles of behavior of living organisms. It deals with processes of learning, motivation, emotion, perception, problem solving, personality, intelligence and group behavior.

The Bachelor of Arts, Master of Arts, and Doctor of Philosophy degrees are offered (see Graduate School).

Minimum preparation for professional work in psychology requires an M.A. degree, and full professional competence requires the Ph.D. degree. The fully trained student may select from a variety of positions in laboratories, clinics, hospitals, schools and colleges, business and industry, and governmental agencies. At present and in the foreseeable future, the number of jobs far exceeds the number of trained psychologists who can fill them.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE IN PSYCHOLOGY. 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: at least 45 credits in psychology, including Psychology 110, 210, 310, 311, 312, and 411, with at least 25 credits in psychology courses numbered above 299; Mathematics 125; and a reading knowledge or five quarters (25 to 25 credits) in one modern language. Other courses recommended for psychology majors include Philosophy 210 and 353; and Zoology 101 or 202.
### RECOMMENDED COURSE SEQUENCE

#### Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Psychology 110—Introduction to Psychology</td>
<td>5</td>
</tr>
<tr>
<td>Mathematics 105—Intermediate Algebra</td>
<td>5</td>
</tr>
<tr>
<td>Modern Language: 101-102-103</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 220—Psychological Statistics</td>
<td>5</td>
</tr>
<tr>
<td>HPE 100—Physical Education</td>
<td>2</td>
</tr>
<tr>
<td>ROTC 101-102-103—Military or Air Science (Men)</td>
<td>2</td>
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</table>

#### Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Choice of appropriate Psychology courses</td>
<td>10</td>
</tr>
<tr>
<td>Modern Language 211-212</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
<td>5</td>
</tr>
<tr>
<td>HPE 100—Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>ROTC 201-202-203—Military or Air Science (Men)</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Junior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 310-311-312—Experimental Psychology</td>
<td>5</td>
</tr>
<tr>
<td>Philosophy 210 or Elective</td>
<td>5</td>
</tr>
<tr>
<td>Zoology 202—Human Physiology</td>
<td>5</td>
</tr>
<tr>
<td>Electives</td>
<td>5</td>
</tr>
</tbody>
</table>

#### Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 411—Systematic Psychology</td>
<td>5</td>
</tr>
<tr>
<td>Choice of 400-level Psychology courses</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
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</tbody>
</table>

### SPECIAL REQUIREMENTS FOR THE MASTER OF ARTS DEGREE IN PSYCHOLOGY

In addition to the general requirements of the Graduate School, the following special requirements must be completed for the Master of Arts degree in psychology: at least 43 credits in courses numbered above 299, which may include not more than 10 credits in Psychology 699, and which must include Psychology 500-506-511 and 310-311-312. Upon completion of two quarters in residence or completion of 30 graduate credits, the student is required to pass a comprehensive written examination in selected areas of psychology.

The Doctor of Philosophy degree in Psychology includes completion of the above requirements and also those outlined under the Graduate School.

### MASTER OF ARTS IN GUIDANCE AND COUNSELING

State statement under Graduate School.

### FOR UNDERGRADUATES

- **Introduction to Psychology**
  - 1Q A W S Su S 5 (5-0)
  - Psychological methods and principles, and their application to problems of human adjustment.

- **Psychological Investigation**
  - A W S Su V 1-3 R-3
  - Prereq 110 and c/l.

- **Comparative Psychology**
  - 1Q S 3 (3-0)
  - Supervised investigation of psychological problems.

- **Psychological Statistics**
  - 1Q S 5 (4-2)
  - Application of statistical techniques to psychological data.

- **Child and Adolescent Psychology**
  - 1Q A W S 5 (5-0)
  - Prereq 110. Behavioral development through adolescence, with emphasis on the research literature.

- **Social Psychology**
  - 1Q A 5 (5-0)
  - Effects of social environment on human behavior.

- **Psychology of Business**
  - 1Q A W 5 (5-0)

- **Psychology of Leadership**
  - 1Q A 3 (3-0)
  - The leadership role examined in terms of behavioral principles.

### FOR UNDERGRADUATES AND GRADUATES

- **Experiential Psychology**
  - 3Q A W S 5 (3-4)
  - Prereq 109 credits in psychology including 220. Emphasis on professional associations and the professional role.

- **Correlated Analysis**
  - 1Q W 5 (3-4)
  - Selection, classification, and training; worker efficiency and adjustment problems.

- **Industrial Psychology**
  - 1Q S 5 (3-0)
  - Prereq 110. Applications of psychology in industry.

- **Psychometrics**
  - 1Q S 5 (3-4)
  - Prereq 220. Psychophysical methods and psychological scaling.

- **Psychological Testing**
  - 3Q A W S 5 (3-2)
  - Prereq 220 is not a prereq for 353. (351) Test of personality, interests, attitudes, and values.

- **Personality Dynamics**
  - 1Q A W S 5 (5-0)
  - Principles of motivation, frustration, conflict, and the mechanisms of defense. Major emphasis on psychodynamic analysis. (Offered by extension for 3 credits.)

- **Abnormal Psychology**
  - 1Q W S 5 (3-0)
  - Prereq 110. Introduction and supervision of clinical reaction patterns, with emphasis on their psychological dynamics.

- **Scientific Method in Psychology**
  - 1Q W 5 (5-0)
  - Critical thinking, study of major applications of research, and critical interpretation of research studies.

- **History of Psychology**
  - 1Q W 3 (3-3)
  - Major developments in psychology, with emphasis on important contributions to the field.

- **Systematic Psychology**
  - 1Q S 3 (3-0)
  - Prereq 310-311-312. The historical development of concepts, methods, and theories in psychology.

- **Physiological Psychology**
  - 1Q W 3 (5-0)
  - Prereq 206, 310-311-312; or graduate standing and c/l. The physiological and neurological correlates of behavior. Survey of basic experimental evidence.

- **Thought Processes**
  - 1Q W 5 (3-3)
  - Prereq 10 credits from 310-311-312 and 290. Experimental and theoretical analysis of problem solving, imagination, concept formation, and other complex symbolic behavior.

- **Survey Research**
  - 1Q S 5 (3-4)
  - Prereq 220 or = . Theory and methods of survey research, with review of area of application.

- **Group Dynamics**
  - 1Q S 5 (3-4)
  - Prereq 444. Social processes within small and large groups.

- **Theory and Methods of Social Psychology**
  - 1Q W 5 (3-4)
  - Prereq 220 or = . Effects of social structure upon human interaction. Field test of several hypotheses.

- **Individual Differences**
  - 1Q S 3 (3-0)
  - Nature and extent of individual and group differences.

- **Theories of Personality**
  - 1Q S 3 (3-0)
  - Current theories of personality and the experimental evidence upon which they are based.

- **Problems in Psychology**
  - 1Q a/q V R-9 in combined undergraduate and graduate work. Prereq 18 credits in psychology and c/l.

- **TOPICAL SEMINAR**
  - 1Q a/q V R-6
  - Prereq 15 credits in psychology and c/l. Topics of current interest with critical examination of the literature.

### FOR GRADUATES

- **Theory Construction in Psychology**
  - 1Q Su V R-8
  - Prereq 20 credits in Psyc and c/l. Seminar approach to selected topics related to construction of rigorous theories in psychology.

- **Psychological Professional Psychology**
  - 1Q W S 1 (1-0)
  - Open only to graduate majors in psychology. Bibliographic problems and the literature search; forms and problems of science; communicating, professional relationships with other professions and the public; legal and ethical problems of the psychological profession.

- **Advanced Experimental Methods**
  - 1Q S 3 (3-4)
  - Prereq 310-311-312 or = . Complex designs and techniques in psychological experimentation.

- **Theories of Learning**
  - 1Q S 4 (4-0)
  - Prereq 311 or = . Critical review of current learning theories based on analysis of fundamental concepts, experimental data, and theoretical implications.

- **Advanced Psychological Statistics**
  - 1Q A 5 (5-0)
  - Application of statistical procedures to the design of experiments; assumptions underlying techniques of sampling and measures of association and significance.

- **Advanced Child and Adolescent Psychology**
  - 1Q W 5 (4-0)
  - Prereq 290 or Edeu 290 and teaching experience. Theories and research on motivation, personality, emotions, attitudes, social learning and adjustment in children from birth through adolescence.

- **Individual Aptitude Testing**
  - 3Q A W S 3 (1-4)
  - Prereq 332 and c/l. Enter any quarter. Administration, scoring, interpretation of standard tests, with supervised practice. (550) Stanford-Binet Scale. (551) Wechsler Adult Intelligence Scale. (552) Other tests at the childhood and preschool levels.

- **Psychopathology**
  - 1Q S 5 (5-0)
  - Major psychoanalytic theories of the major functional and organic disorders; research literature.

- **Advanced Perception**
  - 1Q W 5 (3-4)
  - Current literature and theoretical models of perception.

- **Advanced Physiological Psychology**
  - 1Q S 5 (3-4)
  - Brain mechanisms and behavior; electrophysiological correlates of behavior.

- **Clinical Approaches**
  - 1Q S 4 (2-4)
  - Clinical methods including interview and basic projective theory and techniques.
576-577 THEMATIC TEST ANALYSIS 1Q A W 2 (2-0) 2 (1-2) Prereq 561 or 561. Administration and interpretation of thematic tests, with emphasis on the TAT.

588 PRINCIPLES OF PSYCHOTHERAPY 1Q W 5 (5-0) Prereq 561. Major theoretical and technical approaches to psychotherapy.

671 CLINICAL PRACTICUM a/q V 1-3 R-9 Prereq either 550, 551, 571, 576, or 588. Supervised practice of diagnostic and therapeutic techniques in a clinical setting.

689 CLINICAL INTERNSHIP a/q 3 (0-6) R-9 Prereq acceptable proficiency in clinical techniques. Clinical internship offered by the psychology staff of a hospital, clinic, or other approved agency.

699 THESIS a/q V R-30.

RADIO AND TELEVISION

courses are designed to prepare students for occupations in the broadcast media, for effective use of radio and television in connection with occupations in other fields, or for greater appreciation of the media as audience members. Graduates in radio-television have many vocational opportunities as announcers, performers, writers, newsmen, program directors, managers, and executives of radio and television stations, or as radio-televison specialists in advertising agencies, and other businesses.

Students work toward either a Bachelor of Arts degree in Journalism with specialization in radio and television, or a Bachelor of Arts degree in Radio and Television. In either case, emphasis is placed on a strong liberal arts background, and approximately three-fourths of the courses for either degree will be taken in the College of Arts and Sciences. In addition to required courses in radio and television, special requirements must be met in curricula of related fields. Most of the radio-television courses are offered by the School of Journalism, but some departments in the College of Arts and Sciences also have offerings in the program. Production of programs for broadcast from the University's studios is included in the course of study. Modern equipment of professional quality in new studios and an adherence to high standards of performance prepare students to make significant contributions and successful careers in the broadcasting profession.

Note: Students wishing to major primarily in radio or television Journalism should take the radio-television sequence in Journalism.

The College of Arts and Sciences and the School of Journalism offer the following curriculum leading to a Bachelor of Arts degree in Radio-Television.

University Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>10-12</td>
</tr>
<tr>
<td>Physical Education</td>
<td>6-9</td>
</tr>
<tr>
<td>ROTC (men) Mill or Air Science</td>
<td>100-120</td>
</tr>
<tr>
<td>Group I</td>
<td>12</td>
</tr>
<tr>
<td>Group II</td>
<td>12</td>
</tr>
<tr>
<td>Group III</td>
<td>12</td>
</tr>
<tr>
<td>Additional Requirements</td>
<td>51-60</td>
</tr>
<tr>
<td>Group IV</td>
<td>12</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>25-35</td>
</tr>
<tr>
<td>English 201</td>
<td>12</td>
</tr>
<tr>
<td>Major Requirements</td>
<td>52-54</td>
</tr>
<tr>
<td>22 credits from: Radio-Television 140, 240, 242, 245, 246, 248, 441-442-443, 484; Drama 342; Speech 344; Drama 121, 131; Journalism 270, 297; Speech 118</td>
<td></td>
</tr>
<tr>
<td>Free Electives</td>
<td>45</td>
</tr>
</tbody>
</table>

FOR UNDERGRADUATES

For explanation see Index under "Symbols"

140 INTRODUCTION TO RADIO AND TELEVISION 1Q W S 3. Open to non-majors. History, organization, economics, social and legal responsibilities, and basic electronic theory of radio and telecommunication as media of mass communication.

240 STUDIO OPERATIONS 1Q A 1 (1-2) Open to non-majors. Operation of broadcasting and recording equipment. Production of programs.

242 RADIO-TELEVISION CONTINUITY 1Q S 3 Prereq 140 and Engl 201. The techniques of writing for radio and television. Writing programs for broadcast.

345 NEWSCASTING (see Journalism).

346 RADIO-TELEVISION PUBLIC AFFAIRS (see Journalism).

348 RADIO-TELEVISION ADVERTISING AND MANAGEMENT 1Q W 3 Prereq 140. Planning and broadcasting of advertising campaigns. Station management and sales principles.

FOR UNDERGRADUATES AND GRADUATES

400 CINEMATOGRAPHY (see Journalism).

441-442-443 RADIO-TELEVISION PRODUCTION AND DIRECTION 3Q A W S 3 Prereq 12 hours in radio-televison courses.

561, 552, 571, 576, or 588. Supervised practice of diagnostic and therapeutic techniques in a clinical setting. Clinical internship offered by the psychology staff of a hospital, clinic, or other approved agency.

671 CLINICAL PRACTICUM a/q V 1-3 R-9 Prereq either 550, 551, 571, 576, or 588. Supervised practice of diagnostic and therapeutic techniques in a clinical setting.

689 CLINICAL INTERNSHIP a/q 3 (0-6) R-9 Prereq acceptable proficiency in clinical techniques. Clinical internship offered by the psychology staff of a hospital, clinic, or other approved agency.

699 THESIS a/q V R-30.

For explanation see Index under "Symbols"
RESERVE OFFICERS TRAINING CORPS

The ROTC program is conducted by career Army and Air Force personnel. Both Departments offer 6 quarters of ROTC training to satisfy University requirements. All undergraduate male students other than veterans are required to take at least one quarter of Air Science or of Military Science during their freshman and sophomore years. Students interested in careers in the Air Force or Army should consult the Professor of Air Science or the Professor of Military Science.

AIR SCIENCE

BASIC COURSE: AIR AGE CITIZENSHIP EDUCATION

The academic requirements of the basic courses are determined by the Department of Science and Mathematics. Requirements include trigonometry, physics, and either French, German, or Russian. This course is recommended for all bachelor's degrees.

101-102-103 FOUNDATIONS OF AEROSPACE POWER 3Q A W S 2, (101-103) Basic Military Training, including exercises in drill ceremonies, and customs, with emphasis on proficiency and teamwork. Entrance must be secured and enrollment in a permanent military unit (selected from appropriate Group requirements). (103) Conflicts in the aerospace age and organization for national security. Basic military training including drill ceremonies and customs with emphasis on proficiency and teamwork.

201-202-203 FUNDAMENTALS OF AEROSPACE WEAPON SYSTEMS 3Q A W 2, S 0 Prereq 101-102-103. (201) Professional opportunities. Introduction to fundamentals of aerospace weapons systems, warheads, missiles. Characteristics of manned aircraft, propulsion systems. Nuclear energy and effects of nuclear weapons. (202) Target Intelligence, electronic warfare, defensive operations, tactical command, aeronautics, and contemporary military thought. (203) Basic military training, with emphasis on functions, duties and responsibilities of cadet non-commissioned officers. (Concurrent enrollment required. In a minimum of 2 credits in a course selected from appropriate Group requirements.)

110 AIR FORCE BAND 1Q S 0. Taught by the School of Music, which must approve all admissions. May be substituted for the basic mil­itar­y training phase of Air Science 101 and 201, except for those sophomores who have been selected for the Advanced Course. Band formations and marching military ceremonies.

ADVANCED COURSE: AIR FORCE OFFICER DEVELOPMENT

Admission to the Advanced Course is on application of the student and selection by the Professor of Air Science and the Department of Military Science. It is recommended that the student have completed and passed the six quarters and the Summer Training Unit is a requirement for all bachelor's degrees.

301-302-303 GROWTH AND DEVELOPMENT OF AEROSPACE POWER 3Q A W S 3. Subject matter will be announced to advanced students by the Air Science Department.

304 SUMMER TRAINING UNIT No credit. Four weeks at an Air Force Base after completion of Air Science 301-302-303. Organization and functions of an Air Force Base, air crew and aircraft indoctrination, officer orientation, military fundamentals, physical training and individual weapons.

401-402-403 THE PROFESSIONAL OFFICER 3Q A W S 3. Subject matter will be announced to advanced students by the Air Science Department.

MILITARY SCIENCE

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, physics and either French, German, Spanish, or Russian.

REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE WITH A MAJOR IN MILITARY SCIENCE

University Requirements Credits

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Education 101 (6 quarters)</td>
<td>9</td>
</tr>
<tr>
<td>Military Science 101-102-103 and 201-202-203</td>
<td>9</td>
</tr>
</tbody>
</table>
| Elective                                       | 2-5     | 26-29

(For his freshman and sophomore year, the student must select one of the academic electives listed below)

Major Requirements

<table>
<thead>
<tr>
<th>Group requirements satisfied herein:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 116, 118, or equivalent</td>
</tr>
<tr>
<td>121</td>
</tr>
<tr>
<td>Physics 101-112-113 or 221-222-223</td>
</tr>
<tr>
<td>History 102, 103 and 106</td>
</tr>
<tr>
<td>Political Science 201, 202, 203</td>
</tr>
<tr>
<td>Geography 331-332</td>
</tr>
<tr>
<td>English 201, 202 and 204</td>
</tr>
<tr>
<td>Foreign Language (French, German, Spanish or Russian 101-102-103, 201 and 202 or equivalent)</td>
</tr>
<tr>
<td>Psychology 344</td>
</tr>
<tr>
<td>Military Science 302-302-303, 401-402-403, and 313...</td>
</tr>
</tbody>
</table>

Electives. Before the requirement of six quarters of Military Science may be considered completed, one of the following courses must be completed at any time during the freshman or sophomore years:

101-102-103 INTRODUCTION TO THE ARMY 3Q A W S 2, Enter any quarter. (101) Principles of Army organization, missions, chain of command; U.S. Army and National Security with emphasis on various components and their role in the national defense team. Leadership, drill and command, basic and progressive training in leadership, drill, and ceremonies, military customs and courtesies. Emphasis is placed on teamwork and cooperation and proficiency. It is recommended that one of the "Electives" listed under University Requirements be substituted during the winter quarter. Continuation of leadership, drill and ceremonies.

201-202-203 ADVANCED INDIVIDUAL TECHNIQUES 3Q A W S 2, Prereq 101-102-103. Further training in military fire­arms, leadership, military customs and courtesies. Emphasis is placed on teamwork and cooperation and profi­ciency. It is recommended that one of the "Electives" listed under University Requirements be substituted during the winter quarter. Continuation of leadership, drill and ceremonies.

ADVANCED COURSE: OFFICER TRAINING

Enrollment in the advanced course is by application only. An applicant must pass a physical examination and the mental screening test prescribed by Department of Army. Further, he must be recommended by both the President of the University and the Professor of Military Science. Upon enrollment, the student is required to enter into a contract with the Government stipulating that he will pursue the course to its completion, unless sooner relieved by competent authorities. Further, the student must make a commitment if tendered. Advanced corps cadets are paid a subsistence allowance of $80 per day during the year except while at summer camp in which case he receives the pay of a Private E-1. If commis­sioned, the length of service is as required by Federal Reserve Forces Act of 1955, with a minimum of 2 years.


313 SUMMER CAMP No credit. Six weeks at an Army training center after completion of 302 from middle of June through first of August. Practical military training and tactical exercises with emphasis on the development of discipline and qualities of leadership.

401-402-403 MILITARY MANAGEMENT 3Q A W S 3, Prereq 301-302-303. Enter any quarter. (401) Operations to include staff organizations and procedure at Division level, coordination of
the Arms and Services, functions and techniques of intelligence, training and operations, staff sections and the planning and conduct of tactical operations. Leadership, Drill and Command; practical exercise of leadership functions as an officer in command positions during periods of drill and ceremonies. (405) Military Administration and Logistics, including personnel and supply management and procedures; troop movements by foot and motor, motor pool management; military justice and courts-martial procedure with practical work in mock court. Continuation of Leadership, Drill and Command.

SECRETARIAL-HOME ARTS

is a curriculum, designed especially for women, combining work in Secretarial Science and Home Economics. Home Economics provides a base for successful home and family life; and Secretarial Science provides training for a vocation for immediate or future use.

The courses in secretarial science provide training in typing, shorthand, filing, the use of office machines, and secretarial practice as preparation for general office work. Opportunity is provided for election of additional secretarial courses if added proficiency is desired. The work in home economics includes the study of nutrition, home equipment, house planning and furnishing, budgeting, child development, and family living. In addition, a general education is provided in areas outside the major fields.

SPECIAL REQUIREMENTS FOR THE BACHELOR OF SCIENCE IN SECRETARIAL-HOME ARTS.

University Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101-102-103</td>
<td>9</td>
</tr>
<tr>
<td>Physical Education 100 (6 quarters)</td>
<td>15</td>
</tr>
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</table>

Group Requirements

<table>
<thead>
<tr>
<th>Group</th>
<th>12-15</th>
<th>24-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>12-15</td>
<td>24-30</td>
</tr>
<tr>
<td>Group III</td>
<td>18-27</td>
<td>36-45</td>
</tr>
</tbody>
</table>

Major Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Economics 141, 155, 157</td>
<td>11</td>
</tr>
<tr>
<td>146 or 246</td>
<td>4</td>
</tr>
<tr>
<td>210</td>
<td>3</td>
</tr>
<tr>
<td>395</td>
<td>3</td>
</tr>
<tr>
<td>308</td>
<td>3</td>
</tr>
<tr>
<td>309</td>
<td>3</td>
</tr>
<tr>
<td>366 or 367 or 368 or Soc 402</td>
<td>3</td>
</tr>
</tbody>
</table>

Home Economics courses with credit toward major with 186 total credits not to exceed 35 cr.

Business Administration 162 (Placement test required)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>183 (Placement test required)</td>
<td>2</td>
</tr>
<tr>
<td>184, 185, 186 (1 year in H.S., no cr. in 184; 2 yrs. in H.S., no cr. in 184 or 185)</td>
<td>15</td>
</tr>
<tr>
<td>187</td>
<td>8</td>
</tr>
<tr>
<td>190</td>
<td>1</td>
</tr>
<tr>
<td>192</td>
<td>1</td>
</tr>
<tr>
<td>193</td>
<td>1</td>
</tr>
<tr>
<td>194</td>
<td>1</td>
</tr>
<tr>
<td>195</td>
<td>1</td>
</tr>
<tr>
<td>384</td>
<td>3</td>
</tr>
</tbody>
</table>

Business Administration courses with credit toward majors with 186 total credits not to exceed 30 cr.

Special requirements outside majors

Foreign Language (3 quarters or placement test) 15

Economics 201

Psychology 110

History 101, 102, 103

Political Science 101

Free Electives 35-39

186

SOCIAL WELFARE

explores the ways in which social problems affect people; the agencies which help people deal with these problems; and the methods used in such endeavor. Social Welfare courses involve case records and some field work or observation in addition to regular class work. Work in social sciences other than social sciences are required.

Those seriously considering a career in the field should plan on the two years of graduate professional training for which the course is preparatory. Social workers are employed in such positions as case workers, case workers, supervisors and administrators in public and private social agencies, courts, hospitals, mental-health clinics and youth serving organizations.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE

In addition to the general requirements for graduation listed earlier in the catalog, the following courses must be completed for the Bachelor of Science with a major in Social Welfare: 36 credits in departmental courses including at least 9 credits in Social Welfare. A foreign language is required as listed earlier in the catalog.

During the first two years, the following courses should be taken to provide a broad foundation: Anthropology 152 or 153; Economics 201-202-203; History 102-103 or 202-203; Political Science 202-203; Psychology 110; Sociology 101 and 102; and Social Welfare 181.

During the second two years, one course numbered 300 or above must be taken in each of the following fields: Anthropology, Economics, History, Political Science, Psychology, and Sociology. Work in the Community Services Laboratory during the senior year is required up to a maximum of 10 credit hours.

GENERAL INFORMATION: The undergraduate major in Social Welfare is available for those wishing a practical orientation toward social problems. Both theory and practice are emphasized to achieve the effectiveness needed in the job those wishing to enter graduate schools of social work will find the program designed for this purpose as well as for effective citizen participation.

The undergraduate program features the interdisciplinary approach—courses selected from the several social sciences to serve as a foundation for a limited number of courses which present Social Welfare content and method. Group methods are freely used.

FOR UNDERGRADUATES

For explanation see Index under "Symbols"

181 THE FIELD OF SOCIAL WELFARE 1q a/q 3. Social welfare functions. Development of modern social welfare and the distinctive features of the profession.

361 INTRODUCTION TO RECREATION LEADERSHIP 1q A 3 Prereq Sociology 101. Sociology of play, recreation and leisure time; community approach to recreation; recreation in industry, recreation for hospital patients, senior citizens, playgrounds; facilities and resources. Credit not allowed for this and H&PE 361.

363 RECREATION LEADERSHIP (CAMP LEADERSHIP) 1q B 3 Prereq Sociology 101. Principles and practice in group leadership, program skills for various age groups and for special groups such as the handicapped. Credit not allowed for this and H&PE 362.

382 GROUP METHODS IN TEACHING 1q Su only 3. Prereq 18 credits in the Social Sciences. The use of group methods in the teaching of content and skill subjects and the principles recognized as basic in their use.

FOR GRADUATES


383 GROUP METHODS IN MODERN SOCIETY 1q S 4 Prereq 181. Principles, principles and methods of group process. The place of group experience in democracy. The role of the group member, leadership, achieving group effectiveness. Group dynamics.

384 PUBLIC WELFARE 1q A 4 Prereq 181. 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.

481 CASE STUDIES 1q S 4 Prereq 12 credits in Social Welfare and 181. The analysis of case records drawn from a variety of social work settings.
SOCIOLOGY

SOCIOLOGY is a field in social science concerned with the behavior of people in groups, particularly societies and cultures, and the institutional arrangements under which people live.

It is concerned with contemporary civilization.

The Bachelor of Arts degree may be earned either in Sociology or a combination of Sociology and Anthropology. The Master of Arts degree is also offered (see Graduate School).

Graduates may engage in teaching, research, or government service. There are many opportunities for scholarships or fellowships in graduate work. Sociology is also a preparatory background for those who, after other studies, plan to engage in many of the familiar professions.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE. In addition to the general requirements for graduation listed earlier in the catalog, 50 credits in departmental courses are required for the Bachelor of Arts degree with a major in Sociology. A foreign language is required as listed earlier in the catalog.

At least 33 of the 50 major credits must be in sociology courses, including Sociology 101, 205, 303 and 310. Anthropology 152 or 153 and Social Welfare 181 must be taken. Remaining credits for the major may be earned from any courses in the catalog.

Credit may be allowed for Psychology 240 and Psychology 440.

COMBINED MAJORS. For the combined major leading to the degree of Bachelor of Arts in Sociology and Anthropology, a minimum of 60 credits is required, including at least 23 from sociology and 23 from anthropology. The following courses must be completed: Sociology 101, 205, 303, 310, 401; Anthropology 152, 153, 252, and at least one upper division course in the following areas: physical anthropology, linguistics, or personality and culture. No more than 18 credits may be offered in Anthropology 353, 366, and 451.

MASTER OF ARTS IN GUIDANCE AND COUNSELING. See statement under Graduate School.

FOR UNDERGRADUATES

101 INTRODUCTORY SOCIOLOGY 1Q A W S Su 5. A general study of human relations.

102 SOCIAL PROBLEMS 1Q A W S Su 5 Prereq 101. A general study of social and personal disorganization.

205 COLLECTIVE BEHAVIOR 1Q W 3. Prereq 101 or Psych 110. Theories relating to mass behavior. The characteristics of such social aggregates as crowds, mobs, and social movements.

204 COURTSHIP AND MARRIAGE 1Q a/q 2. A general consideration of factors in courtship and marriage.

206 ELEMENTARY SOCIAL STATISTICS 1Q a/q 3 Simple statistics and graphic techniques commonly used in the social sciences.

207 URBAN SOCIOLOGY 1Q S 4 Prereq 101. The rise and development of cities; social organization of the city; problems of urban communities.

FOR UNDERGRADUATES AND GRADUATES

202 SOCIAL STRATIFICATION 1Q S Su 3 e/y Prereq 101. The class system in contemporary society in terms of social class theory, class behavior, and current research in social stratification in American society.

203 SOCIAL SCIENCE METHODS 1Q A 3 Pre req 10 credits in Social Sciences. The methodology, techniques and instruments of measurement used in the social sciences.

204 POPULATION 1Q W 4, Su 3 Prereq 101. A quantitative and qualitative analysis of world population; vital statistics and population change, migration, and immigration.

205 CRIMINOLOGY 1Q S 5 Prereq 101 or 102. The causes, prevention, detection and control of crimes.

207 SOCIAL CONTROL 1Q W 3 e/y Prereq 101. Institutional and non-institutional processes and methods by which persons and groups are controlled.

209 INDUSTRIAL SOCIOLOGY 1Q S 4 Su 3 Prereq 101 or Psych 110. Work plants such as factories, offices, and stores; work group processes and applied problems; industrial relationships in the community.

210 DEVELOPMENT OF SOCIAL THOUGHT 1Q A 4 Prereq 101 or 102. Social thought from earliest times to the establishment of sociology.

231 RURAL SOCIOLOGY 1Q W 4, Su 3. Prereq 101. Organization and social relationships of rural life; the rural community; problems of rural life. Special emphasis on Montana and the Northwest.

201 FOUNDATIONS OF MODERN SOCIOLOGY 1Q W 4 Prereq 101. Selected sociological problems arising from the theories of Durkheim, Weber, and contemporary writers.

202 THE FAMILY 1Q W 5 Prereq 101. Comparative, historical and analytical study of the family.

203 ADVANCED PROBLEMS a/q V 1-2 R-6 Prereq c/l.

245 FIELD PRACTICUM 1Q a/q V 1-2 R-6 Prereq 102. Field work or internship, under supervision, in public and private agencies and institutions.

SPEECH

SPEECH includes courses in the field of General Speech, and, according to the interest of the student, emphasis in one or more areas of concentration: Public Address and Forensics, Speech Pathology and Audiology, Speech Education, Oral Interpretation, Radio and Television, Historical Pageant-Drama and Sociodrama, and Communications Research and Theory. Speech Graduates teach speech (including the coaching of forensics) in high school and college, enter employment in radio-television, public relations, and speech and hearing therapy, or do professional speaking.

The curriculum in Speech is designed to provide cultural background and technical training in oral communication which will contribute to student competence in social situations, in a chosen profession, and in professional speech work.

The Bachelor of Arts and Master of Arts degrees are offered.

SPECIAL REQUIREMENTS FOR THE UNDERGRADUATE DEGREE. In addition to the general requirements for graduation listed earlier in the catalog, the following requirements must be completed for the Bachelor of Arts degree with a major in Speech: a minimum of 46 credits in Speech, including Speech 111, 112, 116, 214, 241, 261, 392,
FOR UNDERGRADUATES

111 PRINCIPLES OF SPEECH 1Q A W S 5. This course aims, through various experiences in group discussion, oral reading, and public speaking, to develop conversational thought, thinking, and discriminative listening as these contribute to effective communication and human relations.

112 ARGUMENTATION 1Q A W S 5. The principles by which belief and conduct are influenced through appeals to logical reasoning. Attention to evidence, analysis, logic, fallacies, refutation, and their application to current economic, social, and political problems.

113 PARLIAMENTARY PROCEDURE 1Q S 2. The principles and practice of parliamentary procedures used in the conduct of fraternal, professional and community meetings.

118 VOICE AND DICTION 1Q A W S 3. Application of principles to the improvement of voice and diction.

119 PHONETICS 1Q A 3. The speech mechanism in relation to the production of auditory symbols. Introduction to the use of phonetic symbols.

123 PUBLIC SPEAKING 1Q A W S Su 3 Prereq 111. A beginning course in public speaking, offering additional theory and practicum to what is offered in 111.

214 DISCUSSION TECHNIQUES 1Q A 3. Study and practice in the techniques of making inquiries into and solving problems by the means of group thinking.

241 RADIO-TELEVISION SPEECH 1Q W 3 Prereq 118 and Journalism 140. Study and practice in the styles and techniques of oral presentation for radio and television under broadcast conditions.

261 INTRODUCTION TO ORAL INTERPRETATION 1Q A 3 Prereq 118. Study and practice of the techniques in the oral presentation of manuscript materials.

262 ORAL INTERPRETATION OF LITERATURE 1Q W 3 Prereq 214. Critical analysis of literature for oral presentation and the enhancement of literature through oral and auditory experience.

266-266-267 DEBATE 3Q A W S 2 Prereq 112. (266) The techniques, strategy and style of debate. (267) Intercollegiate debating. The principles and theory of debate.

315 PUBLIC PERFORMANCE 1Q A W S 2 R-6 Prereq c/i. The principles of public performance. Practice in presenting before public audiences oral readings, lecture recitals, choral reading or public addresses.

FOR UNDERGRADUATES AND GRADUATES

316 BUSINESS AND PROFESSIONAL SPEAKING 1Q A W S 3 Prereq 5 credits in Speech. The methods and techniques of speaking by leaders in business, labor, education, and the professions.

317 SPEECH IN TEACHING AND LEARNING 1Q A 3 Prereq 5 or in Speech. The speech competence of the teacher, the use of speech as a teaching device, and the principles by which the teacher works with the speech of his students.

318 APPLIED PHONETICS 1Q S 3 Prereq 119 or =. The narrow transcription of dialects, deviations from, and variations within standard American speech, their causes and frequency of appearance.

321 THE TEACHING OF SPEECH 1Q W 3 Prereq 10 credits in Speech. Planning the speech curriculum and its relationship to other school subjects; instructional materials, and methods of teaching Speech.

322 THE MODERN FORENSICS PROGRAM 1Q Su only 3 Prereq 10 credits in Speech. The coaching and direction of debate, oratory, declamation, extemporaneous speaking, and other speech contest activities in high schools and colleges.

343 ADVANCED PUBLIC SPEAKING 1Q S 3 Prereq 10 credits in Speech. Theories of speech composition, models of contemporary public address.

344 SURVEY OF RHETORIC 1Q A 3 Prereq 10 credits in Speech. The biographies and speeches of representative speakers, the schools to which they were identified, and their influence on the history of their period. The ancient Greek and Roman, British, and American public speakers of prominence.

345 HISTORY OF PUBLIC ADDRESS 1Q W 3 Prereq 10 credits in Speech. The biographies and speeches of representative speakers, the schools to which they were identified, and their influence on the history of their period. The ancient Greek and Roman, British, and American public speakers of prominence.

352 ORAL COMMUNICATION 1Q A 3 Prereq c/i. The process of oral communication in terms of relevant theory and evidence from the social sciences. Particular attention is given to conditions that facilitate and inhibit effective communication.
WILDLIFE TECHNOLOGY

is the study of basic science with particular emphasis upon the biological sciences, together with the development of special skills and techniques as a preparation for professional work in fish and game conservation and management. Wildlife Technology stresses biological concepts, Wildlife Management is the relationship of wildlife to problems of land management.

Closely allied are the operations of the Montana Cooperative Wildlife Research Unit at the University which is controlled, staffed, and supported by the Montana Fish and Game Commission, the United States Fish and Wildlife Service, the Wildlife Management Institute of Washington, D.C., and Montana State University “to provide full active cooperation in the advancement, organization, and operation of wildlife education, research, extension and demonstration programs.” The Unit investigates current wildlife problems in order to preserve and improve wildlife resources. It engages in research which contributes to the training of graduate students only.

Four years are required for the Bachelor of Science degree. The degree of Master of Science in Wildlife Technology is also offered (see Graduate Studies). Undergraduate courses are selected from other curricula as prescribed below. Instruction proceeds through use of textbooks, collateral reading, field work.

Graduates find employment with state fish and game conservation departments or federal agencies such as the Fish and Wildlife Service, the National Park Service, the Soil Conservation Service, the Food and Drug Administration, etc. Some become managers of wildlife on private estates. The better positions go to those who have received the master’s degree in Wildlife Management or Wildlife Technology. The field is becoming more specialized and certain institutions give graduate work leading to the doctor’s degree. Graduates with advanced degrees may enter college or university teaching.

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 degree of Bachelor of Science in Wildlife Technology.

Required courses in the first two years and in the last two years in the Aquatic and Terrestrial options are listed below.

Students electing the Aquatic option should elect additional courses from the following: Zoology 208, 209, 308, 399, 328, 461; Botany 101; Chemistry 125, 126, 127; Geology 101. It is recommended that the student plan to attend a Biological Station for one summer.

Students electing the Terrestrial option should elect additional courses from the following: Zoology 303, 307, 310, 328; Forestry 210; Geology 101; Microbiology 230.

CURRICULA IN WILDLIFE TECHNOLOGY

Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>A</th>
<th>W</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botany 111, 122, 123—Intro. to Biol., Gen. Bot., Local Flora</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Chemistry 101, 102, 108—General, Survey Organic</td>
<td>4</td>
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<tr>
<td>English 101, 102, 103—Freshman Composition</td>
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<tr>
<td>Mathematics 100—Intermediate Algebra</td>
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<td>Mathematics 110—Trigonometry</td>
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<td>Group Requirements</td>
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<tr>
<td>H&amp;PE 100—Physical Education</td>
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</tr>
<tr>
<td>ROTC 101, 102, 103—Military or Air Science</td>
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Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>A</th>
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<tbody>
<tr>
<td>Zool 112, 113—General Zoology</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Phys 111, and 112 or 113—General Physics</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Forestry 252—Surveying</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Group Requirements (or 10 credits winter or spring depending on physics 112 or 113)</td>
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<tr>
<td>H&amp;PE 100—Physical Education</td>
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<td>2</td>
<td>2</td>
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<tr>
<td>ROTC 201-202-203—Military or Air Science</td>
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</table>
ZOOLOGY

is the study of animals—how they are put together, how their bodies work, and how they adjust to their surroundings. It is a basic science for many professional fields such as medicine, pharmacy, wildlife, and physical education.

The Master of Arts (or Master of Science) and the Doctor of Philosophy degrees are also offered.

Undergraduate courses involve much laboratory work as well as opportunities for field work. During the summer extensive field experience is available at the Biological Station maintained on Flathead Lake for qualified upperclass and graduate students.

Graduates become high school teachers or, after advanced studies, instructors in colleges and universities. Others enter state or federal government service in health and conservation agencies. Many, with further training, enter medicine or related fields. A few establish themselves as fish culturists, fur farmers, pest control experts, and so on.

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: Zool 111, 112, 113, 429, and at least one course from each of the following 6 groups: (1) Morphology, 305, 364, 401; (2) Invertebrate Zoology, 206, 303, 311, 312, 321, 365, 365, 366, 366; (3) Vertebrate Zoology, 206, 306, 306, 310; (4) Physiology, 333, 340, 341, 401, 461; (5) Ecology, 307, 326, 365, 461; (6) Genetics, 365.

Students may substitute Chem 261, 262 for either group 3 or 4.

The following must also be completed: Botany 122, 123; Chemistry 121-122-123; Mathematics 110, 116, 118, and Physics 111-112-113 or 211-222-223.

The foreign language requirement listed earlier in the catalog must be satisfied. French, German, Russian, or other language approved by the department may be used. It would be wise for prospective graduate students to secure a reading knowledge of both French and German if possible.

The Pre-medical Sciences student may earn a degree in Zoology by completing requirements in that curriculum and presenting a total of 30 credits in Zoology or related fields as follows: Zool 111, 112, 113, 302, 385; any one course from Zool 306, 308, 309, 310, 321, 328, 322, 326, 365, 366, 461; and one course from Microbiology or Botany or one course from Zool 303, 304, 305, 333, 340, 341, 401.

Senior examinations are given only to candidates for honors.

M A S T E R O F ARTS OR M A S T E R O F S C I E N C E I N T E A C H I N G.

See statement under Graduate School.

SUGGESTED CURRICULUM IN ZOOLOGY

Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>A W S</td>
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<tr>
<td>Biology 111, 112, 113—Intro. to Bio., Gen. Zool.</td>
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<tr>
<td>English 101, 102, 103—Freshman Composition</td>
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<tr>
<td>Math 116, 113, 118—College Algebra, Trig, and Calculus</td>
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<tr>
<td>Group Requirements</td>
<td>0-2 3-5 0-3</td>
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<tr>
<td>HPE 101—Physical Education</td>
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<tr>
<td>ROTC 101, 102, 103—Military or Air Science</td>
<td>2 0 2</td>
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<td>or</td>
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<tr>
<td>Sophomore Year</td>
<td>18 15-17 17</td>
</tr>
<tr>
<td>Chem 121-122-123—College Chem</td>
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<tr>
<td>For Language 101-106-106—Elementary French, German, or Russian</td>
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<td>Group Requirements</td>
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<tr>
<td>or</td>
<td></td>
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<tr>
<td>Junior Year</td>
<td>16-18 15-18 16-18</td>
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<tr>
<td>Zoology Advanced Courses</td>
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<tr>
<td>Physics 111-112-113 or 221-222-223 General Physics</td>
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<tr>
<td>Foreign Language 211-212—French, German, or Russian or 365</td>
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<tr>
<td>Group Requirements</td>
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<td>or</td>
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<tr>
<td>Senior Year</td>
<td>14-17 14-17 15-17</td>
</tr>
<tr>
<td>Zoology Advanced Courses or Chem 261, 262</td>
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<tr>
<td>Botany 122, 123—General Botany, Local Flora</td>
<td>5 5 5</td>
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<tr>
<td>Zoology 429—Biological Literature</td>
<td>2-10 5-6 7-8</td>
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<td>FOR UNDERGRADUATES</td>
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<tr>
<td>111 INTRODUCTION TO BIOLOGY 1Q A 5 (3-4). Introduction to the basic principles of biology, including aspects of cell structure and metabolism, genetics, origin of life, and mechanics of evolution and adaptation. (Credit not allowed for both Bot 111 and Zool 111.)</td>
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<tr>
<td>112-113 GENERAL ZOOLOGY 2Q W S 5 (3-4) Prereq 111 or Bot 111 or =. A comparison of structure, function, and life histories of selected invertebrates and vertebrates. (Generally taken as a sequence including 111, 112-113.)</td>
<td></td>
</tr>
<tr>
<td>202 HUMAN PHYSIOLOGY 1Q S Su 5 (3-4) Prereq Sophomore standing or two quarters of college Zoology. The normal physiology of blood circulation, respiration, digestion, excretion, cardio-vascular, locomotion, coordination, and reproduction.</td>
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</tr>
<tr>
<td>206 (196) FIELD ZOOLOGY 1Q S 3 (2-5) Prereq 113. Collection, identification and preservation of animals. Field work.</td>
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<tr>
<td>FOR UNDERGRADUATES AND GRADUATES</td>
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</tr>
<tr>
<td>301 GENERAL COMPARATIVE EMBRYOLOGY 1Q A 5 (3-4) alternate year Prereq 311-312. The early stages of development of the invertebrates and vertebrates, including melosis, fertilization, cleavage, formation of the germ layers and early organogenesis.</td>
<td></td>
</tr>
<tr>
<td>302 VERTEBRATE EMBRYOLOGY 1Q W 5 (3-4) Prereq 113. The early stages of development of the vertebrates including organogenensis, with emphasis on birds (chick) and mammals (pig).</td>
<td></td>
</tr>
<tr>
<td>303 PARASITOLOGY 1Q S 5 (3-4) Prereq 113. Morphology, physiology, systematics, and life histories of representative animal parasites and techniques of their diagnosis, treatment, and control.</td>
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</tr>
<tr>
<td>304 (201) COMPARATIVE VERTEBRATE ANATOMY 1Q S 5 (3-4) Prereq 113. The comparative morphology of the vertebrates.</td>
<td></td>
</tr>
<tr>
<td>305 HISTOLOGY AND MICROTECHNIQUE 1Q W 5 (3-4) Prereq 113. Basic tissues and structure, and a limited amount of work is done in organology. Microtechnique with emphasis on the parasitic method.</td>
<td></td>
</tr>
<tr>
<td>306 HERPETOLOGY 1Q W 2 (3-2) a/y Prereq 113. The anatomy, distribution, and life histories of amphibians and reptiles.</td>
<td></td>
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<tr>
<td>307 AQUATIC BIOLOGY 1Q A 5 (3-7) Prereq 206 or 365 and Botany 122. The biology of freshwater systems with emphasis upon the fish and invertebrate fauna, with some consideration of their relationship to the food chains and habitats of aquatic vertebrates. Ecology, identification, and taxonomic position of aquatic organisms below vertebrates.</td>
<td></td>
</tr>
<tr>
<td>308 ORNITHOLOGY 1Q S 5 (3-4), Su 3 at Biological Station, Prereq 113. The structure, classification and life histories of birds. Weekly field trips. Students are expected to provide themselves with binoculars.</td>
<td></td>
</tr>
</tbody>
</table>
399 MAMMALOLOGY 1Q A 5 (3-4), Su 6 at Biological Station. Prereq 113. The classification, identification and life histories of mammals. Saturday field trips.

310 Ichthyology 1Q A 5 (3-4) Prereq 113. The systematics and distribution of the more important orders of fish, their collection and identification. Life histories and certain fundamentals of the physiology of fish are considered. Field trips.

311-312 INVERTEBRATE ZOOLOGY 2Q A W 5 (3-4) e/y Prereq 113. The anatomy, embryology, and phylogeny of the invertebrate animals.

321 PROTOZOOLOGY 1Q A 5 (3-4) o/y Prereq 113. Taxonomy, structure, natural history, physiology, and ecology of protozoans.

328 ANIMAL ECOLOGY 1Q S 5 (3-8) e/y Prereq 206, Bot 123 or =. Zool 307 or 311, 312 recommended. The relationships between animals and their environment with special emphasis on the invertebrates. Saturday field trips.

333 VERTEBRATE ENDOCRINOLOGY 1Q S 3 (3-4) Prereq 113. 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.

340-341 VERTEBRATE PHYSIOLOGY 2Q A W 5 (3-4) Prereq 113 and three quarters of college chemistry. (340) General physiological properties of protoplasm; blood, body fluids, and circulation; respiration and excretion. (341) Digestion, nutrition and intermediary metabolism; excitation, conduction, responses, senses; endocrinology and reproduction.

350 ECOLOGY OF WILDLIFE POPULATIONS 1Q W 3 (3-0) Prereq 113. The population dynamics of wildlife species with emphasis on recent literature. Productivity, turnover, carrying capacity, predation, methods of census and harvest.

364 INVERTEBRATES OF THE INTERMOUNTAIN REGION 1Q Su 3 (5-12) Prereq 113. The ecology, taxonomy and distribution of the invertebrates of the Rocky Mountain area, exclusive of parasites and insects.

365 ENTOMOLOGY 1Q S 5 (3-4) o/y Su 6 at Biological Station. Prereq 113. The structure, classification, life histories, distribution and ecology of insects.

366 AQUATIC INSECTS 1Q Su 3 (5-12) Prereq 113. The insect fauna, both immature and adult, aquatic habitats of Western Montana.

383 GENETICS 1Q A 5 (3-4) Prereq 113 or Bot 225. The mechanism of heredity, involving consideration of Mendelian inheritance, linkage systems, chromosomal aberrations, extra-chromosomal inheritance, and their relationship to structure and function. Credit not allowed for this course and Botany 265.

386 EVOLUTION 1Q A 3 (3-4) o/y Prereq 113 and Bot 122, 123, 385 or concurrent registration. The theories of evolution from the historical point of view; the nature of evolutionary processes, the evidence for evolution, and the factors of evolution. Credit not allowed for this and Bot 386.

401 CELLULAR PHYSIOLOGY 1Q W 5 (3-4) o/y Prereq Physics 113 or 223, Chem 202, and 2 courses in Botany, Microbiology, or Zoology. The life processes at the cellular level emphasizing the methods of physical science.

402 COMPARATIVE PHYSIOLOGY 1Q W 5 (3-4) e/y Prereq Physics 113 or 223, Chemistry 262 and one animal physiology course. A survey of the diverse ways in which different kinds of animals meet their functional requirements.

413 FISHERY SCIENCE 1Q W 3 (3-6) e/y Prereq 307, 310. The problems involved in investigations on fisheries biology with an analysis of, and some actual field experience in, methods employed in attacking these problems. Field trips.

429 BIOLOGICAL LITERATURE 2Q A W 1 (2-4) Prereq 20 credits in Bot or Zool. Student reports of literature of the trend of investigation and experimentation in biological fields.

431 PROBLEMS IN VERTEBRATE MORPHOLOGY AND TAXONOMY 1Q a/q V 1-3 Prereq 25 credits in Zool including adequate background courses in the subject and o/y. Primarily a problems type course involving semi-independent work. By variation of content, the course may be repeated during succeeding quarters.

432 PROBLEMS IN VERTEBRATE PHYSIOLOGY 1Q a/q V 1-5 Prereq 25 credits in Zool including adequate background courses in the subject and o/y. Semi-independent work. By variation of content, the course may be repeated during succeeding quarters.

433 PROBLEMS IN VERTEBRATE ECOLOGY 1Q a/q V 1-5 Prereq 25 credits in Zool including adequate background courses in the subject and o/y. Primarily a problems type course, involving semi-independent work. By variation of content, the course may be repeated during succeeding quarters.

434 PROBLEMS IN VERTEBRATE MORPHOLOGY AND TAXONOMY 1Q a/q V 1-5 Prereq 25 credits in Zool including adequate background courses in the subject and o/y. Semi-independent work. By variation of content, the course may be repeated during succeeding quarters.

435 PROBLEMS IN VERTEBRATE PHYSIOLOGY 1Q a/q V 1-5 Prereq 25 credits in Zool including adequate background courses in the subject and o/y. Semi-independent work. By variation of content, the course may be repeated during succeeding quarters.

436 PROBLEMS IN VERTEBRATE ECOLOGY 1Q a/q V 1-5 Prereq 25 credits in Zool including adequate background courses in the subject and o/y. Semi-independent work. By variation of content, the course may be repeated during succeeding quarters.

437 PROBLEMS IN VERTEBRATE MORPHOLOGY AND TAXONOMY 1Q a/q V 1-5 Prereq 25 credits in Zool including adequate background courses in the subject and o/y. Semi-independent work. By variation of content, the course may be repeated during succeeding quarters.

451 SEMINAR IN BIOLOGY 1Q Su 1 (5-2). Special problems in Biology. Offered at the Biological Station.

FOR GRADUATES

500 SEMINAR 3Q A W S 1 Prereq graduate standing in a biological science.

501 AREAS AND CONCEPTS OF ZOOLOGY 1Q A 1 Prereq graduate standing in Zoology or in Wildlife Technology. An orientation course for all new graduate students in Zoology.

502 HISTORY AND DEVELOPMENT OF BIOLOGICAL CONCEPTS 1Q W 3 (3-0) Prereq graduate standing in a biological science. Credit not allowed for this course and Botany 502.

510 POPULATION AND COMMUNITY ECOLOGY 1Q S 5 (2-8) Prereq 6 or more courses in Biol including Zool 308, 309, or 307 and 310, and 228 or 350, Bot 325, and Math 125 or =. The influence of physical and biotic factors on population structure, density, and productivity and on community organization. Theoretical as well as practical aspects are considered. Weekend field trips.

521 RADIATION-BIOLOGY 3Q A W S 2 (2-5), Su 5 (6-15) Prereq Bachelor's degree; major preparation in Physics, Chem or Biol with at least one year of college work in each of the other two fields. Introductory nuclear physics and the influence of nuclear radiation on biological systems.

551 GENERAL ECOLOGY 1Q Su 5 (6-15) Prereq Bachelor's degree; major preparation in Bot, Biol or Zool. Community concepts including succession, stratification, periodicity and energy relationships; introduction to population problems.

561 LIMNOLOGICAL METHODS 1Q Su 3 (3-3) Prereq 461, Chem 125. Practice in standard procedures employed. Field work.

600 ADVANCED ZOOLOGICAL PROBLEMS 1Q a/q V 1-5 Students with sufficient preparation and ability pursue original investigations.

609 THESIS a/q V R-15.

ZOOLOGY—83